ULLA HÄRKÖNEN

Reorientation of teacher education towards sustainability through theory and practice.

Proceedings of the 10th international JTEFS/

BBCC conference Sustainable development.

Culture. Education.

UNIVERSITY OF
EASTERN FINLAND

Reorientation of teacher education towards sustainability through theory and practice.

ULLA HÄRKÖNEN (ED.)

Reorientation of teacher education towards sustainability through theory and practice.

Proceedings of the 10th international JTEFS/ BBCC conference Sustainable development. Culture. Education.

Preface

The 10th International JTEFS/BBCC Conference "Sustainable Development. Culture. Education" was held on May 22–25, 2012 in Savonlinna, Finland. JTEFS/BBCC means "Journal of Teacher Education for Sustainability/Baltic and Black Sea Circle Consortium". The Consortium organises a conference every year in one of the member countries, and publishes spring and autumn volumes of its own journal, "Journal of Teacher Education for Sustainability", http://www.versita.com/jtes.

In 2012 the conference was organised by the School of Applied Educational Science and Teacher Education, Savonlinna Campus of the University of Eastern Finland. All three campuses, Savonlinna, Joensuu and Kuopio, participated in organising this conference, which is why we had so many topics presented. The theme of the conference was "Reorientation of Teacher Education towards Sustainability through Theory and Practice". The main areas of discussion were: Sustainable early childhood education (ECE) and preschool education; towards systemic and integrative research methodology in ESD studies; pedagogy of sustainable future: museums, forests and culture environments as platforms for 21st century learning; sustainable education issues in science education; sustainable ICT in education; adult education for sustainable development, arts, design and skills; home, health and well-being, tourism research - connections on well-being, education and sustainability; teacher education for inclusion; social pedagogy as a dimension of sustainable life; sustainability in community practices; and Earth Charter: values and multicultural approaches to education for sustainable development.

This conference celebrated ten years of work promoting education, especially teacher education, for sustainable development or sustainability. This work has been done in parallel with the UN Decade of Education for Sustainable Development (UN DESD: 2005–2014). The Conference followed UNESCO's rigorous and open definition of Education for Sustainable Development.

We thank the JTEFS/BBCC members who have hosted this and the other conferences in this series: Daugavpils University (Latvia), Tallinn University (Estonia), the University of Vechta (Germany), the University of Debrecen (Hungary), Anadolu University (Turkey), the Institute and Academy for Multimedia (Slovenia), Rhodes University (South Africa), Vilnius University (Lithuania), Siauliai University (Lithuania), the University of Helsinki (Finland), York University of Canada, UNESCO (Paris), and the University of Eastern Finland (Finland).

In the post-conference book 31 peer-reviewed and accepted articles are categorised under nine different titles. The content is divided into two parts: 29 articles form Part I, and two long texts form Part II. We have had 38 peer-reviewers from eight countries. Our own local committee of eight professors from three campuses have overseen the process. The editorial assistants, *Dzintra Iliško, Ginta Gedžūne and Inga Gedžūne* from Daugavpils University, Latvia, have done enormous work assisting me in the long review process. The persons of Kopijyvä have been responsible for publishing the book. I really thank you all!

Ulla Härkönen
Professor
President of JTEFS/BBCC Conference 2012

School of Applied Educational Science and Teacher Education
Savonlinna Campus
University of Eastern Finland, Finland

www.uef.fi/BBCC

Contents

Contributors

Gyula Lakatos   (University of Debrecen, Hungary)
Detlev Lindau-Bank   (University of Vechta, Germany)
Ilona Mičule   (Daugavpils University, Latvia)
Marja Nurmilaakso   (University of Helsinki, Finland)
Pirjo Nuutinen   (University of Eastern Finland, Finland)
Anita Pipere   (Daugavpils University, Latvia)
Harri Pitkäniemi   (University of Eastern Finland, Finland)
Sinikka Pöllänen   (University of Eastern Finland, Finland)
Jyrki Reunamo   (University of Helsinki, Finland)
Heikki Ruismäki   (University of Helsinki, Finland)
Inkeri Ruokonen   (University of Helsinki, Finland)
Ilga Salīte   (Daugavpils University, Latvia)
Hannu Savolainen   (University of Eastern Finland, Finland)
Tiina Selke   (Tallinn University, Estonia)
Astrīda Skrinda   (Daugavpils University, Latvia)
Aleksandra Šļahova   (Daugavpils University, Latvia)
Teemu Valtonen   (University of Eastern Finland, Finland)
Marika Veisson   (Tallinn University, Estonia)
Mikko Vesisenaho   (University of Jyväskylä, Finland)

LOCAL ACADEMIC BOARD OF PROFESSORS

Antti Honkanen   (University of Eastern Finland, Savonlinna campus, Finland)
Juha Hämäläinen   (University of Eastern Finland, Kuopio campus, Finland)
Ulla Härkönen   (University of Eastern Finland, Savonlinna campus, Finland)
Antti Juvonen   (University of Eastern Finland, Savonlinna campus, Finland)
Tuula Keinonen   (University of Eastern Finland, Joensuu campus, Finland)
Anna-Liisa Kosonen   (University of Eastern Finland, Savonlinna campus, Finland)
Sinikka Pöllänen   (University of Eastern Finland, Savonlinna campus, Finland)
Hannu Savolainen   (University of Eastern Finland, Joensuu campus, Finland)

Part I

Sustainable early childhood education (ECE) and preschool education

An alternative journey into forest kindergartens and the Reggio Emilia approach

Gaye Amus

Helsinki municipal day care centre Auringonkukka, Finland

ABSTRACT

The purpose of this article is to present a description and analysis of my experiences in the field of early childhood education in Finland - a journey which began in Turkey from a background in engineering and has become a career in which alternative education is explored.

During the last four years in Finland I have had the opportunity to work in various kindergartens, two of which were a forest kindergarten and a Reggio Emilia inspired kindergarten. I chose these kindergartens on the basis of my acquaintance with the Reggio Emilia approach and my interest in outdoor education as it is practiced in the Nordic countries. Some key experiences I had in Finland shall be described and their meaning analyzed in the context of innovations in early childhood pedagogy.

I will highlight some of my work experiences in a kindergarten in the Southern part of Finland, which operates according to the pedagogical principles of "at home in natural surroundings". A project called "The Treasure of Friendship" that was initiated in response to a case of bullying among a group of 5–7 year olds shall be presented. Other themes to be addressed include the importance of documenting educational activities and understanding the environment as being "the third teacher".

I will conclude with some thoughts about the ways in which the Nordic experiences and the practical knowledge that has been built there can be of inspiration to pedagogues around the world.

Keywords: forest kindergarten, outdoor education, Reggio Emilia approach, early childhood education, permaculture

"We need the tonic of wildness…At the same time that we are earnest to explore and learn all things, we require that all things be mysterious and unexplorable, that land and sea be indefinitely wild, unsurveyed and unfathomed by us because unfathomable. We can never have enough of nature."
— Henry David Thoreau, Walden: Or, Life in the Woods

INTRODUCTION

The Turkish Early Childhood Education (ECE) system consists of public and private services. Centre-based pre-school programmes run by the Ministry of National Education serve children in the age group 3–6 and are delivered in independent kindergartens or pre-school classes within public or private primary schools (UNICEF Turkey, 2012). Prior to coming to Finland, I worked in a private English Emergent kindergarten in İstanbul, Turkey, as an English teacher for three years from 2004-2007. During those years I also took an interest in alternative education, as it had been integrated sparsely into the Turkish ECE system. In 2006, the alternative kindergarten models in Turkey consisted of two Reggio inspired private kindergartens and few kindergartens that applied the Montessori method. There was one private kindergarten that focused on taking the children out to their playground all year round, and no Waldorf kindergartens existed. For this reason during the years 2005–2008, I travelled to Germany, Austria, Italy, Denmark and Finland to make study visits to kindergartens with a special interest in alternative education (Reggio Emilia, Waldorf, Montessori and Forest kindergartens) and how space is used for children.

What had inspired me the most in these kindergartens had been the forest kindergartens. As a teacher, having been indoors most of the time with the children and working in a culture where adults are reluctant to go outside when it rains, entitled me to question our educational approach in Turkey: Why do we limit ourselves to staying indoors with children and what can be done about it? Thus, I decided to go to one of the Scandinavian countries for experience in outdoor education and break possible habits that prevent teachers from going outdoors.

This article shall depict some of my experiences in early childhood education in Finland during the years 2007-2012. Through these experiences, I shall address the following questions: Is it possible to be out in the forest with children all year round in every kind of weather and what are the benefits? How can the Reggio Emilia approach be integrated with one's own culture and early childhood education system? What did I learn from the Finnish ECE models?

A brief insight into the Finnish system of early childhood education

The Finnish system of early childhood education and care policy is a combination of care, education and instruction, also described as "EduCare", that forms an integrated whole, and where play is a central tool of pedagogical activities. (Ministry of Social Affairs and Health, 2001) There are two primary goals in early childhood education and care in Finland: Fulfilling the day care needs of children under school age and providing early childhood education. The ratio of adults to the number of children in day care centres is one to seven for 3–6-year-olds and one to four for children under the age of three if they

are arranged a full-time day care. If it is part-time day care the ratio for 3–6-year-olds is one to thirteen and for children under three the ratio is the same as in full-time care, namely one to four. (Ministry of Social Affairs and Health, 2002)

What strikes as a fundamental element in this system is the social aspect, which supports inclusion and equality in education. This can be seen in the way the day care fees are determined and the emphasis is given to children with special needs. According to the Ministry of Social Affairs and Health (2004), day care fees are determined by the family size and income level and only 15 percent of the total day care costs are covered by the families. For families on low incomes, day care is free. As of 1996 , all children under school age have had the right to a place in day care provided by the family's local authority. Over 90% of day care services are municipally provided. Yet since August 1997, families have had also the possibility to receive a private childcare allowance if they prefered that their children go to private care.

Moreover, children that need special services, are provided with it from as early a stage as possibe. In early childhood education and care ,they can be integrated with other children on the condition that simultaneously, the child receives the necessary special services and that the staff have sufficient training. Children with special needs for care and education are entitled to a rehabilitation plan, which is made together with the early childhood education services and the child's parents.

Another element which makes the Finnish early childhood education system viable, is its perception of the way in which a child learns. Learning is not centred on outside source of information, but rather the interaction between children, adults and the environment. Nature and the immediate neighbourhood are considered to be the important elements of the environment. There is a distinct emphasis given to children's self-motivated play,which is considered a natural way of learning things related to their social, emotional, cognitive and physical development. (Ministry of Social Affairs and Health, 2002)

Educational models that connect children with nature and the outdoors

Upon researching the concept of connecting children with nature, it can be stated that this concept is not new to early childhood education. While many educators have been inspired by nature and have used it in their educational programmes, today, the excessive use of computers, videos and educational television, which form a barrier between children and nature, is observed. Fortunately, the theory and research behind some educational models support strengthening the relationship between children and nature (Wilson, 2007) A careful inquiry into the history of early childhood education reveals educational models in which nature has been an important element of a learning environment. These models can be seen as inspiration to educators who want to re-connect children to nature.

Froebel,the founder of the kindergarten movement, suggested a "children's garden" as the most appropriate educational setting for young children, and the curriculum he developed was based on the child's intrinsic need to play. This was at that time considered to be a radical idea. (Wellhousen,2002). Wilson (2007) states that:

> *According to Froebel, the outdoor environment and activities should be carefully planned and implemented as those indoors and both should focus on children's interaction with the natural world. Froebel encouraged the planting and watering of the seeds, frequent nature walks where children and their teacher could explore the natural world together, and a variety of loose materials that allow the children to build and experiment. (p.17)*

In 1914, an open-air nursery school was founded by Rachel and Margaret McMillan in Deptford, East London, where the main focus was on the benefits of children's access to the outdoors. (Clark, 2010, p.14) Bilton (2010) describes this nursery's real learning environment to be outside in the garden, which seemed to be relevant to what Froebel was implying with "kindergarten" -a garden for children- as opposed to the word "school". It was a natural environment where children could explore and choose freely what they wanted to do without being interrupted; therefore staff did not spend so much time setting up activities. The garden had different surfaces,grass and hard and possibilites for play and movement incuding blocks, steps, logs, playhouses, wheelbarrows, trucks,bicycyles, trees and shrubs. There were also ponds,barrels,ladders,ropes, real animals like chickens,tortoises,rabbits and fish, which which might not necessarily be seen so often in today's kindergartens. There was an abundance of natural materials such as twigs, leaves,stones and bark. The garden,which was also home to birds through bird boxes and bird baths,was divided into three, a kitchen garden, a wild garden and a rock garden. There was an opportunity for natural sand-water play as well as drama through dressing-up materials. All activities,including eating,sleeping,painting,exploring with scientific tools and singing took place outside. As a result,the fresh air, space and physical exercise made children more healthier. (Bilton,2010,p.72)

In the early 20th century, Rudolph Steiner developed the Waldorf approach in which outdoor play periods were also included in the day, enabling children to experience nature, weather and the seasons of the year (Ullrich,2008). In the book "Child and Nature" (1992), there is an article written by Ulla Margrethe Rahbek, a kindergarten teacher who worked in an open-air day care centre in Copenhagen, where she shared her views on the Steiner pedagogy and its connection with nature as follows (Bøndergaard et al, 1992):

> *"The pedagogy of Rudolf Steiner teaches us how the child learns to know the world through its surroundings by imitating and using them as a model. […] Besides healthy surroundings,the child also needs healthy food for the mind, for its attempts of imitation and the child needs warm and loving human contact. It is my experience that the pedagogy of Steiner in connection with nature also is a way to meet the child and to nourish and strengthen it's inner life as well as its physical body". (p.22)*

In her article she also explained how the rhythms of the child is similiar to the rhythms of the year, in the sense that the child being part of nature, "as a rhythmic creature", follows the course of the year while playing. In nature,the child can experience how the woods change their appearance and the many varieties of weather . "It experiences how the animals follow this rhythm, how the woods swarm and is alive in the summer, and how this life hibernates." (Bøndergaard et al, 1992,pp.30-31).

Maria Montessori, the founder of the Montessori method, stressed the immersion of the child into nature as well and encouraged the use of gardening with young children as it would stimulate their learning and imagination. The Montessori tradition still remains this way, yet for the most part, by the 1950's interest in school gardening was diminished. (Wilson,2007,p.89)

Although the Reggio Emilia approach is not centred on outdoor environments nor natural materials (Knight,2009) an emphasis is made on children and the environment. According to Ceppi and Zini (1998), in the Reggio Emilia approach, the environment is

considered as "a third teacher". Both the indoor and outdoor environments are consequently taken into consideration and carefully constructed. (Wilson,2007) All kinds of different material, including natural materials brought into the school by children and families such as pinecones, shells, or pebbles, are arranged by size,shape,or colour and are displayed. Transparent boxes are home to treasures collected during a special excursion or an exploration in the garden surrounding the school. (Edwards , Gandini, Forman 1998) Therefore, not only are natural materials used for decoration but they are made available for investigation and creativity as well. (Wilson,2007)

Other models that connect children with nature include forest or nature kindergartens. Whatever the weather may be, the children are encouraged to play, explore and learn in a forest, woodland or natural setting throughout the year. The roles of the adults in these kindergartens are crucial to the experiences created. (Forest Commission, 2009) In these kindergartens, children whose ages can range between two and six, are outdoors almost every day. Forests kindergartens are also known as "Waldkindergarten"in German and "I Ur och Skur" (Rain or Shine) kindergartens, in Swedish.

If we look back at the history of the forest or nature kindergartens we can see that the roots of the forest and nature pedagogy lie in Sweden where since 1892, a non-profit organization called "Friluftsfrämjandet" (Outdoor Life) has existed and offers year-round activities in the area of nature education for all ages. (Miklitz,2004,p.14)

In nearby Denmark, these educational influences were not without effect: In the mid-fifties Ella Flatau Sölleröd created forest kindergartens in Denmark. The concept began when she took her own children to the forest and a short time later began taking neighborhood children as well. The idea developed into a parent's initiative that led to the establishment of the first forest kindergarten , "Stovbornehaven" in Danish. In Denmark, institutions of this kind exist as in a pure and an integrated form. In "Pure" forest kindergartens, the children remain in the natural environment throughout the day and integrated forest kindergartens are those that cooperate with regular kindergartens. (Miklitz,2004,p.14)

The history of forest kindergartens in Germany, is explained in detail in Ingrid Miklitz book "Der Waldkindergarten". In Germany, the first forest nursery was founded by Ursula Sube in Wiesbaden in 1968. Since Ursula Sube had no training as an educator, the financing came solely from parental contributions. Sube was unaware know of the existence of the Danish forest kindergartens. It was not until the late eighties that her forest group received an official operating license. The group limit was set at fifteen children, however, no further initiatives developed from their model. The concepts of the natural and forest kindergartens in Germany was later developed following the Danish model. In 1993, the first German state-approved forest kindergarten was established in Flensburg. Forest Kindergartens were therefore first officially recognized as a form of daycare in 1993, enabling state subsidies to reduce the daycare fees of children who attended Forest Kindergartens. (Miklitz,2004, pp.14-15) According to the Federation of Nature and Forest Kindergartens in Germany,there are currently more than 1,000 nature and forest nurseries, 400-500 nature and forest kindergartens and many kindergartens that have forest days during the week. (Bundesverband der Natur- und Waldkindergärten in Deutschland e.V., 2012)

In Sweden, Gösta Frohm (1908 - 1999) a Swedish sports officer became actively involved in the development of outdoor schools. Frohm was concerned with the relationship between Swedes and nature, as he believed that due to urbanization children were be-

coming alienated from their natural environment. He wanted to guide children towards playing in the forests, cliffs and waterfronts instead of in parking spaces and streets. In 1957, Frohm created the idea of "Skogsmulle", where "Skog" means wood in Swedish and "Mulle"originally means earth or soil. Skogsmulle became a fictional character that Frohm created to teach children about nature and in 1957 the first Skogsmulle schools began. The initial steps of starting these Skogsmulle schools were quite rigid in Sweden, until it was thought to connect the Skogsmulle school concept with play parks, the first combination opening in Stockholm. As a result of this idea, Skogsmulle activites became common around the whole country. (Nikkinen, 2011, pp.11-12) In 1985, together with the Frohms model of Skogsmulle activities, outdoor and nature-based kindergartens called "I Ur och Skur" (Rain or Shine schools) were established. (Linde, 2010a)

In Finland in 1979, Skogsmulle (Metsämörri) activities were held in Swedish for the first time in the city of Kauniainen. In 1992, Suomen Latu, a Finnish organisation for the promotion of outdoor activities, made an agreement to work in cooperation with the outdoor recreation organisation Friluftsfrämjandet to develop Skogsmulle (Metsämörri) activities. In 1998, Gunilla Cavonius founded the first I Ur och Skur kindergarten as a Swedish medium school in Kauniainen working under Friluftsfrämjandet. The first Finnish language kindergarten working with the same principles known as Luonnossa Kotonaan (At home in nature pedagogy), was Suomen Latu's first pilot kindergarten and was founded in the southern part Finland in 1999. (Nikkinen, 2011, pp.13-15)

Skogsmulle activities and methods for teaching children in nature have spread to countries other than Sweden and Finland, for instance to Norway, Germany, Latvia, Japan, Russia, Lebanon, England, Wales and Scotland. (Linde, 2010b)

AT HOME IN NATURE PEDAGOGY KINDERGARTEN IN SOUTHERN FINLAND

Features of the kindergarten

In Finland, the first kindergarten I worked in was an "At home in nature pedagogy" kindergarten from 2007-2008. The kindergarten ran along the pedagogical principles of home in nature (I ur och Skur - rain or shine) and Skogsmulle (Metsämörri) activities which both originate in Sweden. This was a private kindergarten situated in an ecological area of southern Finland close to fields and forests. The kindergarten's premises comprised of a single-storey building, a yard that acted as a large natural playground and access to acres of forest, incuding a conservation area.

Weekly rhythme

In this kindergarten,the children were outdoors every day, in every kind of weather, snow, frost, rain, hail or sun. There were forty-two children aged 2–6, seven adults (two of whom were men) working with the children, a cook and the director. The children were divided into three different age groups. Each group would go three times a week to the forest and once a week they could stay in the yard where they could eat around the fireplace, enjoy free play or tend their own garden. Each group could also spend one morning of the week indoors baking, doing arts and crafts or playing music and then during

the day be playing in the yard. The forest was a natural play area for the children, for all sort of encounters, spontaneity in play and interaction with nature as well as Skogsmulle (Metsämörri) activities. These children learned to respect nature and its beings through loving and understanding it. As the name of the pedagogy suggests, the aim was to have children feel at home in nature.

In the afternoons, 2–5 year olds would go indoors to listen to a story and take a nap. The 6–7 year olds, didn't have to go indoors, instead they would remain in the yard which contained a lean-to shelter, built by the parents, where sometimes the children could lie in their sleeping bags and listen to a book being read. On one day of every week the preschool children spent the entire day outdoors.

After spending time in the forest from 9am to 1pm at minus 17 degrees and then having spent another 2 hours in the yard I recall a 6 year old girl M. turning to me and saying "I'm a preschooler now and I can be outside the whole day." She had said this with a broad smile, red healthy cheeks and a proud tone of voice.

Organic meals

The cook prepared organic food in the kitchen every day for the children, which they would then eat in the forest. Alternatively, she would prepare it in the yard in a large pot over a protected fire, where children could watch how it was prepared. Alongside the food being organic, there was an emphasis that it be grown as locally as possible. As in every Finnish kindergarten, the children were provided with three meals, breakfast, lunch and an evening snack. What was different from the other kindergartens was that children were provided breakfast before 8am, as by 8 am they had to be already outdoors in the yard. In addition to this, children could bring their own snacks prepared at home that consisted of light healthy food to be eaten in the forest.

Since I worked with the elder children whose ages ranged from 5 to 7, we also had a chance to cook in the forest once a week, where the children would prepare their food themselves.

An Eco-school kindergarten

One of the most important objectives of this kindergarten was to promote sustainable development through environmental education. This kindergarten ran on eco-school principles, under which the children took part in also recycling and mixing compost in the yard. In addition, the school adopted annual themes regarding the environment. The yearly theme in the year I worked there was water, hence, there had been a focus and awareness on the theme of water in the activities all year around.

There were hardly any toys in the yard ,other than buckets, shovels, large toy trucks to carry things and sledges and the children had opportunities to create games out of natural materials and loose parts. Many of the features for play such as a slide or a small playhouse were built from wood, mainly by the parents. The well-being of the children were taken into consideration, by having material readily accessible that could support their needs. A shed,that had art materials on the shelf also contained tools for woodwork which were at the children's disposal and could be used with adult supervision.

The principle of parent participation

Cooperation and collaboration with the parents was a vital part of the home in nature pedagogy. Parents were involved in the organization of excursions (for instance to Lapland), work parties and celebrations. There were groups which parents could participate in and assist with various needs in the kindergarten. For example,there were a group of parents who were responsible for wood work and they were involved in constructing the lean-to shelter mentioned earlier or there was another group who took care of sewing tasks such as repairing curtains or bedtime toys.

The Principle of "no hurry or haste"

The overall philosophy in the kindergarten was to take time with children and not to rush. This coud be challenging for adults, for example while helping children get dressed for outdoors or when returning from the forest to the kindergarten. To work in an environment where this "no hurry or haste" principle plays an important role, helps the educator to re-think the way he or she works. It is a useful principle and guide to how an early childhood education setting should be and how the educator should interact with the children. This principle could be seen specifically on the way to the forest as children where given time to walk in their own pace and to stop every now in wonder to examine what they stumbled upon. The not-to-rush approach seemed to be taken into consideration by many of the parents. I could see this especially in the evenings when they came to pick up their children. It was often that I would see parents spend time in the yard,watching their child play or talking to the staff about how their child's day had been. For me, it had always felt like a friendly, inviting environment and I admired how some of the parents gave their children the opportunity to concentrate on a game they had started and wait for the right time to intervene when it was time to go. Many kindergartens today, are being perceived by parents as institutions, where children are dropped off and picked up in haste . On the other hand, creating spaces as a meeting place for dialogue and where one is encouraged not to rush, is important for enhancing a sense of belongingness and social cohesion. This aspect made me see how it also enriches and supports the participation of parents.

Skogsmulle (Metsämörri) activities

As explained earlier, skog is the Swedish word for forest and Mulle is the name of the character. In the Finnish equivalent, Metsä means forest and Mörri means troll. In this way, the same fictional character was introduced in Finland as Metsämörri - the Forest Troll. Metsämörri was born in the forest and established friendships with all the animals and children. It is a fairy tale character, with whom children can play and who is able to communicate in the language of animals, and thus through them tell the children about what is happening in the forest. Children learn about nature through games, free play, movement, stories, songs and their senses. It is not just children who learn,but adults as well. Rather than just giving lessons in nature, Metsämörri strives to make children and adults understand the balance of nature and not to change its laws. (Linde, 2010b)

Metsämörri teaches children to protect the environment. Children are better able to internalize instructions when guided by fairy-tale and story characters compared to if these instructions come from an adult who could be perceived as an authority figure. Therefore,

the role of the adult is to guide children towards Metsämörri, to learn. Metsämörri can be an adult dressed up in Troll's clothes, whom children meet during the Metsämörri activities or it can be a Metsämörri hand puppet. Metsämorri may also introduce himself to the children through the Forest stories in order to become friends. Metsämorri is not, however, ever to be used in any way to be frightening to the children. The Metsämörri leader is capable of utilizing his or her professionalism to articulate the Metsämörri school's objectives and activities to fit precisely his or her group of children. (Nikkinen,2011)

In a Metsämörri School, the children are 5–6 year olds and the size of the group is usually from 12–15 children with two Metsämörri leaders,who have undergone training. (Nikkinen,2011) Metsämörri is not introduced to the child until he or she is 5 years old. Metsämörri appears in the forest only to the 5–7 year olds- younger children interact with other characters that are the Troll's friends. In this kindergarten,where there were two other groups for younger children aged 2-3 and also 3-4, the teachers had taken specialization courses for children in these age groups and had introduced the Troll's friends to them, such as the ladybug puppet. In the home in nature kindergartens, all teachers had taken training for the Metsämörri School and were encouraged to take specialization courses.

While I was working with the 5–7 year olds, Metsämörri would come and pay us a visit almost once a week or sometimes leave a messagefor the children. Around December he would go up north to Lapland to meet his

friend, another character called Tunturi Tiina,a character which represents the mountains. If he were in another part of the forest or up north the children would find a letter from him. They would get excited when they found the Metsämörri puppet hiding in the forest or when he would appear at an unexpected moment. The Metsämörri activities in nature were either whispered into the adult's ear by the puppet or they would come in the form of letters. I have witnessed many times how the children cheered out loud having found a letter from Metsämörri at the "post office rock". The rock would be the place where Metsämörri would leave his letters some of which were activities, words of appreciation or a friendly hello. The children would run to an adult with a scroll in their hand and gather around to listen to the message Metsämörri had sent. The children were aware that it was a puppet yet were very eager to listen to what it had to say.

Reflections on personal experiences in the nature kindergarten

The concept of "there is no such thing as bad weather, only the wrong clothes" was a challenge for me when I first started working in the kindergarten in November 2007. I learned through practice and time,that the key to keeping warm was wearing as many layers as possible and wearing the appropriate clothes and shoes for all types of weather. This was also what the children learnt in this kindergarten, learning to take responsibility for what to put on and how to get dressed depending on the weather of the day. I shall quote from my diary which I had kept as a reference to my experiences in the kindergarten. On March 7th2008, I had written:

> At the very beginning I had questions in my head that I wanted to answer: "Do the children not ever get weary of the cold weather, the snow, the hail or storm?", "What do they do outside the whole time, do they not ever get bored?", "Why is it so important that they be outside, is it not risky?", "What do children do when they are provided with only materials from nature, when their only toys are sticks, branches, stones and trees?"

During the course of time all of these questions were answered. Based on my experiences with children aged 5–7, they did not get weary of the different types of weather. Throughout the four seasons ranging from cold winters of minus 20 degrees to pouring showers of rain, from the explosion and exposure of nature in spring after the melting of snow, to the almost blinding sunshine and thirst brought by the summer, I saw that there was a totally new world, a universe that was being explored.

> *"Not only did the children explore the natural environment around them, but they explored themselves and their interaction with nature as well. I as a teacher became a "learner" with them. I learned to observe the forest and learn about its wonders together with the children. I got the opportunity to learn more about how and what children learn outdoors, especially in the forest, their interests, how they interact with each other to deal with problems, the positive impacts of being outdoors on the childs physical, social, emotional and cognitive skills and to see the development of these skills in such an environment.*
>
>   *I also had to re-think and evaluate my reactions when I saw a child climbing onto a slippery rock after a shower of rain or if I saw him or her climbing up a tall tree. Initially I had found myself worrying that the child would get hurt or fall. My worry was in vain, no injury had ever taken place in the forest. By observing my colleagues and seeing the way they approached such situations, I too began to give the children the necessary space and time they needed to explore their skills and develop them. By observing children, I soon saw what the child could already do and what gross motor skill he or she was naturally or instrincally eager to improve. The activites in the kindergarten were not limited only in the forest. During the winter we had the opportunity to go ice-skating and skiing. These chidren could use knives with adult supervision to carve and whittle sticks, which promotes self-esteem, supports concentration and the developments of small motor skills. Risk taking with safety plans I believe, is beneficial."*

In his book "Last child in the woods", Richard Louv pinpoints David Sobel's belief that "the original experience of risk-taking in the natural world is closer to the organic way we have learned for millenia, and that the other experiences do not reach as deeply". (Louv,2008, p.187) Louv (2008) also offers an unconventional thesis addressing parents about risk-taking which can very well be valid for early childhood educators and teachers as well:

To increase your child's safety, encourage more time outdoors, in nature. Natural play strengthens children's self confidence and arouses their senses - their awareness of the world and all that moves in it, seen and unseen. […] Although we have plenty of reasons to worry about our children, a case can be made that we endanger our children by separating them too much from nature, and that the reverse is true - that we make them safer, now and in the future, by exposing them to nature." (p. 186)

At this kindergarten, the children's play did not seem to be limited or bounded with regard to the weather as long as they were dressed accordingly. There was always something a child would find to do, including sitting in silence, having one's own space and observing nature. This feeling is described in the poem "Peace" (Rauha) written by the Finnish author and poet Eino Leino (1878-1926), who was very much inspired by Finnish nature and cultural inheritance.

Rauha	Tranquility
Mitä on nää tuoksut mun ympärilläin?	*What are these fragrances filling the air,*
Mitä on tämä hiljaisuus?	*this sense of perfect calm*
Mitä tietävi rauha mun sydämessäin,	*that comes to quiet my heart again,*
tää suuri ja outo ja uus?	*So strange,so wondrous,so new?*
Minä kuulen, kuink' kukkaset kasvavat	*I can even hear how the flowers grow*
ja metsässä puhuvat puut.	*and what all the trees are saying.*
Minä luulen, nyt kypsyvät unelmat	*I feel that my dreams may revive again,*
ja toivot ja tou'ot muut.	*my joys,my hopes renewed.*
Kaikk' on niin hiljaa mun ympärilläin,	*All is so still surrounding me here*
kaikk' on niin hellää ja hyvää.	*And nothing mars the sweet stillness.*
Kukat suuret mun aukeevat sydämessäin	*Flowers blossom around me so fragrantly here*
ja tuoksuvat rauhaa syvää.	*And peace blossoms deep within me*

Eino Leino
(Sarmanto, Leino, Swan Cutler, 1978)

English setting and translation by
Aina Swan Cutler

I continue to highlight what I had written in my diary: *I was fascinated by their use of imagination. Loose parts such as sticks and branches were used to build huts or houses, to create a make-believe fire place and campsite or to be used as tools like a stethoscope to play pretend games such as doctor.*

A simple puddle where rain had accumulated became a science area to explore how water moves. They would tell me that they were building a dam and also constructing an artificial island right in the middle of the puddle or designing a lake surrounded by a forest and even add a sauna. Other loose parts such as blocks, logs and wood all shapes and sizes were used to make a rocket, a watermill, a restaurant, a motorcycle or a hut. Twigs, grass, snow, or pine leaves used for decoration. A simple rock in the forest turned into a ship for the pirates and bones of a squirrel were their treasure.

All were child initiated play which supported their creativity, their own needs and interests. As teachers, we did not limit their play or restrict them, but rather supported them to play freely which helped them discover themselves and their own surroundings.

To watch the cooperation between the children in all these processes was amazing and inspiring. Even the children who were relatively less social or more introvert in turn got a chance to take the lead or join in a game which they could not resist partcipating in. In my personal experience I observed that the children had a sense of freedom which in turn nurtured self-esteem due to taking responsibility in their actions. Problem solving skills or critical thinking was enhanced through a variety of situations and events which the children encountered in their play. There was an abundance of time for such experiences and an overall feeling of not having to rush as an overall philosophy of the kindergarten. Guided games were also incorporated by the teachers such as traditional or modern Finnish children's group games, which enhanced cultural awareness as well. Some games were created by the children themselves with rules set together with their peers."

Ruth Wilson supports my observations with the table she presents in her book "Nature and Young Children: Encouraging Creative Play and Learning in Natural Environments". The information in the table reflects what I had seen the outdoors had offered to the children and how it supported a variety of skills. Wilson describes the experiences that occur in natural outdoor playspaces to be "rich in opportunities for nurturing growth in all the developmental domains including adaptive, aesthetic, cognitive, communication, sensorimotor, and socioemotional." (Wilson, 2007, p.8) Table 1.1 highlights examples of the elements and experiences in a natural outdoor environment that promotes those skills. (Wilson, 2007)

Table 1. Child development and the natural environment (Wilson, 2007, p.9)

Domain	Description	Examples of related skills	Examples of related elements/ experiences in the outdoor environment
Adaptive	Ability to function successfully in one's environment	Maintaining balance while walking over a variety of surfaces and uneven terrain	Grass,gravel,sand,tree roots,inclines
Aesthetic	Being sensitive to beauty in nature and art	Noticing colours, scents,sounds and textures	Leaves,flowers,bird song,moss,feathers,wind
Cognitive	Mental understandings	Understanding concepts related to size, shape, weight, comparisons, causes and effects.	Trees,rocks,eggshells, water, light
Communication	Ability to share ideas, thoughts,and feelings	Describing,asking,responding,telling	Animals,different properties of water,changes in the weather, shapes of the clouds in the sky, dens
Sensorimotor	Sensory perception and physical movements	Seeing,hearing, tasting,feeling,crawling,running, carrying,digging,splashing	Bending of branches in the wind, sound of water falling over rocks, freshly picked berries, logs,grass,stones,soil,water
Socioemotional	Interactions with others and sense of self	Problem-solving,sharing,pretending,caring,constructing	Sticks,grasses, leaves,dens,gardens and gardening tools, bird baths and bird feeders

The children are healthier from being outdoors by being exposed to more fresh air. When compared to being indoors, they are less likely to encounter bacteria or viruses due to less contact surface area such as common toys, door knobs, light switches etc. or limited indoor space where the infection travels via airborne droplets when someone sneezes or coughs. The same applies to the level of noise between four walls. The effect is far more less when in the forest than what it would be, for example with fifteen children in the same room. There is definitely less stress for children and teachers.

These children eat, play, rest, paint, do artwork and almost everything that can be done in a regular kindergarten but do it outdoors, either in the forest or in the yard. Not only are they are aware of themselves, but also of the nature, the change that takes places together with the seasons

and the effect on all the living things around them. Thus they get a hands-on experience with life itself. I still have yet to learn and I can see that this pedagogy has a lot to offer to the children, parents and teachers as well as the society. As time passes I really do see that the hypothesis of "There is no such thing as bad weather only the wrong clothes" is true… The children like being outside…

One aspect that I felt the kindergarten needed to develop was documentation. The importance of documenting educational activities and understanding the environment as being "the third teacher" showed it's validity during a project which started in spring 2008 and continued for two months. During this period, I recorded the activities and made documentation with photographs and text to make the learning journey visible and to share it with the parents as well as our other colleagues in the different age groups.

In the symposium I presented the project, which was in the form of narative documentation. The project was called "Treasure of Friendship" that was initiated in response to a case of bullying among a group of 5–7 year olds. It was combined with the yearly theme "water" and based on a series of tasks that the children were asked to complete through the letters written by Metsämörri's troll friend and nature friends who had been upset about the situation.

One of the follow up questions after my presentation was why a troll was used in the forest and did not a troll have a negative effect on the children's perception of reality.

My answer to this was that fairy tale characters are important for children and that concepts of trolls, fairies and elves have been part of the Finnish culture for many years. I continued my argument that imaginative play supports the development of a child's character and Metsämörri helps form an emotional bond with nature. I quote from Irja Nikkinen's book called "Metsämörri" where Nikkinen (2011) states:

> *Nature opens an exciting and mysterious adventure for children, in which they feel that they are personally involved. Through this, they learn to deepen their perception of nature and to respect it. The forest provides secret places, mystical sounds and exciting fragrances. All these are in fact what Metsämörri wants to share with the children. Imagination and intuition go hand in hand, the more you imagination is developed, the more children experience a variety of sensory experiences. A fictional character such as Metsämörri allows children to experience the many fascinating and educational discussions in nature. It is a fairy tale character in exactly the same way as the Christmas Elves are to them. (p. 17)*

DISCUSSION

Based on my experiences in various kindergartens in Finland during the years 2007-2012, I will discuss some of the strengths in early childhood education that I have encountered, the needs of improvement and opportunities that I find essential in pinpointing. I will share my views on the use of the language in kindergartens, the age of formal teaching of literacy and numeracy, the amount of participation of the children in kindergartens and how often children are outdoors each day. I shall also suggest some ideas which could be inspiring for kindergartens and early childhood educators. Another point I find crucial to discuss is the quality of staff and my overall experience linked to this which took place here.

Teaching of literacy and numeracy

Coming from Turkey,where there is an emphasis put on reading and writing at an early age, I believe it is crucial to highlight the age at which it is considered appropriate in Finland, hoping it will ignite a re-evaluation of the Turkish ECE system. As in other Nordic countries the formal teaching of literacy and numeracy is not encouraged until the child is seven years old, when he or she starts school. Nonetheless, the centres I visited and some kindergartens I worked in had literacy and numeracy rich environments. The many Finns I met who had been through this system seemed very well educated, many having the ability to read and write in up to three or four different languages. All the libraries in the city have a children's section and families are encouraged to borrow books and read to their children. Children from the kindergartens can make regular visits in small groups to the library to borrow books for their classroom. Teachers are provided with a wide variety of storybooks, resources and children's music CD's to choose from as well.

According to the information provided by Korkeamäki & Dreher (2000)

> Reading and writing instruction is not part of kindergarten activities in Finland. Instead, kindergarten focuses on social skills and free play, with rhymes, songs, and listening to stories as popular activities.The curriculum is typically based on thematic units, which include field trips, listening to books read by the teacher, singing songs, and art work on the theme. Finnish kindergarten teachers are trained to work with children from birth to age 6; the training emphasizes child development and care and does not include literacy instruction. Kindergarten children are not expected to learn to read and write, and there is no pressure on their teachers to have them do so. (pp. 358-359)

In a book about alternative education in Finland, Jarno Paalasmaa makes a comparison of the reading and writing skills in his article:

> Our students start to learn to read and write much later than others and are the best in it. As a contrast, Belgian children that begin school-like studies at the age of three, are the weakest in reading and writing skills."(Lautela 2009, pp.166-169; Paalasmaa, 2011)

In Finland, I was told that reading and writing is not formally taught at an early age because of the belief that in terms of brain development, children's bodies had to learn how to talk, draw and to climb before they were ready to read. Nature or forest kindergartens and the time a child spends outdoors, thus can also be seen as good opportunities for a child to prepare for reading and writing.

I recall a personal experience in the home in nature pedagogy kindergarten that occured in late autumn when we were in the arbotureum of the nearby forest with the pre-school children. Three children had noticed the signs in front of the plants, shrubs and trees and went to fetch paper and colouring pencils that the teachers usually brought along on such trips in a backpack. They then started copying what they saw - the letters - onto their paper. Two of these children could already read and write their own name and one of them was still in the process. I watched their interest in the words as they moved from one point to another to find words and copied them down. They could not read the letters but could draw them. Their enthusiasm was so involving that they noticed the bicycle we had with us and wrote the brand name down. What I had witnessed, had been initiated by the children and no adult had intervened, reveiling the fact that children

have an innate curiosity about reading and writing which can be promoted with such acitivites taking place outdoors.

In addition to these experiences, I have also seen in some municipality kindergartens that teachers can give exercises through photocopied pages to five year olds that includes drawing lines, circling or colouring in pictures. Therefore I can conclude that the way in which they prepare children for literacy readiness from five years old onwards can differ from one kindergarten to another depending on the approach of the teacher.

Language

The content of the language and how it is spoken to children was an interesting point I noticed as my level of Finnish language developed. There was an overall tendency of the use of sentences that began with "Do not", "You are not allowed to.." and "You can not do that..". These sentences seem to be short,clear and aim to get the message directly to the child. This form of language seems to be part of the Finnish culture but perhaps could be reconsidered and reflected upon in terms of the field of early childhood education. A point of improvement could be the use of more positive-oriented sentences. Awareness of alternatives such as "Walk" instead of "Do not run" or suggestions like "I know you want to explore your voice, how about if you shout outdoors" rather than "Stop shouting" could be emphasized . It could be beneficial for the kindergarten staff and perhaps parents to have a review of how the language is used with children and a mutual agreement on how they wish it to be.

Children as active participants

Due to the fact that there is no fixed curriculum to which teachers in Finland are bound, there is a certain flexibility in the kindergartens both for children and teachers. However, I question how much influence children have on their learning environment, not only within the premises of the kindergarten but also in the context of society. I personally, would not wish a kindergarten to be an isolated institute, but rather a community that would incorporate a wider range of people of different ages, for instance grandparents, parents, neighbours, neighbouring schools and increase the collaboration with other or-ganisations within society. As future decision makers, are children given enough oppor-tunities to participate more as a member of the community? Is there a connection with the number of Reggio-inspired kindergartens in Finland being relatively low in comparison to other Scandinavian countries? I believe it is the responsibility of the parents and adults in the kindergarten to create the connection between kindergarten and society. I would like to highlight the views of Jette Bøndergaard from Denmark through her article "How to involve the very young? (Bøndergaard et al):

If kindergarten and school are a living part of the society, the chances of the children's taking part are much greater. The life of children will be more worthwhile,because it is not especially dignified to be hidden away, kept or locked away outside the activity of the community.[…]. It is vital that children should have joy of life, and trust in the joint search for humane and environmentally literate ways of living. Adults can furthermore give the children opportunities to have the kinds of experiences in nature, architecture or culture, which will awaken the joy of absorbtion. We can teach the children to produce goods of nature's own materials for elementary needs. (1992,p.17)

Children are outdoors every day

Children go outdoors at least two hours a day in Finnish public day cares. It is expected that they will be outside in the morning and in the afternoon but it is flexible if it is only either in the morning or only later in the afternoon. Although the two hour minimum is the desired case, I have experienced in public day care centres, that sometimes this does not apply, for instance if there is lack of staff, if teachers are reluctant or certain type of weather is considered "bad". Many kindergartens take the children to the forest on a regular basis every week, yet due to the previously stated reasons, the trips may be cancelled.

Metsämörri (Forest Troll) activities and courses have had a positive impact in enabling adults to take children outdoors especially to nearby forests. The exposure of children to the forest has increased in public day care centres through these trainings. According to the information provided by Suomen Latu, in Finland there are currently more than 10,000 trained Metsämörri leaders, a large number of whom work in day care centres and almost 50,000 children who have been reached through the Metsämörri activities (2012). Anybody who is keen on becoming a leader, either those who work with children or even parents, can take the 15 hour training. When considering the means by which to increase access to the outdoors, other than Metsämörri, further training for teachers on outdoor education and enrichening school grounds may be a motivation to teachers and give them the support they need.

Ideas of inspiration

The Hut kindergarten in the forest

In the case where there is lack of indoor space, taking children outdoors in groups or in turns to the forest is a long term beneficial solution. An innovative example is a municipality kindergarten I visited in Southern Finland,which integrated the forest kindergarten concept and created a "hut kindergarten" model. This hut kindergarten model, which was first of its kind in Finland, was founded in 2005.

Due to the lack of indoor space for twenty four pre-school children that had been enrolled in this municipality kindergarten, a solution was found by dividing the group into two. One of the groups became an outdoor group of fourteen children, who went to the forest every morning. The staff took an innovative step of having a hut built in the forest. What was special about this kindergarten, was that it was the municipality that built the wooden hut in the forest just for this purpose. Thus, preschool education took place in the forest rather than indoors, with a hut for shelter and a dry toilet outside, nearby the hut. The preschool children were out every day, ate their lunch in the forest and returned in the afternoon to their "base" which was the municipality kindergarten. This kindergarten in particular, pursued the Metsämörri activities and also used the Case-Forest pedagogy. Currently,there are six municipality kindergartens, which have huts in the forest.

Case Forest pedagogy

 Case forest pedagogy,which is a children initiated learning tool, can be offered as a guide to teachers who are becoming familiar with the Reggio Emilia approach. As some teachers or educators may find the spiral path in the Reggio Emilia approach to be overwhelming, Case Forest can be an initial step to inquiry-based learning.

Parikka-Nihti explains that the basic idea behind the Case Forest pedagogy is that learning takes place outside the classroom. Skills and information are brought to the kindergarten and excursions are made to different educational sites such as museums and libraries. The learning environment should be the child's surrounding neighbourhood and community. It is a child-initiated learning approach,which includes problem-based and project based learning. The Case Forest pedagogy has been developed in Finland by professor Jorma Enkenberg, who worked in cooperation with the University of Joensuu's (Faculty of Education) METKA- Research and Development Groups and the Finnish Forest Association. (Parikka-Nihti, 2011)

Case Forest pedagogy is based on the perspective of developing an inquiry-based learning process. The driving question has a very important role. A good driving question encourages designing and performing inquiries, is semantically rich and relates to expert communities. Working with Case Forest activity is divided into four main phases, which partly take place at the kindergarten/school and partly in the chosen natural and cultural environment. The learning project emphasizes collaborative activities. The learners work in small groups (3-6 persons) and the aim is that the team members have different kinds of expertise and skills. The role of teacher is to facilitate and guide the learning process; the teacher does not need to know everything, but must be an active member of the learning community to seek and evaluate knowledge. The idea is also to collaborate with external experts during the learning project. (Skogsstyrelsen,2012)

With young children, the main focus is to contemplate where to find the information and how to look for it. It is important that the question arises from the child. During the process,it gives the educator the freedom to listen to the child and challenges him or her to use pedagogical documentation in thier work. Often children want real information especially about nature for example: Why do certain things happen in nature, what is the reason for a particular phenomenon or where does it come from? Children are also interested in mythology of nature, different fairy-tales and stories about nature. (Parikka-Nihti,2011)

Currently an increasing number of workshops and training in the Case Forest pedagogy is being provided to educators in Finland.

Permaculture in early childhood education

Another field that can be of inspiration to early childhood educators is that of permaculture. I believe that the principles of permaculture could be integrated into early childhood education. The first book written in Finnish about Permaculture is called "Aikidoa luonnon kanssa" (Aikido with nature) (Lombardini-Riipinen & Riipinen, 1998). However, I have come to find that it has not yet been used in Finland to design kindergartens or to have children included in it.

The concept of permaculture was established in the mid 1970's by Bill Mollison and David Holmgren, in Tasmania,Australia. The word permaculture is a combination of the two words permanent and agriculture or culture and can be defined as "the conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability and resilience of natural ecosystems. It is the harmonious integration of landscape and people providing their food, energy, shelter and other material and non-material needs in a sustainable way" (Mollison, 1988:ix).

It is important to state that permaculture is an ethical design science and is rooted in three ethical principles namely earth care, people care and fair share. Mollison (1990) defines the ethical basis of permaculture as

1. Care of the Earth: Allowing provisions and resources for all life systems to continue and multiply.
2. Care of People: Allowing provisions for people to access those resources necessary to their existence.
3. Setting limits to population and consumption: By governing our own needs, we can set resources aside to further the above principles. (p.2)

Permaculture can be of inspiration to early childhood settings in many ways. Permaculture's fundamental principle is to design with nature and Mollison and Slay (1994) state that, "In designing with nature, rather than against it, we can create landscapes that operate like healthy natural systems, where energy is conserved, wastes are recycled and resources are abundant." (p. 72)

In Austalia, beginning in the 1980's, schools have developed their gardens with permaculture, where children grow their own food using organic and earth friendly techniques. The effect of the permaculture designers has been so significant that permaculture is a prefered design for school gardens today. (Nuttall & Millington, 2008) I strongly believe that Finland would benefit from kindergarten models that have edible gardens or provide farming opportunities within it's premises.

According to the authors of "Outdoor classrooms", Nuttall and Millington (2008), "The call is for a new vision for school grounds- a new perception of how the grounds will look, what they will contain and how they will fit into the learning agenda." (p.9) It is essential to take into consideration a holistic approach when designing learning settings. As Nuttall and Millington (2008) states, "A garden is one setting among many that could be set up for children to be engaged in the experiential learning process. The key to success lies in the empowerement of the child rather than the setting. (p.22)

Permaculture is therefore more than just gardening. Although permaculture began initially to design landscapes, it included humans as well. (Hemenway, 2009). Toby Hemenway (2009) states that

> "Permaculture has been used to design buildings, energy and wastewater systems, villages, and even less tangible structures such as school curricula, businesses, community groups, and decision-making processes." (p.5)

If we are looking to create sustainable environments for children, we have to reconsider how the buildings for children are designed, re-think our perception of ethics and how we can connect engineers, architects,teachers, parents and policy makers in the design process. The relationship that permaculture creates is a valuable one especially for children, nature and the society in the long run.

Staff as an element of the learning environment

The quality of an environment is a result of many factors. What influences it, is the shape of its spaces, how the organization functions and how we perceive the environment with factors such as light,colour, sound, microclimatic conditions and tactile effects. The envi-

ronment for young children is not so much about being simply rich in stimuli but it should take into account their desires and abilities to construct places, and offer elements and instruments to satisfy their desires and help their abilities to grow. (Ceppi & Zini,1998) According to Ceppi and Zini (1998),

> One of the keywords which is used to define the characteristics for the environment of children in the municipal infant-toddler centres and schools for young children of Reggio Emilia, is overall softness. This context means an ecosysytem that is diversified, stimulating,and welcoming,where each inhabitant is part of a group but also has spaces for privacy and a pause from the general rhythms. There is respect for others,listening: a "strategy of attention". It is a serene, amiable and livable place. (p.11)

Staff are also a part of this ecosystem and the context of overall softness becomes a natural outcome if the staff members are able to provide or create that environment amongst each other as well. Therefore, the "strategy of attention" can also be taken into account when considering the relationship between the members of the staff. If they are able to build a strong dialogue between each other, it is seen and felt by the children as well which thus transforms itself into being a part of the overall learning environment.

At this point,I would like to emphasize the importance of the staff in a children's learning environment, whether the child is indoors or preferably outdoors. It is the quality of the staff that determines also the quality of the education and care provided. In my search of trying to find the best educational approach, I have come to the conclusion that it is the quality of the staff that is important, regardless of what the educational pedagogy or alternative approach taking place may be. The general wellbeing of the staff affects the dynamic of the environment in which the child grows and develops in. Where there are good commuication skills within the staff, a common goal for cooperation and teamwork and willingness to share the skills that each member of staff posesses, the staff thereby become the most important resource in early childhood education. How they perceive the child, their cooperation with parents and other co-partners from outside the day care centre, the variety of skills that each member posseses, the opportunities and learning environments they provide to the children affects the quality. The following properties are my experience in what affects the educator in his or her working environment in a positive way: a feeling of belongingness, humour, eagerness to learn and developing oneself, being provided life-long learning opportunities, a flow of communication within the members of the staff and a supportive director. The dialogue that the adults have between them and their approach to each other determines how the dynamic of the whole group, children and adults together, will be. Children learn from the adults around them and the overall atmosphere,the combination of the learning environment as well as the dialogue between the adults has an effect. Staff that show mutual respect to each other by listening, showing empathy,sensing,accepting differences and working cooperatively, also play an important role also in the relationship the children have amongst one another. An example would be while in the forest, a teacher that expresses awe,wonder and curiosity at the child's findings may also inspire the other teacher. It is the openness, awareness and perhaps alertness of the other teacher to see the effects that this reaction has on the child. Teachers thereby learn from each other or support one another in a common goal to support the child's continuous development. I would like to give an example from my

personal experience of an outcome of a good relationship built between teachers in the course of time. A teacher who comes to work and gives a hug to their colleague infront of the children, affects the microclimate of the group. This simple, sincere gesture I believe is essential in reflecting a profound, safe environment where both the adult and the child wants to be. If a hug would seem too intimate in a particular culture, another suggestion would be other forms of contact such as shaking hands, a a pat on the back or a gentle hand on the shoulder, all which bring out the health benefits of touch and the positive effect it has on relationships between people.

CONCLUSION

This article has explained some of my experiences between 2007-2012 in early childhood education in Finland with the central importance of children being in the forest and outdoors. Returning to the questions posed at the beginning of this article, it is now possible to state that regardless of the weather children can be out in the forest all year round in every kind of weather and it has many benefits for the holistic child. I experienced that not only is it about wearing the proper clothes but it is also the mindset and the willingness of the teachers to be outdoors that make it possible for the children to access nature. It was also shown that exposure of children to the forest in public day care centres increased by the training of the adults through courses such as Metsämörri (Forest troll). Regarding the question of how the Reggio Emilia approach can be integrated into one's own culture and early childhood education system, Case Forest pedagogy can be offered as an initial guide for teachers who are becoming familiar with the Reggio Emilia approach, as it encourages teachers to actively listen to children and make documentation.

This study has found that generally the Finnish early childhood education system has significant strengths,one being the emphasis of the child's free play indoors and outdoors. The age of formal teaching of literacy and numeracy being seven, provides the child the opportunity to play even more, which can be an inspiration for countries which start formal teaching at an earlier age. Innovations like the hut kindergarten, where pre-school activities take place in the forest, can be a possible solution to kindergartens which have large groups of children and little indoor space. The second major finding was that there were areas which required improvement such as the use of the language in kindergartens and the amount of participation of the children in kindergartens. The need for more sustainable environments for children also creates opportunities for development, such as bringing permaculture into kindergartens,which has not been initiated yet in Finland. The third major finding was the importance of the quality of staff. Regardless of what the educational pedagogy or alternative approach taking place may be, the quality of education for children is limited by the quality of the staff. In general, it seems that although there are strengths in the Finnish early childhood education system, there are also needs for improvement and opportunities that arise from them.

The limitations of the study are that the reflections of my personal experiences depicted here did not include a third party, namely my former and current colleagues, educators or policy makers, while being written. As it has been my personal perception of the

education system here in southern Finland, the conclusions derived from the experiences can therefore be open for debate.

It is recommended that further research be undertaken in the following areas: language used with children in Finnish kindergartens, the quality of staff and the elements that would motivate teachers to take the children to the forest. A future study investigating permaculture in the field of early childhood education would also be very interesting.

Taken together,my experiences and findings support strong recommendations that children and pedagogues should access the forests and nature as much as possible.

REFERENCES

Bilton, H. (2010). *Outdoor learning in the early years: management and innovation*. (3rd ed.). London: Routledge.

Bøndergaard, J., Rasmussen, N., Flemming, M., OMEP. Danish National Committee, & OMEP. Australian National Committee. (1992). *Child and nature: a book which documents everyday practical work and programmes concerning the subject child and nature for preschool children*. Copenhagen: OMEP.

Bundesverband der Natur- und Waldkindergärten in Deutschland e.V., (2012) *Von Skandinavien nach Deutschland | Bundesverband der Natur- und Waldkindergärten in Deutschland e.V. (n.d.)*. Retrieved September 10, 2012, from http://bvnw.de/?p=769

Ceppi, G. & Zini, M. (1998) *Children, spaces, relations. Metaproject for an environment for young children*. Milan Italy: Reggio Children.

Clark, A. (2010). *Transforming children's spaces : children's and adults' participation in designing learning environments*. London ; New York: Routledge.

Edwards, C., Gandini, L. and Forman, G., Eds. (1998) *The Hundred Languages of Children: The Reggio Emilia Approach-Advanced Reflections* (Second Edition). Greenwich, CT: Ablex Publishing Corp.

Forest Commision (2009) *ForestKindergartenReportApril09.pdf. (n.d.)*. Retrieved September 2, 2012, from http://www.forestry.gov.uk/pdf/ForestKindergartenReportApril09.pdf/$file/ForestKindergartenReportApril09.pdf

Hemenway, T. (2009) Gaia's Garden Second Edition: A Guide to Home-Scale Permaculture. White River Junction, VT: Chelsea Green Publishing.

Knight, S. (2009). *Forest schools and outdoor learning in the early years*. Los Angeles [etc.]: SAGE.

Korkeamäki, R.-L., & Dreher, M. J. (2000). Finnish Kindergartners' Literacy Development in Contextualized Literacy Episodes: A Focus on Spelling. *Journey of Literacy Research*, *32*(3), 349–393. doi:10.1080/10862960009548085

Lautela, R. (2009) *Kysymys vuodesta-kysymys lapsesta. Teoksessa T. Jantunen & R. Lautela (toim.) Kuningasvuosi. Leikin kulta-aika.* Helsinki:Tammi.

Linde, S. (2010a). The Start of "In Rain or Shine". Retrieved August 22, 2012, from http://www.friluftsframjandet.se/c/document_library/get_file?groupId=3187811&folderId=3338348&name=DLFE-33903.pdf

Linde, S. (2010b) The Skogsmulle Concept. Retrieved August 22, 2012, from http://www.friluftsframjandet.se/c/document_library/get_file?groupId=3187811&folderId=3338348&name=DLFE-33902.pdf

Lombardini-Riipinen, C. & Riipinen, O. (1998) *Aikidoa luonnon kanssa: Johdatus permakulttuuriin*. Pinko 1. Helsinki: Vihreä sivistys- ja opintokeskus.

Louv, R. (2008). *Last child in the woods: Saving our children from nature-deficit disorder.* Algonquin Press, Chapel Hill, NC.

Miklitz, I.(2007). *Der Waldkindergarten, Dimensionen eines pädagogischen Ansatzes.* 3.Auflage. Berlin-Düsseldorf- Mannheim: Cornelsen Verlag Scriptor GmbH & Co. KG.

Ministry of Social Affairs and Health, 2001. Early Childhood Education and Policy in Finland. Retrieved September 12, 2012, from http://pre20031103.stm.fi/english/pao/publicat/childcare/conclusi.htm

Ministry of Social Affairs and Health, 2002. Early Childhood Education and care in Finland. Retrieved September 12, 2012, from http://pre20031103.stm.fi/english/pao/publicat/early-childhood/brochure02_3.htm

Ministry of Social Affairs and Health, 2004. Brochures of the Ministry of Social Affairs and Health 2004:14. Early Childhood Education and Policy in Finland. Retrieved September 12, 2012, from http://www.stm.fi/c/document_library/get_file?folderId=28707&name=DLFE-4196.pdf&title=Early_Childhood_Education_and_Care_in_Finland_en.pdf

Mollison, B., & Slay, Rita Mia (1994). *Introduction to Permaculture*, New Edition. Tyalgum, NSW: TagariPublications.

Mollison, B. (1988). *Permaculture: A Designer's Manual*. Tasmania: Tagari Press.

Nikkinen, I. (2001). *Metsämörri ohjaajan käsikirja*. Helsinki: Rakennusalan kustantajat : Kustantajat Sarmala : Suomen latu.

Nuttall, C., Millington, J. L., Cotter, M.-A., Schiefelbein, K., & Cook, R. (2008). *Outdoor classrooms : a handbook for school gardens / Carolyn Nuttall and Janet Millington ; illustrations by Mary-Anne Cotter and Kay Schiefelbein*. Palmwoods, Qld. : PI Productions Photography.

Paalasmaa, J. (2011) *Lapsesta Käsin. Kasvatuksen ja opetuksen vaihtoehtoja. Opetus 2000.* Jyväskylä: PS-kustannus.

Parikka-Nihti, M. (2011). Pieniä puroja.Kasvua kohti kestävää kehitystä. Helsinki: Lasten keskus.

Sarmanto, H., (säv.) Leino, E.,(san.), Swan Cutler, Aina, (san.) (1978*) Moment musical : Heikki Sarmannon lauluja Eino Leinon runoihin = new Finnish songs by Heikki Sarmanto to the poetry of the great Eino Leino.* Helsinki: Fazer.

Skogsstyrelsen. (2012), Case Forest Pedagogy, Retrieved August 29, 2012, http://www.skogsstyrels-en.se/Projektwebbar/caseforest/Case-Forest-Pedagogy/

Ullrich, H. (2008). *Rudolf Steiner*. London: Continuum International Pub. Group.

UNICEF Turkey, 2012 | Children in the Population, the Family and the Health and Education Systems | Early Childhood Development, School Readiness and Pre-primary Education. Retrieved September 12, 2012, from http://www.unicef.org.tr/en/content/detail/55/early-childhood-development-school-readiness-and-pre-primary-education-2.html

Wellhousen, K. (2002) *Outdoor play, Every Day: Innovative Play Concepts for Early Childhood.* Albany, NY: Delmar.

Wilson, R. (2007). *Nature and Young Children: Encouraging Creative Play and Learning in Natural Environments* (1st ed.). Routledge.

Uncovering the whys: What motivates teachers to conduct project work in primary school?

Elga Drelinga and Elfrīda Krastiņa

Daugavpils University, Latvia

ABSTRACT

Teachers unite past, present and future: they have gained past experience in teaching and learning, they teach pupils and learn with them today and the results of their work will come to light in future when former pupils become adults who are either aware or unaware of the importance of balance among ecology, economy, social and cultural processes. Project work can heighten this awareness. This paper summarises the results of a survey conducted among teachers with a view to ascertaining what encourages them to use project work in the educational process. Survey results suggest that teachers are motivated to use project work by opportunities to organise such educational process where pupils can gain enduring knowledge and skills and become responsible and creative individuals. Project work tends to be introduced more successfully if teachers receive support from the school and if opportunities are provided to develop their knowledge and skills in this area.

Key words: sustainable development, project work, motivation, educational process, primary school

INTRODUCTION

Globalisation affects the use of the political and economic potential of this country. Latvia is a comparatively small country with limited economic and natural resources; therefore its development is most directly related to the ability of following and quickly adjusting to the changes in the global space of the world, using our advantages in the most efficient way. The efficiency of change may be facilitated by the change of education paradigm envisaging closer relatedness of the system of education to the economic and public processes, thus changing also the style of teacher's work. Teacher's task is not only to teach a subject but be a talented many-sided personality who provides help, inspiration, relates various spheres, cooperates, gives advice and organises. Education in pre-school and primary school must be focused on the development of children's communication skills, individuality, and inquisitiveness (Ķīlis, 2010). The present day learners will live in the world that will be much more dynamic and complicated than it is now. They will need critical and creative thinking, ability to keep rational mind in uncertain situations and find manifold solutions when creating and using information. They will have to be witty and self-assured, yet also skilled partners of cooperation. They will need to know many languages, be apt in mathematics, natural sciences and technologies. They will need to be ready for various forms of communication – convincing, presentation and self-expression. The learners of today will be the future adults who either discern the contribution of balancing the spheres of ecology, economy, social and culture sphere or do not. In the formation of this generation, the achievement of telecommunications and digital technologies are of great significance, yet the process of learning that takes place in class and school is much more important. The process of learning must appreciate experience, the present day situation, and the vision of the future (Salite, Gedzune, & Gedzune, & 2009). This kind of learning cannot be secured without incessant and systematic professional development of teachers that facilitates innovation (Davidova & Kokina, 2009). Project work is one of the forms of work that helps learners form deep and stable knowledge and skills. Many authors (Blumenfeld, Soloway, Marx, Krajcik, Guzdial, & Palincsar, 1991; David, 2008) describe the opportunities of using project work in primary school. Observation at schools shows that this form of work is rarely applied. However, it must be acknowledged that teacher's motivation determines what forms or methods of work will be used in the process of learning (Abrami, Poulsen, & Chambers, 2004; Kaldi, Filippatou, & Govaris, 2011).

THEORETICAL FRAMEWORK

Project work is a common cognitive, creative or game action of an independent learner or a group of learners (Krajcik, Blumenfeld, Marx, Bass, Fredricks, & Soloway, 1998) who share common goals and balance their activities in order to reach a united outcome. Project work means deeper investigation of issues, topics, or problems by learners (David, 2008), which gives learners an opportunity to choose topical themes, thereby letting them feel responsible for the topic or learning on the whole. Using their prior life and academic experience and knowledge in project work, learners form new knowledge and experience (Gordon, 2009) that gives an opportunity to creatively solve diverse problems and tasks.

This strategy facilitates the development of independent thinkers (Gordon, 2009). Project work is not a complementary activity (David, 2008). Its duration may be one academic class, one day or even the whole term (Simkins, 2002; Grey, 2004). Project work includes reading, writing, mathematics and other academic skills. Its topic in primary school may be initiated by the teacher but the planning and execution are carried out by learners individually or in groups. Project work constructs knowledge in cooperation (David, 2008). Project incites learners' interest, provokes serious thinking, motivates for learning (Blumenfeld et al., 1991) and applying knowledge in problem solving.

The authors share the opinion of those who consider that project work is one of the most appropriate forms of learning for primary school learners. It gives an opportunity to gain in cooperation meaningful answers to questions that are significant to the learners. Using the existing content of learning and learning experience, it makes possible the construction of new knowledge and learning strategies that will in future encourage the learners' taking responsibility for their learning, work and decisions, and facilitate sustainability in all its manifestations.

Teacher's motivation

On the grounds of the theory of self-determination, we regard the basic needs that are necessary for a person's growth, integrity and well-being to be the following: autonomy, competence and belonging (Deci & Ryan, 2000). The impact of basic needs on teachers' motivation to use project work in the process of learning has been studied (Lam, Cheng, & Choy, 2009). Alongside the above-mentioned basic needs, the impact of the support of the educational institution on the choice of project work in the process of learning has also been explored.

The present study regards five groups of needs in order to answer the research question: what encourages teachers to choose project work in the process of learning? The authors consider that teachers' choice is affected not only by autonomy, competence, belonging and school support, but also by learners.

Teachers need to be autonomous, which implies ability to take independent decisions and regulate their conduct (Deci & Ryan, 2000). If teachers' thoughts about the process of learning are seldom listened to, their work is organised according to strict instructions and in the course of time their activity turns into passivity (Iliško, Ignatjeva, & Mičule, 2009). Teachers may experience a decreasing wish to work if too much control is exerted upon them (Davidova & Kokina, 2008). To lower teachers' stress, various means of administration are suggested (Deci & Ryan, 2000). Experienced teachers have their own system of work in class (Drelinga & Krastiņa, 2011). Therefore it is important that teachers be trusted and not controlled in the process of change if they prove an ability to teach their colleagues something new.

One of basic human needs is a **need to belong to a group.** A teacher works and organises the process of learning in the staff of other teachers. For learning to be successful, cooperation among teachers who work in the same class is needed. This necessity becomes paramount if a new method or form of work is introduced (Davidova & Kokina, 2008). Project work takes place by means of teacher cooperation. Inner motivation is formed by the sense of security and belonging. Belonging to a group of persons who share the same views brings down psychological stress. The collective responsibility is related

to introducing project work. Teachers need their colleagues' support in their everyday work as well as evidence that their work and accumulated experience are significant to others (Drelinga & Krastiņa, 2011). Citing Reilly and Logue (2009), Gordon (2011) noted that teachers most willingly learn from other teachers. Individual skill of solving pedagogical problems is supplemented by the experience of the group members which exceeds individual competence and leads to finding a solution.

It is significant for a teacher to be competent. Competence in this case refers to the skill of organising primary school learners' project work. Competence makes teachers feel secure and self-assured and perform the activities required to reach the best outcomes (Deci & Ryan, 2000). Competence makes it possible to attain good results and appreciation. A teacher must learn incessantly, build up knowledge and skills in order to introduce new methods and forms of work (Davidova & Kokina, 2008). Teachers learn both in cooperation – in teacher professional improvement courses – and individually by using methodological literature and the Internet. Teachers in Latvia report insufficiency of methodological literature on teacher and learners' research work (Drelinga & Krastiņa, 2011).

Need for support from school (administration) is distinguished from others. Planning is needed in the methodological work, thus balancing the demands set for teachers (Davidova & Kokina, 2008; Lam et al., 2009) and diminishing their overload. Support for carrying out the particular activity or implementing a method is important (Lam et al., 2009). Sufficient material base is of importance, too (Davidova & Kokina, 2008). Having the support of school administration, teachers develop their experience of teaching and supplement it with new methods and means while considering the place and usefulness of the innovation in the process of learning (Drelinga & Krastiņa, 2011).

Teachers choose their profession for various reasons. Many admit having chosen to be teachers because they like working with children, helping them reach success in their future, and gain acknowledgement from learners (Davidova & Kokina, 2008). Introduction of new forms of work is determined by the **need to work with children –** giving them an opportunity to use their own experience, work at their own tempo without urging or slowing them down and thereby facilitating acquisition of stable knowledge. The process of learning must be balanced. Children of the present day are more successful in learning if the process of learning is interesting and various methods and means of learning are used (Drelinga & Krastiņa, 2011).

RESEARCH METHOD

The research is based on a survey of primary school teachers (N=193). The mean age of the respondents is 35 years whereas their teaching experience in primary school is 11 years.

At stage 1, teachers considered each of 15 statements in the survey on a five-point scale to show how strongly they affect the introduction of research method (2 – affects strongly, 1 – affects, 0 – do not know, -1 – affects inconsiderably, -2 – does not affect). The statements were presented in a mixed order:

Need for competence: presence of knowledge and skills necessary for the implementation of project work, availability of methodological literature on organising project work, opportunity to acquire the knowledge and skills necessary for the implementation of project work in professional requalification courses.

Need for school support: project work is scheduled in the institution, implementation of project work is supported, there is sufficient material base for implementation of the research method.

Need for belonging: there is a group of people holding similar views, colleagues provide support in work, collective discussion of the course of implementing project work.

Need for autonomy: the institution trusts me as a teacher, I am not controlled in the course of changes in the institution, I will be able to teach my colleagues something new.

Need to create more accessible learning for children: children will be able to learn at their own tempo, they will not be urged, children will be able to use their own experience, the knowledge children acquire will be more stable.

At stage 2, teachers ranked all 15 suggested statements. They marked in decreasing order three most significant statements that are the strongest urges to choose project work.

At stage 3, the question is paraphrased to endow it with a personal attitude: Why do I choose project work? Teachers freely described their rationale for project work.

Data from all stages were processed with Microsoft Excel software. Likert-scale questions (stage 1) were analysed in the five above-mentioned groups of needs: first, all the scores for each question were summed; then the obtained figures for questions related to the same group of needs were added together. Data from ranking (stage 2) were analysed in the following way: statements ranked first were awarded three points, those ranked second – two points and those ranked third – 1 point; points for each statement were summed. Data from the open question (stage 3) were analysed with the inductive approach to qualitative content analysis – repeated readings to establish recurring patterns and identify categories and themes.

RESULTS

Survey results are presented (in %) in the figure below.
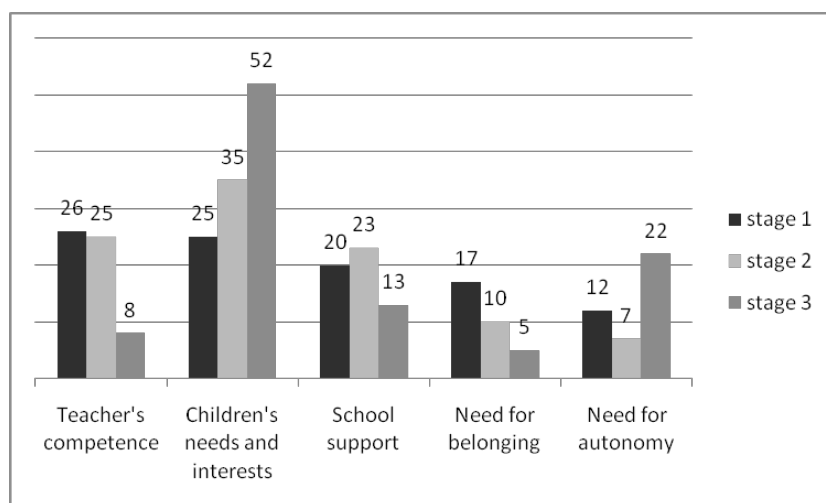
Figure 1. Summary of survey results (%)

Teacher's competence

At stages 1 and 2, while evaluating the statements about the implementation of research method, teachers point out that teacher's competence is of great significance. 26% of respondents at stage 1 and 25% at stage 2 claim that an opportunity to acquire the knowledge and skills necessary for the implementation of project work in professional requalification courses facilitates integration of project work in everyday work routine. They appreciate the opportunity to constantly supplement knowledge and skills by means of methodological literature. Teachers are sure that it is not quite important whether their experience is sufficient. They do not view as disturbing their lack of competence in the implementation of project work. This implies that teachers have realised that there is always an opportunity to learn something new and that they need to constantly build up on their knowledge and skills.

In their free replies, teachers admit that they have access to the necessary methodological literature and methodological materials to supplement the necessary knowledge and skills. Many teachers write that they have the necessary knowledge and skills that may be used in class when organising project work. They also admit that theoretical knowledge is valuable only when they have tried everything in practice and learned for themselves. Teachers would like to gain pedagogical and methodological knowledge on how to offer knowledge in the easiest-to-perceive way. However, only 8% of respondents acknowledge the significance of competence in the implementation of project work. This means that teachers are not ready to critically evaluate their competence. It may be considered as a positive trend that teachers admit the necessity to further develop their knowledge and skills and believe that lack of knowledge and skills in a certain sphere may be improved by learning.

Children's needs and interests

Teachers consider respecting children's interests and needs to be the most significant motivator at all stages of the survey (stage 1 – 25%, stage 2 – 35%, stage 3 – 52%). Teachers think it is important that learners can use their experience in their work so that knowledge is more stable. Slightly fewer teachers believe it is important that learners be allowed to learn at their own tempo and not be urged. Teachers' replies to the question why they choose project work in their everyday work routine are of interest. The majority of these replies show that the **result** matters – *stable, good, efficient knowledge that would help understand the material, children would learn new knowledge and skills for a long time, acquire the content of learning, they would be more successful, would have good education and upbringing.* Many replies bring out the idea that project work in everyday routine may improve the **process of learning**, make it more interesting and understandable for children – *the old methods are not so efficient, learners are used to them, show no interest, in the age of technologies children do not like the old methods,* learners *lack motivation, they need to be interested... in the material of learning, so that children come to school with joy, participate in classes with interest and inquisitiveness.* Project work *provides different experience,* forms a *more interesting environment,* helps learn *faster and at a higher quality... easier and with more understanding.* Learners like to *see, hear and do something new,* they like *experiments, do project works, do practical work, build up their knowledge with excitement, share with their classmates, discuss.* Learners become *accustomed to assume responsibility, reach the goal they have set, consult teachers. Creativity is*

stimulated, creative thinking by working with enthusiasm, creativity and joy. Teachers ascertain that they are motivated to choose project work because **children are different**: in project work they *get more familiar with learners, their abilities, children of different age* work together, there is *individual approach* to everyone, organise *exciting work in a creative class, select the most efficient means,* find *the most efficient approach for them to cooperate in the best and easiest way. Project work opens opportunities to diversify the individual approach: an opportunity emerges to let learners work at their own tempo without being urged.* There is an opportunity to use their own experience and prior knowledge, each learner has an opportunity to participate in different classes. *Project work is implemented for learners to feel loved, clever, able to learn, to provide support* for learners. Though the majority of teachers consider deep and stable acquisition of the content of learning as the main motivation for choosing project work as a form of learning, their replies express care for learners, a wish to help in the process of learning wherein individual work of each learner takes a significant place for reaching good results. Teachers pay attention in their work to learners' interests and needs as well as the necessity to acquire the content of learning, which is why they use different forms of learning including project work.

School support

At stages 1 and 2 of the survey, while evaluating the statements about the implementation of the research method, teachers note that institutional support is significant when introducing project work; it is marked as significant at stage 1 by 20% and at stage 2 by 23% of respondents. Teachers mainly wish to see a sufficient material base for implementing project work. Specific support for implementing project work is significant, while the need of a plan to regulate the implementation of project work at school is mentioned much more seldom. The significance of institutional support holds fast. Teachers admit that changes in society, in the sphere of education facilitate the implementation of project work. Replying to the question why they implement project work in the process of learning, it appears that 13% of teachers wish to receive material and other kinds of support. It is significant that administration supports each new change, provides the necessary help and supports my wishes if I like to try something new. The principal always listens to new ideas, is open and competent. Institutional support is important. Some of the surveyed teachers state that a raise of salary would be a reason to organise project work in their everyday routine. Social and economic factors appear that impede the implementation of project work in the process of learning. One cannot but notice that the economic crisis affects the forms of teachers' work, because insufficient provision of the material base is an impediment for the implementation of project work in the everyday routine. It must be noted, however, that a part of teachers do not recognise it as an impediment since their choice is guided by other factors.

Need for belonging

At the first stage of the survey, when evaluating the significance of all statements in motivating teachers to use project work in the process of learning, 17% of respondents point out that belonging to the school staff is important. Also at the second stage of the questionnaire, while ranking in decreasing order three most significant statements that most strongly stimulate choosing project work in learning, 10% of respondents admit

its importance. Equal number of respondents ascertains that they are motivated by a group of colleagues with similar views, colleagues' support and opportunity to discuss the course of the implementation of project work among colleagues. Also, belonging to the teaching staff got low evaluation at the third stage wherein respondents could freely express reasons why they chose project work; only 5% of respondents considered it important. Replying to the question why they implement project work in their everyday practice, they state that they need *colleagues' support and response*, and a certainty that *my work will be assessed by pedagogues. There is also a need for methodological days and visits to other educational institutions when teachers share experience*. Teachers think that project work will be more successful *if as many colleagues in the institution as possible get involved in this work, it is important that everybody take it over*. Teachers thus demonstrate that they realise that teaching staff form a notion of school, the way learners and their parents see the school. Acknowledging the significance of parental support is revealed in the reply that *active support of learners' parents* matters, too. On the whole, these results show that teachers find it difficult to cooperate, do common work, share their experience and listen to others. Lack of communication or insufficient communication among teachers is an impediment to the formation of a balanced learning process. Teachers ought to learn to communicate for their learners to be able in future to cooperate and take decisions significant for all. This could be one of the reasons why project work and research tasks are not organised in all teachers' classes, why they do not become a recognised form of work on a whole-school level.

Need for autonomy

In the first two stages of the survey, teachers give the lowest assessment to autonomy (12% and 7%). Teachers point out that for the implementation of project work it is important to be trusted as a teacher, some teachers admit that they would be able to teach something new to their colleagues in this process. Respondents consider it unimportant that they are controlled in the process of change.

In the third stage of the survey, accounting for why they choose to implement project work in the process of learning, teachers range autonomy immediately after children's interests and needs (22%). Teachers consider themselves a part of the teaching staff, as those who are trusted as teachers: *there is an opportunity to introduce something new in an educational institution, to integrate academic subjects, teach colleagues something new.* Implementation of project work is *an opportunity for self-growth, for working in one's own system or forming one's own system.* Research method is an *ideal means of showing oneself, realising one's goals, trying something out. Feel joy and satisfaction for what one is doing, that I as a teacher can give them what they need.* This is a *challenge, testing one's abilities: shall I be able to make children interested? New methods enrich the teachers' work, make it more interesting, classes are not all the same, they like changes and innovation. To get out of the rut, I like to test theory in practice and diversity, to better cope with one's work.* Teachers are driven by a wish to *work at a normal tempo, make the process of learning more interesting, vitalise it.* It is an *opportunity to work in a more interesting way, other way, more creatively,* everybody *can think of something creative.* Summarising all opinions, it appears that in many cases teachers have autonomy at their work and they can take independent decisions and regulate their conduct, which in part accounts for the fact that at the first stages of the survey respondents do not mention autonomy as the

most important reason for them to use project work in the process of learning. However, the fact that need for autonomy appears in the free replies confirms that project work is carried out not only in the favour of learners but also teachers.

DISCUSSION AND CONCLUSION

The study reveals that teachers do not hold a stable opinion on the choice of project work depending on the set task. At the first stage, teacher's competence, children's needs and interests, school support and need for belonging get a rather equal assessment as the major motivators, autonomy lagging behind these. However, when ranking the statements, children's interests and needs go to the first place, followed by teacher's competence and school support. This choice is least affected by the need for belonging and need for autonomy. Yet the free replies of the third stage bring out the priority of child-centred approach in teachers' views and need for autonomy. School support gets low assessment along with teacher's competence and need for belonging.

When grounding their work in their past experience of teaching and learning in a traditional way, the teachers propose ready-made knowledge and thus suffocate the children's inclination to discover new knowledge for themselves.

When saving time and focusing on mechanical acquisition of content, the teachers fail to create opportunities for the children to:
- engage in creative, investigative inquiry;
- learn through cooperation;
- assert their rights to a personal opinion;
- use their rights to be mistaken and be heard;
- be independent and have freedom of choice in all stages of work.

Today, in the conditions of economical crisis in Latvia, with schools undergoing reorganisation, a real threat of redundancy exists. Teachers are afraid to admit to their incompetence and the need to master varied solutions to the organisation and management of the learning process. Teachers distance themselves from colleagues, which hampers the development of a high-quality learning process at school.

The low assessment of cooperation among teachers may be related to the following:
- insufficient attention to the practical training of communication within professional improvement;
- overload, the large number of contact hours and poorly balanced requirements of administration;
- necessity to solve the learners' family problems that are caused by the crisis and social stratification;
- teachers' own economic problems related to their need to survive.

What will our future be like?

REFERENCES:

Abrami, P. C., Poulsen, C., & Chambers, B. (2004). Teacher motivation to implement an educational innovation: Factors differentiating users and non-users of cooperative learning. *Educational Psychology, 24*, 201–216.

Blumenfeld, P. C., Soloway, E., Marx, R. W., Krajcik, J. S., Guzdial, M., & Palincsar, A. (1991). Motivating project-based learning: Sustaining the doing, supporting the learning. *Educational Psychologist, 26*(3&4), 369–398.

David, J. (2008). What research says about project-based learning. *Educational Leadership, 65*, 80–82.

Davidova, J., & Kokina, I. (2007). Teachers' views on innovative processes in schools of Latvia. *Journal of Teacher Education for Sustainability, 8*, 25–36.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 4*, 227–268.

Drelinga, E., & Krastiņa, E. (2011). Teacher as a guide and organiser of primary school learners' research activities. In C. Prachalias (Ed.), *Proceedings of 7th International Conference on Education*, 7–9 July 2011 (pp. 273–278). Athens, Greece: National and Kapodistrian University of Athens.

Gordon, M. (2011). An integrated research course sequence: Empowering teacher candidates to become researchers in their classrooms. *Action in Teacher Education, 33*, 24–37.

Gordon, M. (2009). Toward a pragmatic discourse of constructivism: Reflections on lessons from practice. *Educational Studies, 45*, 39–58.

Grey, C. (2004). *Essential readings in management learning.* London, UK: Sage Publications Ltd.

Iliško, D., Ignatjeva, S., & Mičule, I. (2010). Teachers as researchers: Bringing teachers' voice to the educational landscape. *Journal of Teacher Education for Sustainability, 12*(1), 51–65.

Kaldi, S., Filippatou, D., & Govaris, C. (2011). Project-based learning in primary schools: Effects on pupils' learning and attitudes. *Education, (3-1)39*, 35–47.

Ķīlis, R. (2010). *Latvijas ilgtspējīgas attīstības stratēģija līdz 2030. gadam* [Latvian Sustainable Development Strategy for 2030]. Retrieved June 1, 2012, from http://www.latvija2030.lv/up-load/latvija2030_saeima.pdf

Krajcik, J., Blumenfeld, P. C., Marx, R. W., Bass, K. M., Fredricks, J., & Soloway, E. (1998). Inquiry in project-based science classrooms: Initial attempts by middle school students. *The Journal of the Learning Sciences 7*, 313–350.

Lam, S., Cheng, W. R., & Choy, H. (2010). School support and teacher motivation to implement project-based learning. *Learning and Instruction 20*, 487–497.

Salite, I., Gedzune, G., & Gedzune, I. (2009). Educational action research for sustainability: Seeking wisdom of insight in teacher education. *Journal of Teacher Education for Sustainability, 11*(2), 14–30.

Simkins, M. (2002). *Increasing student learning through multimedia projects.* Alexandria, VA, USA: Association for Supervision & Curriculum Development.

Teaching kinaesthetic awareness to children for sustainable education

Caroline Goodell

Institute for Body Awareness, USA

ABSTRACT

Cultivating kinaesthetic (body) awareness in children leads to individuals who are capable of functioning as productive members of a holistic and sustainable community. Kinaesthetically aware children integrate and access their whole being including instincts, emotions, psychology and cognition. They trust their intuition and make good decisions. Sustainable development requires changes in the way we relate to nature, and we must embrace changes in the way we relate to our own nature, including our bodies. "Unless we are able to translate our words into language that can reach the minds and hearts of people young and old, we shall not be able to undertake the extensive social changes needed to correct the course of development." (World Commission on Environment and Development, 1987). The language of kinaesthetic awareness is central to our human nature, and can be experienced in people of all ages and cultures. Educators can learn this universal language and incorporate it into their curriculum. Teaching kinaesthetic awareness to children is critical to achieving sustainable development.

Key words: body awareness, kinaesthetic, sustainable education, holistic, children, self-awareness, teacher education

INTRODUCTION

Body awareness can help children trust their instincts, make good decisions, manage their emotions, present themselves with confidence and feel secure. This paper discusses what kinaesthetic awareness is, why it is important for sustainable education, and the theories behind it. Also included are specific tools for educators to develop their own kinaesthetic awareness and for teaching kinaesthetic awareness to children.

WHAT IS KINAESTHETIC AWARENESS?

Kinaesthetic awareness is proprioceptive. It refers to the felt experience of the body. For the purposes of this paper, it is specifically related to muscle tension and relaxation, body posture and emotional feelings. Emotional feelings are physical experiences. Research shows that putting feelings into words relieves and lessens stress (Lieberman, Eisenberger, Crockett, Tom, Pfeifer, & Way, 2007). In order to put feelings into words, it is necessary to know what the feelings are. Heightened kinaesthetic awareness provides a vehicle for understanding what is being felt. A simple process that entails feeling the sensation of muscle tension, allowing the tension to be as it is, rather than resisting it, and maintaining awareness of the tension, can facilitate the muscle to relax, opening the gateway to the emotions (Rosen, 1982).

IMPORTANCE OF KINAESTHETIC AWARENESS TO SUSTAINABLE EDUCATION

Helping students tune in to their bodies empowers them. Each child learns to relate to her or his body as a guide, anchoring the child in what is real for the child. This type of inner guidance helps the student make safer and better choices that will positively impact society, the environment, and the world. Destructive and self-destructive behaviour physically feels "bad". A six-year-old told a fabricated story about her family to her first grade class. Afterward, she was filled with remorse. While discussing why she told such a lie, she was asked how her body felt. "Bad," she said. The next day, after making amends for her falsehood, she was asked again how her body felt. She took a deep breath, smiled, and said, "Better." If kinaesthetic awareness is included throughout her early education, this comparison can provide a key for her as she grows up. When she behaves ethically (e.g. tells the truth), her body literally feels good, relaxed and at ease. If she loses integrity (e.g. tells a lie), her body feels tense and ill at ease.

In adolescence this influences the effects of peer pressure. A new student in high school was asked by a popular girl if she smoked marijuana. "No," the new student replied. The popular girl said some friends were going to smoke marijuana before their next class, and invited the new girl to join them. Naturally, the new girl wanted to be accepted by this girl, but she told her, "No, I have something I need to do," and walked on alone. Later she said, "I felt uneasy in my stomach. I felt myself tighten up, like my body was physically going on guard." Fortunately, this girl was raised to notice the signals in

her body – and to trust them. When kinaesthetically aware children are on their own in difficult or potentially dangerous situations, they will be much better prepared to make positive choices.

Every adult feels physical sensations that correspond with ethical and unethical behaviour, but too often we ignore them. A kinaesthetically aware adult is more likely to contemplate how his or her body will feel before, for instance, taking an action that will impact the environment. Pouring motor oil down the drain will not feel good. Putting salad scraps in the compost bin will feel good. Those who are educated to recognise and value these sensations refer to the sensations and are guided by them.

It is never too late to start tuning in to your body and developing kinaesthetic awareness. This awareness is central to human nature. However, it is important to include kinaesthetic awareness at the earliest stages of education. Babies are born immersed in the experience of their bodies. Whether there is conscious awareness in utero is controversial, although whatever awareness does exist in utero would seem to be almost completely kinaesthetic (Royal College of Obstetricians and Gynecologists [RCOG], 2010). Very small children do not need to be educated to be kinaesthetically aware. However, in order to grow up with a kinaesthetic sense that is as intact and innate as their other five senses, kinaesthetic awareness should be nurtured throughout childhood. Because all people have some degree of kinaesthetic awareness, some of the material in a study of how to teach kinaesthetic awareness to children is familiar. But very commonly kinaesthetic awareness is not nurtured in children, and much of this awareness is lost by early adolescence. All educators can benefit from intentionally tuning in to their bodies, practicing kinaesthetic awareness and paying attention to the storehouse of critical information that is available in their bodies.

KINAESTHETIC AWARENESS AND THE UNCONSCIOUS

In the 1940s and 1950s, scientists in Germany and the United States researched how to measure consciousness. Results of this research revealed that in every second, 11 million bits of information are perceived by a human being through the five senses. Consciously, the maximum number of bits of information we can perceive per second is 40. In most seconds, humans consciously perceive somewhere between 4 and 11 bits of information. This means that every second, 10,999,960 bits of information enter the body through the five senses, below the level of consciousness (Norretranders, 1998). It is inefficient to pay attention to millions of little details that are a part of our environment. Some of this information is filtered out through selective attention (Wilson, 2002).

Deep, emotional, intuitive feelings are registered in the body. Gut level feelings are cognitive processes that operate faster than we realise and are very different from the step-by-step thinking we rely on (De Becker, 1997). The body responds with muscle tension or relaxation to many of the millions of bits of information that enter the body below the level of consciousness. This response in the muscle tension is tangible, and it is one way that kinaesthetic awareness allows you to tap the resources of your unconscious mind. Children who are educated with kinaesthetic and emotional awareness learn to trust these bodily responses and to be guided by them.

MUSCLE TENSION AND KINAESTHETIC AWARENESS

Information that is available through kinaesthetic awareness is communicated in the form of muscle tension and muscle relaxation. Unconscious information that is constantly present in the body can convey the genuine response of the person to the situation they are in. Changes in muscle tension can answer questions such as, "Am I safe? Can I trust this? Is this right for me?"

There is a direct relationship between muscle tension and emotional tension, and between muscle relaxation and emotional ease. In an emotionally tense situation, muscles correspondingly tighten. This is adaptive, and provides the possibility of managing a difficult situation successfully. A person with a developed kinaesthetic sense will be equipped to make use of the information in the body's response. For instance, when a person enters a room full of people and suddenly, unwittingly, feels immobilised, the sudden tension is typically viewed negatively, as something working against the person's best interests. The person might think, "If only I could get rid of this tension, I would be alright!" A kinaesthetically aware person will notice the tension, allow it to be as it is, and pay close attention to what it might be telling her or him. This person will recognise the muscle tension as an asset and will use it. This is illustrated in the following story:

> *A counsellor greeted a new client at the door, expecting to escort the client directly up the stairs to her home office. When the client boldly walked past the counsellor to the main part of the home, picked items off the counsellor's living room shelves and mantelpiece, made comments about them, and asked where the items came from, the counsellor instantly froze up. Later she reported that her chest and throat had tightened and she remembered feeling critical of herself for her response. Her self-talk included internal statements such as, "What is wrong with me that I am feeling this way? There is nothing wrong with what she's doing. I hope she can't tell that I don't know how to handle this!" The counsellor desperately grasped at what she thought her reaction to this situation should have been. Later, she said, "I didn't know what to do!"*

If this counsellor had taken a moment to notice the tension in her throat and chest, instead of judging it as the wrong response, she could have trusted it and wondered what it was telling her. This would have created the possibility for her to consider, "My throat and chest just tightened up. Something is going on with me. I wonder what it is?" She might then have been able to recognise that she felt intruded upon. This could have made it possible for the counsellor to say, "My office is upstairs. Let's go."

EXPERIENTIAL EXERCISES FOR KINAESTHETIC AWARENESS EDUCATION

Educators explore their own kinaesthetic awareness as they learn to teach these skills to their students. Learning how to teach kinaesthetic awareness to children includes movement, experiential exercises, exploring body postures, and learning how to talk about body awareness to children.

Movement exercises provide educators with an opportunity to observe the qualities of their personal walking style, try on other styles of walking, and compare how the dif-

ferent walking styles feel physically and emotionally. Experiential exercises introduce educators to basic body awareness and suggest many ways to experience the body kinaesthetically, and tie in an exploration of the physical sensation of emotional experience. Guided imagery helps educators start with feeling an emotion and finding the physical experience of it, then progress from a physical experience to tracking the emotional experience associated with the physical sensation.

An emotional state is often reflected in body posture. Body posture exercises provide educators with direct experiences of the relationship between how they feel emotionally and their body posture. Then, educators experience how their emotional state is affected by intentionally taking on a specific body posture. Teachers learn to apply these various lessons to presentation, performance and social skills for their students.

TEACHING KINAESTHETIC AWARENESS TO CHILDREN AT DIFFERENT AGES

Teaching kinaesthetic awareness to children is an adjunct to other teaching skills. It is most successful when woven into all parts of the curriculum, rather than taught as a separate subject. It is like planting seeds that help the children to perceive over time that there is useful information in their bodies.

PRESCHOOL TO EARLY GRADES

> *A parent observed her child, who was over-stimulated and out of control, racing around the room. The parent suggested that the child try, just for a second, to stop and tell her whether the child's knees were bent or straight. "Don't look!" she said. The child stopped, reflected kinaesthetically, announced, "They're straight!" and raced off. The mother encouraged her child to stop again, just for a moment, and feel whether her shoulders were up by her ears, or down. The child stopped again, sensed the position of her shoulders and said, "They're down." Then she rocked back and forth from one foot to the other. The mother said, "Let's try it one more time. Can you tell me, without looking, whether your tummy is pushing out or if it's relaxed?" "It's relaxed," said the child, and so was she. This developed into a game called "Where Are My Elbows?" that has proved to be successful repeatedly with different children in various environments. Referring to different body parts every time this is played keeps it fun and interesting.*

Seattle karate instructor Joanne Factor found her own way of using this technique. After lining up at the beginning of class, her students often squirm around, rather than take the formal 'closed stance' position that is necessary before class can begin. She used to tell them, "Put your heels together, toes apart." She often had to repeat this several times before the class would settle down and take the correct opening position. After learning *Where Are My Elbows?* Factor observed that she gets better results when she says to her class, "Without looking, are your feet together or apart?"

Additional suggestions for younger children:
- Ask children to act out animals with different emotions, e.g. angry bunny rabbits, happy snakes, cats that feel very good about themselves.
- Ask, "What do feelings feel like in your body?"
- Ask, "Can you remember a time when you felt (sad, happy, angry, scared, etc.)? I wonder if you can remember what your body felt like when you felt that emotion? Can you make your body show that?"

VERBAL SKILLS FOR TEACHING KINAESTHETIC AWARENESS TO CHILDREN

- Put words to the feelings you observe in a child. For instance, you see a child fall off a slide and get a bump on the head. The child starts to cry. If it looks as if there was no pain involved, you might say, "That scared you. You're ok, but it was scary to fall off and bump your head." For a little child this is affirming. When this child's experiences are affirmed over and over again, the child maintains trust in physical sensation that says, "That scared me. That isn't ok," or, "I trust this." This sends the message that the child's assessment of their experience is reliable.
- Another example is, "Oh, the man screamed at him and Timmy started to cry? What did THAT feel like in your body? It felt bad? Yes, it feels really bad to be around someone who's screaming. It felt scary? You're right – it is scary to be around screaming." This affirms the child's experience. Or, "It felt scary? Yes, that was scary for you." This suggests that maybe for another child it might not be scary, it might be funny, but for this child it was scary. Both experiences and responses are valid.
- Include body awareness in conversations with students, especially when a child is confronting something difficult. For instance, "You feel sad? Where do you feel that in your body?"
- To the class, "What do you think? Do you think your feelings? Or do you feel them? What do they feel like? Who can name an emotion?"
- "With every feeling, something happens in your body and it is very useful to notice it. If you think you did a good job with this assignment, I want you to notice what that feels like in your body. If you think you did not do a good job, or didn't do your best, please notice what that feels like in your body, too."
- Address what you see in the moment. For instance, "Your mouth is tight. It looks to me like you're angry."
- Address what you see out of the moment, for instance, "Remember when the class went to our first swimming lesson last week and everyone was excited? When we arrived, some of you went right into the pool and some of you held back. I want you to remember if you were one who went right in, or if you were one who held back. Now, see if you can remember what your body felt like to hold back and feel unsure, or what it felt like to go right into the pool."
- Tell students where you experience your feelings. "When I feel happy, I feel it right here in my chest. It feels soft and open, like all the tension inside has melted away."

- Help students compare what they feel like kinaesthetically in bad situations and in good situations. "You were mean to Jackie? What does your body feel like about that?" "Now that you've apologised and you're friends again, notice what your body feels like now. Can you tell if it feels the same or different from when you were mean to her?"

CONCLUSION

Referring to the body for information is central to being human. This is evident in indigenous peoples and ancient civilisations as well. One Sufi mystical healing practice brings awareness to what is felt in the body, specifically tension or resistance. When resistance is found, the Name of Allah is invited into the tension (Stone, 2010). After walking for days on pilgrimage to a place of power, a Huichol Indian in the Mexican Sierra Madre asks, "How does my body feel in this place of power?" If his body feels good, he will return to this place on pilgrimage. If his body does not feel good, he will find another place of power to visit (Secunda, 1995). It is not surprising that this kind of awareness is often seen in tribal peoples who live close to the land in sustainable cultures.

Introduced to modern society, kinaesthetic awareness enables children to feel and know what is right and wrong and can be applied to how they relate to themselves, society, and the environment. One teenager who was brought up to be tuned in to her body in this way, said, "A lot of teens and people do not trust their instincts or gut feelings. But I've learned to be aware of it and I can physically tell if something feels right or wrong. I've learned to trust that."

Cultivating kinaesthetic awareness in children leads to individuals who are capable of functioning as productive members of a holistic and sustainable community. There are glaring inequities in our political, economic, social, mental health and employment systems. Many of us are traumatised as children, and many of us face stresses such as low income, poverty, drug and alcohol abuse. The dramatic increase in stresses correspondingly increases the need for tools such as kinaesthetic awareness. If we are to succeed in sustainable education, we must educate students about every resource that is available to them. Kinaesthetic awareness gives them access to a powerful and reliable resource for making safe, ethical choices.

REFERENCES:

De Becker, G. (1997). *The gift of fear and other survival signals that protect us from violence*. New York: Bantam Doubleday Dell.

Factor, J. (2010). Personal interview. 4 Feb. 2010.

Lieberman, M. D., Eisenberger, N. I., Crockett, M. J., Tom, S. M., Pfeifer, J. H., & Way, B. M. (2007). Putting feelings into words: Affect labeling disrupts Amygdala activity in response to affective stimuli. *Association for Psychological Science, 18*(5), 421–428.

Norretranders, T. (1998). *The user illusion: Cutting consciousness down to size*. New York: Penguin.

Rosen, M. (1988). Marion Rosen's introductory remarks Gefion School Class, April 14, 1982. Afterword. In E. L. Mayland (Ed.), *Rosen method: An approach to wholeness and well-being through the body* (pp. 97–111). Santa Cruz, CA: 52 Stone Press.

RCOG (Royal College of Obstetricians and Gynecologists). (2010). *Guidelines for women's health*. Retrieved August 31, 2010, from http://www.rcog.org.uk/fetal-awareness-review-research-and-recommendations-practice

Secunda, B. (1995). Personal interview. 10 May 1995.

Stone, D. J. (2010). Personal interview. 7 Feb. 2010.

Wilson, T. D. (2002). *Strangers to ourselves discovering the adaptive unconscious*. Cambridge: Belknap Harvard University.

Passion and professionalism in the teaching profession in forms 1–3

Jolanta Karbovniczek

Ignatianum Academy in Krakow, Poland

ABSTRACT

The article refers to the issue of passion and professionalism in the profession of a teacher in early school education. It presents the concept of passion and professionalism, determines predisposition to practice this profession as well as the personality features of children's educator and partner. Attention is drawn to the competence and creativity of a teacher in a contemporary school.

Key words: teacher, passion, professionalism, abilities, personality, competence, creativity

INTRODUCTION

The history of the teaching profession dates back to ancient times. It is considered the oldest profession in the world. For centuries, the functions, tasks, education, job competencies and teaching (educational work) have changed significantly. The role of a teacher was understood differently before. A teacher was perceived as a 'master', 'model', or 'ideal', someone with great authority, a morally clean 'individuality' and a flawless personality. Passion for this profession was regarded as, 'A gift from God'. A student under the supervision of a master was discovering, searching and comparing, participating in discourses and achieving proficiency in one or more areas. The teaching profession was highly revered and respected. It was performed with 'passion', which subsumes commitment and enthusiasm. My discussion will refer to the issue of teacher's passion and professionalism of a modern educator who is working with children for several hours a day. In Poland and in the world the problems of teacher's professionalism are taken up by many pedagogues including Kwiatkowska, Rutkowiak, Lewowicki, Rubacha, Kwaśnica, Kawka, Dylak,

Schulz, Okoń, Banach, Nowosad, Lappo, Rey, Ornstein, Levine and others. According to American teachers for early childhood education, professional teachers can only talk about quasi profession; since many people perform this job without an education, there are no precise criteria for determining the professional knowledge and skills of teachers. A biographical study of the teaching profession shows that competences in educational activities are acquired through practical experience in school (Śliwerski, 2006, p. 3). Bauer and Kopka (1994) in their study came to the conclusion that without changing the organisation of work, professional development is not possible – frequent presence of teachers in the school, minimum equipment of schools, etc. Professionalization of teachers is not a state but a process that is progressing through work. This process is, on the one hand, an individual issue of a teacher and, on the other hand, takes place in the social system of the school, which he or she also influences. Professionalization of vocational teachers is therefore much broader than acquiring knowledge legitimised by cognitive systems and theories (Landwehr, 1993). In Poland, Nalaskowski conducted a study among teachers at rural regions. Its results suggest that teachers hardly read any books, magazines and items referring to the methodology of teaching helpful in the educational work with children (Śliwerski, 2006). Passion and professionalism constitute, in my opinion, a great 'essence of teaching' in the early school education. In my compact publications or articles I raise the issue of the effectiveness of education in forms 1–3. I have also commented on the suitability and appointment of the teaching profession. In Polish educational system, forms 1–3 (early education) are a priority stage in general education. They include pupils aged from 6 to 10 years and are propaedeutic – preparing for further studies. In any developing society, regardless of the level of civilisation, it is the child who is the subject of care and foresight of parents and teachers who are the initiators of teaching-education work and creators of the educational image. Professionalism, competence, pedagogical talent, relevant personality features conducive to the child and a child's adaptation to the new environment, creativity and innovative approach to teaching and education of our youngest generation are characteristics which are required from a teacher. The teacher should represent a democratic attitude, which is to "show children kindness and understanding, gaining their sympathy and trust, allowing them to make joint and independent decisions, encouraging them to be active and independent in all kinds of practical activities" (Klimaszewska, 2010, p. 162).

EXPLORING TEACHER PASSION AND PROFESSIONALISM

The subject I have taken is closely related to that announced by the Ministry of National Education in Poland – a Year of a School with Passion. Minister of National Education in Poland, Katarzyna Hall, in a letter to start the school year 2011/2012, wrote very significant words: "Every student has talent, each has different developmental needs, capabilities and passions. We want these passions to awaken and develop. It requires the help of parents who would closely cooperate with the school. We also need teachers and directors with a passion" (Hall, 2011, p. 47). These words underline the reality that should shape the educational activity and the teacher. Passion in the teaching profession makes an educational institution, notably, a school, a friendlier place liked by children. A teacher who has found

passion in this profession has the strength and the spark which motivate him or her to take any action on behalf of the child. According to the dictionary of the Polish language, passion is a "strong, passionate preoccupation with something, a passion for something, the object of one's passions. It is the driving and motivating force, coming from strong feelings and emotions" (Szymczak, 2003, p. 456).

People can be passionate about other people, things, issues or their causes. Passion fills one with energy, determination, confidence, motivation, enthusiasm, commitment and obsession. According to Day (2008) passion is not a luxury or an addition, but an essential element of the good and effective teaching and education of children in forms 1–3. In the Lexicon issued by Polish National Scientific Publishing we may find the following definition: "Passion is a powerful, passionate preoccupation with something, it is the teacher's real and great commitment to their work" (Milerski & Śliwerski, 2000, p. 115). Passion, according to Miodek (2005), is a special interest in something, a passionate hobby, a synonym of great love for something. To live with passion, one must be born with it or come across it during life. There is another, third way of construing passion. "Passion is like a fortune. You can be born with it, you can get in the form of inheritance or gift, or earn some extra money by wisely working on the multiplication of what you have. But there is a difference – you can steal money but you cannot steal passion" (Day, 2008, p. 31).

Passion can infect and inspire. For this to happen, you need a decision and a lot of consequences. If you do not choose to live and work with passion, we have a small chance that the repair force develops in our lives on a large scale. According to Palmer (1998) Fried (1995) and Stronge (2002), passion is not a feature of human personality, but what you can discover, explore, systematically verify against recognised values, inspire and create. In relation to teachers, it concerns their creative professionalism, culture, commitment and enthusiasm for continuous self-development. Passion, therefore, plays a very important role in the life of a teacher. It should be acknowledged that lack of passion is a big threat to working with children. Professionalism is, in my opinion, a behaviour that demonstrates effective performance of a profession, doing it expertly or well. A professional is one who does something and then does it much better and faster in pursuit of perfection.

According to the Dictionary of the Polish language, professionalism is "doing something in a professional manner" and a professional is a person practicing something, usually very well, at high levels (Doroszewski, 2012, p. 456). Being a professional means fostering one's personal standards of the theory and practice of teaching. A modern teacher in Poland, according to Andruszkiewicz (2012), is uncertain of own abilities and does not find confirmation of their own values, especially in the time of new emerging challenges and new problems to solve. The teaching profession is susceptible to deformation such as teacher's activities becoming routine and loss of detachment from own behaviours. There is a need for a lifelong learning. I believe that the factors that affect teacher professionalism are those inherent in the teacher (that is, curiosity, refinement, taking care of the quality of one's work, effectiveness of the teaching activity) as well as those inherent in the external reality (that is, the system of teacher education, finances, head teacher's support and removing barriers to vocational training).

The passion and professionalism of teaching are closely related to personality, which is considered a basic criterion for evaluation of the effectiveness of teacher's educational activities. A study which analysed the appropriate features of a teacher in Poland and

in the world differentiates some permanent personality dispositions that underlie instinct, talent, soul and humanity (Dróżka 2004; Kwiatkowska, 2005; Ordon, 2007). For John Wladyslaw Dawid, a Polish pedagogue acclaimed as "the father of the initial teaching methodology in Poland" (Skorny, 1992, p. 63), these features are love of souls, need for excellence, sense of duty and responsibility, inner truthfulness and moral courage. For Mysłakowski (Skorny, 1992) a teacher's personality is revealed in his or her contact with children and involves a lively imagination, parental instinct, ability to express emotions and mental attitude to the outside. For Priest Bosko (Niewęgłowski, 2000) who is a renowned, outstanding educator and teacher, the student remains forever at the heart of the educational process.

The teacher encourages, suggests, creates opportunities and assist in making important and very responsible decisions. The task made by Priest Bosko to himself and all the teachers was to create the right atmosphere and climate which would encourage students to trust the teacher. Friendly attitude of the teacher promotes confidence, provide models of behaviour, helps to meet the needs of students and influences the formation of the atmosphere of cooperation and collaboration. The great master of education, priest John Bosko, has paid much attention to the need for interpersonal contacts among pupils. He valued the individual and personal contacts between the teacher and the student. He believed that personal meetings in a climate of trust and sincere cooperation allow the teacher to reach deep structures of the student's internal life. The teacher should always be ready to meet a student who needs a meeting with a parental attitude or asks for a private conversation. In a teacher-student relationship Bosko emphasised the importance of kindness, openness, directness and respect.

An educator with passion and professionalism should be characterised by some spark – the inspiration that motivates him or her toward ever higher aspirations, and inspires reaching higher levels in one's professional career, which, at the same time, does not allow the teacher to be passive towards the surrounding world and especially – students who are actors of teacher's aspirations and expectations (Rostańska, 1999, p. 110).

Teacher's authority depends on their personality. Personality is therefore an important factor indispensable by curricula, educational reforms, educational materials or organisational ideas. According to Żebrowska (1999), who is a renowned Polish psychologist and a leading authority in her field of expertise, this is the result of one or two-way interaction between two individuals, two groups or an individual and the group, in the course of which one party wins a tendency to model your way of thinking or comment, or behaviour presented by the other party. In the modern school the teacher of forms 1–3 systematically constructs his or her authority, which does not come automatically. Each individual has to earn it with their personal values. Teachers who work with children in junior forms should have a sense of humour, integrity, trust, great substantive knowledge which they can communicate in varied, playful and interesting ways, thereby arousing students' engagement and increasing their motivation to learn.

Authority can be built only through dialogue, meetings with other people, discovery and respect for another's individuality. The teacher must be the first person to be able to shape the personality of their pupils. Children listen to their teachers, believe them and begin to imitate them. Teachers who wish to secure authority should keep some distance between themselves and the student, contingent upon a majority of their experience and knowledge, as well as due to their function as teachers. The teacher becomes a person

who may be particularly important in the child's life, a role model. It is a well-known phenomenon that for a child who goes to school, the true and correct is what the teacher says. The teacher, therefore, is the dominant entity in the relationship with students. To ensure proper teacher-student contact, Kania (2001) proposes practical usage of the following 'ten commandments':

1. Operate on the heart by love, reason by conviction, moderate your peace – be patient, reasonable and controlled, avoid emotional and hasty decisions;
2. Encourage rather than discourage – stimulate to action, activity, creative thinking, self-confidence;
3. My own success is the success of my students – enjoy the achievements of pupils, draw from them the strength to continue working;
4. Be the mediator – mediate between school, home and local environment;
5. Strive for compromise – see the matter not only through the eyes of a teacher but also through those of a student;
6. Open the child's soul to beauty – teach sensitivity, sense of taste, tact and good culture of being in any situation;
7. In order to overcome evil, you have to fight it – give your child a chance to improve, show pathways for the good and ways to change their behaviour;
8. Hope is the mother of the wise who know how far to look – teach perspective, a future-oriented outlook, wise and responsible planning of future life;
9. The best example is the example of one's life – try to be cheerful, smiling, honest and wise in the management of your own life;
10. Bear in mind that the balance of each day is to accept its results along with disappointment and difficulty.

The teacher's way towards professionalism is fraught with obstacles and difficulties. A true teacher is not just a mediator between knowledge and the student, between curriculum and student education, but an educating unit that teaches and transmits the value of own style, mannerisms, personality and commitment. In the teaching profession, more than in others, it is impossible to separate professional responsibilities from moral duties. The procedure is subject to regular moral evaluation, in terms of good and evil, lying and truthfulness, justice and injustice. Polish society requires teachers to represent a high level of ethics, not only at work but also in private life. Teaching ethics is the responsibility of impeccable behaviour. In the work of education we usually deal with what is most complicated, priceless and most expensive in life – with the child. On our pedagogical skill and wisdom depends the student's way of life, mental development, character, citizenship, place and role in life and personal happiness. The knowledge and skills acquired by the child during early school education constitute an essential foundation for further learning and development. Supporting development of pupils belongs first of all to the essential duties of the kindergarten teachers. According to Gruszczyk-Kolczyńska (2000),

> *"supporting the development of all children is needed, because there are indications that children are born very talented, but this talents need to be skilfully developed. The sooner the better... But it should be remembered that you cannot cross the path of development for the child, they just have to climb the next stages of their development, and the task of an adult is to help the child" (pp. 7–11).*

In early school education, teaching and education should be based on stimulation and formation, thus supporting the development of individuals in all spheres – physical, mental, emotional, social. The teacher holds a prominent position in the life and activity of a small child. This has a significant impact on the child's development. It determines whether and to what extent this development will be active and, hence, how it will evolve. Jagiełło (2007) stressed that the teacher, based on the goals of this type, "can not only provide information, but should emit the ability inherent in the student which will be necessary to live in the 21st century" (p. 233). Passionate teachers are guided in their teaching work more by hope rather than optimism. They are hardworking and practical people who know their job and like their pupils. Driven by the moral purpose of maintaining excellence, regardless of the circumstances, they never cease to continue to deepen their knowledge, both theoretical and practical. Such teachers undertake work with children with a strong commitment to be a kind of support, security or simply authority. Teachers who love what they do find for their students time for reflection and participation in individual and group activities that will ensure their right to their age development. Such teachers understand that their work is a huge – emotionally, intellectually and physically. They do not want to be heroes and heroines, and yet are heroic. Teaching is a job for the brave. It requires energy, dedication and determination. Passion is not an addition to the good teaching, but its foundation (Day, 2008).

It must, therefore, be nurtured and sustained. For many, teaching is a challenge which takes a lot of commitment and dedication. Despite various difficulties, passionate teachers do not lose hope and optimism, and continue to love and show love for their pupils by drawing on layers of intellectual and emotional energy. These are the main characteristics of teachers who are primarily driven by passion in what they do. They always find time to reflect on what they do, analyse their activities and students' achievements. This has an irreplaceable impact on students' overall human development which needs competent, appropriate incentives to occur harmoniously on all fronts.

A basic condition for the effectiveness of the teachers' pedagogical interactions refers to their attitude, which is usually construed as relatively enduring beliefs about the child available for evaluation, emotional response to the child and relatively stable dispositions to behave towards him or her in a certain manner (Lobocki, 1990). For instance, a teacher's passion for democratic attitude enables children to discuss common growing problems, helps them perform specific tasks and matters of the goals and decisions of the group as a social unit, as well as caters for students' psychosocial needs.

Therefore, a good teacher is able to impress their passions and skills. Revealing part of his personality will teach students affection, encourage sharing of experiences, develop their interest and invite dialogue. Selfless assistance in solving their problems indicates the great joy of giving to others. This exchange of stimuli from the environment is to take place in a relaxed, friendly atmosphere. The child should feel appreciated and needed in the creation of classes (Tur, 1997). Teachers who love their jobs and love kids are distinguished by great patience in controlling students' development. They remember that some developmental processes cannot be accelerated. To be patient and full of faith in people is an important approach to the profession of early school educator. It is worth quoting a passage from a book "Zorba the Greek" by Nikos Kazantzakis:

"I remembered one morning when I saw clinging bark pupa at the very moment when a butterfly shell tore wrapped around him in preparation for flight. I waited a long time, but the butterfly lingered. Eagerly I bent down and began to warm him with own breath. And in my eyes – sooner than expected in nature – there was a miracle. The shell fell and left the butterfly, but a cripple. I will never forget the horror I felt when I saw that he could not develop wings. The butterfly tried to make the effort of the entire body – in vain, although I helped him with my breath. A patient maturation process was needed here" (Menz, 2008, p. 29).

Passion for the teaching profession is expressed in a systematic and harmonious educational process and has a significant impact on the management of a child's development. A teacher who is able to delight children with passion with their knowledge and skills, who awakens in a child hidden abilities and talents, including faith in one's abilities, will be able to enjoy own successes and the successes of those who made the subject of one's interests.

Summing up reflections concerning the teacher and the teaching profession in early school education, it is worth to re-emphasise the importance of passion, understood as delight in what done does, joy and enthusiasm in teaching and education of the youngest generation. An individual approach to children's needs, discovering their talents and interests, initiating global development is one of the most important tasks of the school. In every child resides talent; everyone has different developmental needs, capabilities and passions. It is crucial to arouse passions and to skilfully develop them.

A teacher for whom passion and professionalism have become a mission of teaching is a great theoretician and practitioner, a reflective and innovative creator of all educational activities in school and beyond. Passion makes the teacher involved in all educational activities throughout his or her entire life. For a passionate teacher every child is important and becomes the subject of interest, fondness and creative reflection. A teacher with a passion may be compared to a gardener who with love, patience and hope cherishes a beloved rose. This rose is each child to whom the teacher dedicates time, commitment and responsibility. *"Your rose is so important to you because you sacrificed a lot of time. (...) You become forever responsible for what you have tamed. You are responsible for your rose"* (De Saint-Exupery, 2000, pp. 52–53).

CONCLUSION

The teaching profession is the oldest profession in human history, dating back to antiquity. A teacher and his or her profession were the basis for the creation of the science known as pedeutology. By his or her attitude, a teacher shapes the face of a school and makes this institution child-friendly and well-liked by learners. The learner needs real teachers who can act as guides along the difficult path of development. For teachers the child should be paramount. By expressing acceptance and love for children, a professional and creative teacher fosters the belief that the child is an important person, worthy of love and respect. Passion and professionalism in the teaching profession is the inner spark that shapes the personality of the teacher and allows him or her to build authority. A passionate teacher accepts children as they are without any conditions. At the same time, he or she poses essential requirements which stimulate personal, physical, intellectual, social and moral development. A competent teacher is aware that passion shapes the versatile personality of a child and affects its harmonious development.

REFERENCES:

Andruszkiewicz, J. (2012). *Profesjonalizm nauczyciela* [Professionalism of a teacher]. Retrieved February 20, 2012, from http://www.modn.elk.edu.pl

Banach, C. (2000). Etyka i kultura pedagogiczna nauczyciela i szkoły [Ethics and culture of the teacher and school]. *Education, 2*, 7–19.

Bauer, K. O., & Kopka, A. (1994). Von Unterrichtsbeamten zur padagogischen Profi – Lehrer – Arbeit auf neuen Wegen [From teaching officials to pedagogical professional – teacher – work in new ways]. In K. O. Bauer (Ed.), *Jahrbuch der Schulentwicklung* [Yearbook of school development]. *Band 8* (pp. 65–84). Weinheim: Juventa Verlag.

Czardybon, M. (1994). Grzegorz Piramowicz – nauczyciel nauczycieli [Grzegorz Piramowicz – teacher of teachers]. *School Life, 4*, 445.

Dawid, J. W. (1962). O *duszy nauczycielstwa: Osobowość nauczyciela* [About the teachers' soul: Personality of a teacher]. Warsaw: KUL.

Day, C. (2008). *Nauczyciel z pasją. Jak zachować entuzjazm i zaangażowanie w pracy* [A teacher with passion: How to maintain enthusiasm and commitment to work]. Gdańsk: GWP.

De Saint-Exupery, A. (2000). *Mały książę* [Little prince]. Warszawa: Muza.

Doroszewski, W. (2012). *Słownik języka polskiego* [Polish language dictionary]. Warszawa: PWN.

Dróżka, W. (2004). *Młode pokolenie nauczycieli: studium autobiografii młodych nauczycieli polskich lat dziewięćdziesiątych* [The jounger generation of teachers: A study of young teachers autobiography in the Polish nineties]. Kielce: Akademia Świętokrzyska Publishing.

Dubisz, S. (2008). *Uniwersalny słownik języka polskiego, t.3* [Universal dictionary of Polish language, volume 3]. Warsaw: Wydawnictwo Naukowe PWN.

Dziewięcki, M. (2003). *Osoba i wychowanie. Pedagogika personalistyczna w praktyce* [Person and education. Personalistic pedagogy in practice]. Krakow: Rubikon.

Dziewięcki, M. (2011.) *Pedagog na trzecie tysiąclecie* [Educator for the third millennium]. Retrieved December 1, 2011, from http://www.opoka.org.pl/biblioteka/I/ID/pedagog3000.html

Fried, R. L. (1995). The *passionate teacher: A practical guide*. Boston, Mass: Beacon Press.

Gasiul, H. (2002). Rozwój osoby podstawą rozwoju osobowości [The development of a person as a base of personality development]. In H. Gasiul (Ed.), *Studia psychologica* [Psychologica studies], *3* (pp. 105–118). Warsaw: Stefan Kardynał Wyszynski University Publishing.

Gruszczyk-Kolczyńska, E., & Zielińska, E. (2000). *Wspomaganie rozwoju umysłowego trzylatków i dzieci starszych wolniej rozwijających się* [Supporting mental development of 3-year-old and older children]. Warsaw: Sip.

Hall, K. (2011). *List Ministra Edukacji Narodowej do uczniów, rodziców, dyrektorów, nauczycieli i pracowników oświaty z okazji rozpoczęcia roku szkolnego 2011/2012* [Letter from the Minister of Education to students, parents, principals, teachers and education workers on the occasion of the start of the school year 2011/2012]. Retrieved September 14, 2011, from http://www.men.gov.pl/

Jagiełło, E. (2007). Każdy uczeń jest niepowtarzalny [Every child is unique]. In A. Klim-Klimaszewska & T. Zacharuk (Eds.), *Ciągłość i zmiana w pedagogice XXI wieku* [Continuity and transformations in the 21st century pedagogy], *2* (p. 78). Siedlce: Akademia Podlaska.

Janowska, J. (2003). *Samoaktualizacja w teorii i praktyce kształcenia nauczycieli* [Self-actualisation in theory and practice]. Lublin: UMCS Publishing.

Kacprzak, L. (2006). *Pedeutologiczne rozważania o nauczycielu* [Pedeutological discussion about the teacher]. Pila: Państwowa Wyższa Szkoła Zawodowa im. Stanisława Staszica.

Kania, A. (2001). Dekalog nauczyciela [Teachers decalogue]. *Wychowawca* [Educator], *1*, p. 6.

Klim-Klimaszewska, A. (2010). *Pedagogika przedszkolna. Nowa podstawa programowa* [Preschool pedagogy: The new core curriculum]. Warsaw: Instytut Wydawniczy ERICA.

Kowalik-Olubińska, M. (1999). O otwartym stylu pracy nauczyciela przedszkola [About the open style of teachers' work]. *Wychowanie w przedszkolu* [Education in kindergarten], *7*, 489.

Kwiatkowska, H. (2008). *Pedeutologia* [Pedeutology]. Warsaw: Academic and Professional Publishing.

Kwiatkowska, H. (2005). *Tożsamość nauczycieli: Między anomią a autonomią* [The identity of teachers: Between anomie and autonomy]. Gdańsk: GWP.

Kwieciński, Z., & Śliwerski, B. (2009). *Pedagogika* [Pedagogy]. Warsaw: PWN Publishing.

Lanswehr, N. (1993). Schulentwicklung. Was is das?... [School development, What is it? …]. *Schweize Schule* [Swiss school], *4*, 43–50.

Łobocki, M. (1990). *W poszukiwaniu skutecznych form wychowania* [In the search for effective forms of education]. Warszawa: WSiP.

Menz, M. (2008). Czarodziej na lekcji, czyli nauczyciel z pasją [The wizard in the classroom, the teacher with passion]. In M. Leyko (Ed.), *Zeszyty nauczycielskie* [Teachers book], *7* (pp. 25–29). Mielec: CKPiDN Publishing.

Milerski, B., & Śliwerski, B. (2000). *Pedagogika: Leksykon* [Pedagogy: Lexicon]. Warsaw: PWN.

Ministry of National Education. (2008). *Regulation of the Ministry of National Education of 23 December 2008 on pre-school education program and general education in particular types of schools*, Annex 1, Official Journal of 15 January 2009, No. 4, item 17.

Miodek, J. (2005). *Słownik ojczyzny polszczyzny* [Dictionary of Polish language]. Warsaw: Europa.

Możdżeń, S. J. (2000). *Historia wychowania 1795–1918* [History of education 1795–1918]. Kielce: Diecesan.

Mysłakowski, Z. (1962). Co to jest „talent pedagogiczny"? [What is a "pedagogical talent"?] In W. Okoń (Ed.), *Osobowość nauczyciela* [Personality of a teacher] (p. 61). Warsaw: PZWS.

Niewęgłowski, J. (2000). Charakterystyczne cechy wychowawcy w stylu Ks. Bosko [The characteristics of an educator in the style of Priest Bosko]. In J. Niewęgłowski (Ed.), *Ksiądz Bosko i jego system wychowawczy* [Priest Bosko and his education system] (p. 180). Warsaw: Salesian Publishing.

Okoń, W. (1996). *Nowy słownik pedagogiczny* [New pedagogical dictionary]. Warsaw: Żak Publishing.

Ordon, U. (2007). *Nauczyciel w przestrzeni edukacyjnej jednoczącej się Europy* [Teacher education in the united Europe]. Częstochowa: AJD Publishing.

Palmer, J. P. (1998). *The courage to teach: Exploring the inner landscape of teacher's life*. San Francisco: Jossey-Bass.

Pojęcia pedagogiczne [Pedagogical concepts] (n.d.). Retrieved November 22, 2011, from http://www.edukateria.pl/praca/pojecia-pedagogiczne/

Pomykało, W. (1996). *Encyklopedia pedagogiczna* [Pedagogic encyclopaedia]. Warsaw: Fundacja Innowacja.

Rostańska, E. (1999). *Wielostronność nauczyciela jako podstawa twórczej interpretacji standardu programowego* [Multilateralism of a teacher as the basis for creative interpretation of the standard curricula]. Warsaw: Adam Marszałek.

Skorny, Z. (1992). *Psychologia wychowawcza dla nauczycieli* [Educational psychology]. Warsaw: WSiP.

Stronge, J. H. (2002). *Qualities of effective teachers*. Alexandra, VA: Association for Supervision and Curriculum Development.

Szymczak, M. (2003). *Słownik języka polskiego* [Dictionary of Polish language]. Warsaw: PWN.

Śliwerski, B. (2013). *Nauczyciel jako zawód* [Teacher as a profession]. Retrieved January 1, 2013, from http://oskko.edu.pl/kongres1/materiały/B.Śliwerski-Kongres.pdf

Tur, K. (1997). Zaproszenie do dialogu [Invitation to dialogue]. *Edukacja i Dialog* [Education and Dialogue], *5*, 57–59.

Ustawa Karta Nauczyciela z dnia 26 stycznia 1982r [Teacher's statue]. Retrieved December 11, 2011, from http://www.menis.pl/karta_nauczyciela.html

Więckowski, R. (2001). Udział nauczyciela w stymulowaniu rozwoju dziecka [Participation of a teacher in stimulating development of a child]. *Życie Szkoły* [School life], *9*, 515–517.

Żebrowska, M., & Łuczyńska, B. (1969). Problem autorytetu rodziców w świetle badań nad nieletnimi [The problem of parental authority in the light of researching the youth]. *Psychologia Wychowawcza* [Educational Psychology], *4*, 383–385.

The concept of basic activities in the Finnish early-childhood education curricula

Titta Kettukangas

University of Eastern Finland

ABSTRACT

This article describes one part of an ongoing research project. The research focuses particularly on the concept of basic activities in the early-childhood education. The aim of the report is to present some answers to the research question, using the new pedagogical systems theory of Ulla Härkönen. While the focus is on parsing the concept of basic activities, at the same time, the aim is also to reach an understanding about children's sustainable human development. The data consist of 14 Finnish early- childhood education curricula from 1972 to 2010. At this phase of research, the survey of the data will take place by using qualitative methods, especially content analysis. Until now, four different categories seem to chart the diversity of the concept of basic activities.

Key words: early-childhood education, pedagogical systems theory, basic activities, content analysis.

THE CONCEPT OF BASIC ACTIVITIES IN THE FINNISH EARLY-CHILDHOOD EDUCATION CURRICULA

The interest throughout this study is to find out and validate which concept best describes one of the pedagogical methods used in early-childhood education: basic activities. In the English literature, usually the concepts of 'care' and 'routines' are used when to describe the mentioned phenomenon. The concept that will be put into operation when discussing this phenomenon in this article is 'basic activities'. The various concepts will be included in the references.

At the beginning of this article, the focus will be on describing the background of the whole research. The study is in progress, and many issues are going to take more time to examine. This article exposes the hypothetical background and theoretical commitments of the research. In addition, the research questions, data, and methods are defined. Some preliminary results for the first research question are highlighted here now, and it consists of the study of this article.

THEORETICAL BACKGROUND

About the Phenomenon of Basic Activities

Different forms of human psychological activity build up the elementary basis of early-childhood pedagogy. The early- childhood education methods are based on forms of these activities and sciences and theories related to them. According to the literature, early-childhood education methods are as follows: basic activities and care, play, work, teaching, celebration, and outing (Härkönen, 2011, p. 58). All activity that occurs at the fundamental level is based on the elemental function of human being and needs to be understood through knowledge of the psychology of the functions proper. Human needs form the basis of activity. Humans, including children is, have to eat, sleep, urinate and defecate, control warmth by wearing clothing, breath fresh air with oxygen, and maintain health (Törrönen, 1994, p. 10–12). These necessities are conditions for life. According to early-childhood educational literature (Hämäläinen, 1976; Karkela et al., 1983; Härkönen, 2005; Hännikäinen et al., 1988; Tassoni, 2002; Gonzales-Mena, 2006; Shimmin & White, 2006), the basic activities in the context of kindergarten are as follows: arrival at kindergarten and leaving it, dressing, undressing, toileting, washing, tidying up, eating, sleeping, resting, outing, transitions, and leisure times. Depending on the subtlety of the analysis, the number of basic activities may be greater or smaller.

There are two main problems that arise when discussing the phenomenon described above. The first problem is that the phenomenon has not been the focus of recent early-childhood education research. Basic activities include several different functions. Some of them, however, have been under research: sleeping and individual rhythm (Siren-Tiusanen, 1996), bedtime routines (Henderson & Jordan, 2010), and mealtimes (Metsomäki, 2006). There are also some studies on the importance of children's daily routines, as Sytsma et al. (2001) and Wildenger et al. (2008) have called these activities. A main resource of information about basic activities in Finnish day care comes from the 1970s, when a group of scientists did several studies about early-childhood educa-

tion in kindergartens. This happened at the same time as the Children's Day-Care Act legislation. Hämäläinen and Niiranen (1973) charted activities in crèches (day nurseries), Hämäläinen (1976) described preconditions and contents of action in kindergartens, and later Munter et al. (1977) did developmental research in education of children under the age of three years in kindergartens. The other sources of information are research and experiment in health education in kindergarten (Karkela et al., 1983; Hännikäinen et al., 1988). Additionally, there are several textbooks concerning basic activities though the amount of information in the books is limited.

The second problem is the lack of any sustained concept in use that is able to describe all the activities that, in reality, belong in the mentioned area of education. In addition to that, words may have different meanings in different languages. The problematic issues about this concept will be discussed later in this article in a result section.

Pedagogical Systems Theory of Early-Childhood Education

This study follows the features of pedagogical systems theory of early-childhood education (Härkönen, 2011). Härkönen has developed a new theory for early-childhood education and considered the meaning of the concept of early-childhood education. She has also researched pedagogic theories and the ideas of such great historical pedagogues as Johann Heinrich Pestalozzi, Friedrich Froebel, Rudolf Steiner, John Dewey, Maria Montessori, and others, studying the diversities and similarities of their educational thinking. Härkönen (2011, p. 51) has found that pedagogic theories include ontological, epistemological, societal, human being-related and other philosophical views in addition to the solutions to educational problems. As a result of these researches, general qualifiers have been found within the concept of early-childhood education. Härkönen wants to point out that these qualifiers are historically sustainable (Härkönen, 2009, 2011).

According to Härkönen (2011, p. 58–59), there are four extensions to the concept 'early childhood education': early-childhood education practice, early-childhood education subject, early-childhood education science, and early-childhood education thinking. Each of these extensions includes nine intensions or contents or relationships that define early-childhood education. Eight of these intensions are care, education, teaching, learning, development, socialisation, civilisation, and spiritualisation. The ninth intension is the general system model of historical pedagogues' early-childhood education thinking (Härkönen 2011, p. 56). All extensions should include the same intensions if speaking about early-childhood education is desired. Härkönen has found connections between extensions and intensions of the concept of early-childhood education, and she has modelled the theory (Härkönen, 2011). The character of pedagogical systems theory and the corresponding model is historical.

Basic Activities as a Part of the pedagogical Systems Theory of Early-Childhood Education

The concept of basic activities is one part of the educational systems and, at the same time, is linked with the whole systems in a systemic way. A category of basic activities is one of the subsystems of methods of early childhood education (Härkönen, 2011, p. 56). In children's activity, early childhood education methods are in systemic connection with each other. For example such basic activities like dressing and undressing are elementary

work (Härkönen, 1988, p. 111). From this account basic activities are near work and work activities for instance because they have same goal and aim to get activity to the end. In addition to that basic activities can transform into play. Then the activity is not focused on the goal but interest is in the activity itself. Also play´s content can be basic activities. For example a child can play eating or feed a doll in his/her play. Method of teaching is related to basic activities, because child needs teaching, guiding and modelling in basic activities. Basic activities are also related to celebration, when dressing up or having a feast as well as they are related to outdoor education when clothing or having picnic and just being outdoors. According these accounts basic activities is related to all methods of early childhood education. Similar connections can be drawn to all parts of the systems of early childhood education at the level of language and concepts of textual categories.

The aim of this study is to chart a diversity of the concepts used to describe basic activities and to find out the meanings to the concepts proper. According to Virtanen (2009, p. 66), the meanings of concepts appear when studying the context they are used in and the ways the authors have contained and interpreted the used concepts. Language and concepts define and direct people's action by their meaning. In the pedagogical systems theory of early-childhood education of Härkönen (2009), concepts are mentioned when discussing all the systems. Clarifying and understanding conceptions is needed for reaching tolerance and cooperation (Härkönen, 2005, p. 12), and in this study especially concerning basic activities. Thus, this study is connected with the ideology of sustainable education (Härkönen, 2009).

THE QUESTION OF THE STUDY

The focus of this report is the question: What kinds of different concepts were used to concern basic activities in the Finnish early-childhood education curriculums from 1972 to 2010?

DATA AND METHODS

The data from the study in this article is constructed from the content of fourteen (14) Finnish early-childhood education curricula (1972–2010). This period was chosen because the Children's Day-Care Act came into effect in 1973. The public early-childhood education and care system in Finland was built up because of the emerging need for day care related to a changed social structure. Simultaneously, kindergarten teacher education was developed. Early-childhood education science as an independent discipline has continuously confirmed its position in the field of education science (Hännikäinen, 2010, p. 102; Kinos, 2011, p. 147). The data curricula of this study are shown in Table 1.

Table 1. Finnish early childhood education curricula from 1972 to 2010. Translation is done by the author.

CURRICULUM	PUBLISHER	YEAR	PAGES
Experimental Pre-School Curriculum	Pre-School committee report appendix	1972	33
Methods of education and teaching 5-6-Years Old Children	National Board of Social Welfare	1975	46
Joyful Sessions	National Board of Social Welfare	1975	72
About the Care, Education and Teaching Under 3-Years Old Children	National Board of Education	1979	85
Report of the Committee of educational goals in Day Care	Committee report	1980	202
Pre-School Curriculum for the 6-Years Old Children	National Board of Social Welfare	1984	102
A Plan of Action in Day Care for the Children under Three Years Old	National Board of Social Welfare	1986	67
A Plan of Action in Day Care for the 3 to 5-Years Old Children	National Board of Social Welfare	1988	122
Core Curriculum for Pre-School Education. Memorandum of the task force 31.12.1992	National Board of Education and Centre for Research and Development of Welfare and Health	1992	30
Starting Points for Planning Pre-School	National Board of Education	1994	5
Core Curriculum for Pre-School Education	National Board of Education	1996	30
Core Curriculum for Pre-School Education	National Board of Education	2000	24
National Curriculum Guidelines on ECEC	Ministry of the Social Affairs and Health	2005	48
Core Curriculum for Pre-School Education	National Board of Education	2010	58
		TOTAL	**924**

The total material forms a set of qualitative data. The data consists of written documents. The resources for the study are composed of texts. The researcher herself alone has interpreted the texts, basing the interpretation on the language and its cultural meanings. The issue at stake is analysing and interpreting the curricula texts and the definitions and concepts that they contain. Because the aim is to understand the meanings for the concept being focused on, the hermeneutic approach is needed. The text will be understood in a hermeneutic circle by proportioning its parts into whole and the whole to its parts (Puolimatka, 1995, p.127; Raatikainen, 2004, p. 89).

The analysis at this stage during the research process was done by content analysis. First, the whole dataset (924 pages) was read word by word. At the same time, all sections that concern basic activities, according to the interpretation by the researcher and the theoretical framework, were marked. These sections were collected into one file by scanning to transform the data into a digital form (word documents). Then the data was coded again, based on the content analysis. Coding was done with the help of ATLAS. ti software by marking the items whose contents related to basic activities. Thus, every single concept got its own code, and so did every item or phenomenon. One sentence could have several codes, depending on its content. After that, codes were classified and arranged in a matrix. At this point of research, some information could be found and presented. Deeper analysis has to be done later during the research process.

RESULTS

Diversity of Concepts

The concept that will be used when speaking about the phenomenon being researched is basic activities. Other variations of concepts will allude to the references and will be italicized.

In the Finnish early-childhood education curricula and pre-school education curricula, there are 12 different concepts used when referring to the phenomenon of basic activities. The most common concept is *perushoito* (literally translated as 'basic care'). Other concepts and conceptions referring to caring are *hoito* ('care'), *huolenpito* ('solicitude') and *perustarpeista huolehtiminen* (literally 'taking care of basic needs')/

Different concepts that include the prefix *arki-* ('everyday') increased in the 1990's: *arkikäytännöt* ('everyday practices'), *arkipäivän tilanteet* ('everyday situations'), *arkipäivän toiminnot* ('everyday activities'), *arjen toimet* ('everyday duties'), *arkeen liittyvät tilanteet* ('situations related to everyday-life'). The phrases which begin with the concepts *jokapäiväiset* ('daily') have much the same tone. These phrases are: *jokapäiväiset tilanteet* ('daily situations') and *jokapäiväiset toiminnot* ('daily activities'). A little different tone is in the concept *elämän hallinnan taidot* ('life management skills') that was used in one curriculum. The concept *perustoiminnot* ('basic activities') was used in two curricula (1984 and 1986). Thus, in these curricula the concept of basic activities was not used continuously but sometimes beside the concepts of 'basic care' and *perushoidon toiminnot* ('activities of basic care').

Different concepts and phrases were collected and classified according to their meanings and various tones. These tones are related to the culture and language. (See Table 2.)

Table 2. Categories of the concepts of basic activities.

Category	Concepts or expression
Basic care and *basic* activities	Basic care, basic activities, taking care of basic needs
Basic *care* and *care*	Basic care, care, solicitude, taking care of basic needs
Every day and *Daily*	Everyday practice, everyday situations, everyday duties, situations related to everyday-life, daily situations, daily activities
Basic *activities*	Basic activities, daily activities

The Concepts of Basic Care and Basic Activities

What is the meaning in the concept of basic activities? The modifier of the expression 'basic activities' is 'basic'. According to *The Dictionary of the Finnish Language Office* (2013), the word 'basic' refers to something fundamental or dominant, elementary or even primitive. When the concept of 'basic activities' refers to activities mentioned before such as dressing and undressing, eating, toilet behaviour, outing, resting, and sleeping, the issue at stake is the human basic needs.

Furthermore, in the pre-school curriculum of 1972 (p. 17), it is mentioned that the basic activities (the concept used in this curriculum was 'everyday activities') are 'important educational situations because during them, children learn some fundamental habits.' In this phrase, as well as in the concepts 'basic care' and 'basic activities,' there is the expression 'basic.'

The Concepts 'Basic Care' and 'Care'

According to the data, caring as a pedagogical attitude is strongly related to the basic activities. Now the focus is on the concept of care. Caring refers to maternal care, taking care of something, and even healing. In the National Curriculum Guidelines on ECEC in Finland (2005, p. 16), it is mentioned that 'a good care forms a basis for whole early-childhood education practice', 'well-cared child's basic needs are satisfied', and 'the younger a child, the more adults take care of his or her needs'. Thus, care is an important part of early-childhood education.

According to the National Curriculum Guidelines on ECEC in Finland (2005), early-childhood education is a combination of care, education, and teaching. However, according to the pedagogical systems theory of early-childhood education (Härkönen, 2011), early-childhood education includes also five other intensions: learning, development, socialization, civilization, and spiritualization. All of these eight intensions are needed if one wishes to comprehend the concept of 'early childhood education' in all its scope. Thought about in a systemic way, this means that every early-childhood education method also includes all these intensions. As mentioned earlier in this article, the basis of the educational methods is in human activity and human motivation. The concept 'care' refers to the action that is performed by an adult or the action that is focused on caring for others. Niikko (2005) has studied caring as a pedagogical action. Thus, for example, in the pre-school curriculum for six-year-old children (1984, p. 22) it is mentioned that 'basic care focuses on an independent activity'. In this phrase, 'activity' refers to the action of the child, not to the caring of an adult. And further on, it has to be mentioned that in the Finnish language, there is no specific concept that could describe the action where a person takes care of himself or herself in this particular meaning, the focus of this study. These are a few examples of many problematic issues about the concept of care.

The Concepts 'Everyday' and 'Daily'

In 1990s, there was a change in the concepts with different meanings of basic activities. The concepts referring to something that happens every day were extended into the Finnish early-childhood education curricula. These concepts or expressions were as follows: *arkikäytännöt* ('everyday practices'), *arkipäivän tilanteet* ('everyday situations'), *arkipäivän toiminnot* ('everyday activities, *arjen toimet* ('everyday duties'), *arkeen liittyvät tilanteet* ('situations related to everyday-life'), jokapäiväiset tilanteet ('daily situations'), and

jokapäiväiset toiminnot ('daily activities'). These concepts and expressions were clarified to mean, for example, mealtimes, dressing, undressing, outing, and hygiene.

Here the focus is on the concepts 'everyday' or 'daily,' even for the routines because the Finnish concept *arki* means the opposite of the notion of 'holiday' and can be translated into 'everyday routines' in English. It has to be mentioned that there is also concept *rutiinit* (routines) in Finnish. The term *rutiinit* is not used in early-childhood education curricula in Finland, but occasionally it is used in some early-childhood education textbooks and in colloquial language. All these concepts refer to something that is common and happens continually. The concept *rutiinit* ('routines') also has a negative overtone in Finnish language.

The Concept of Basic Activities

In this chapter, the focus is on the head of the expression, 'basic activities.' The concept of activities refers to the various kinds of the steps in life. Now the question is: what does the concept of activities mean?

According to the literature related to early-childhood, the concept 'activity' is replaced by several different concepts in various contexts. These concepts are; *toiminta* ('action'), *toimi* ('duty'), *käytäntö* ('practice'), *tilanne* ('situation'), *hetki* ('moment'), *vaihe* ('phase'), and *aika* ('time').

CONCLUSION

The principal result at this point of the research process is that the concepts concerning basic activities in Finnish early-childhood education curricula divide into the following four main groups: 1. basic care and basic activities, 2. basic care and care, 3. everyday and daily, and 4. basic activities. There are several concepts and value judgements associated with every category. According to the result at this point of research, the core meaning is in the concept 'basic.' (Table 2.)

The data from the study consists of curriculum texts, which are public documents and available for every reader. That and the coverage of the data confirm the validity of the study.

The research is in progress. Concepts will be analyzed further with the help of the development psychology of early-childhood education and also semantically-based concept analysis. In upcoming research, it is possible to search for additional sustainable meanings for the concept 'basic activities.' The analysis may reveal different variations and also historical and social connections with the change of the meanings to the concept of basic activities.

REFERENCES:

Gonzales-Mena, J. (2006). *Foundations of early childhood education. Teaching children in a diverse society.* New York: McGraw-Hill.

Henderson, J., & Jordan, S. (2010). Development and preliminary evaluation of the bedtime routines questionnaire. *Journal of Psychopathology Behaviour Assessment 32*, 271–280.

Hämäläinen, H. (1976). Päiväkoti kasvuympäristönä. Kuvaus päiväkotien toiminnan edellytyksistä ja sisällöistä. [Kindergarten as educational environment. A description of the preconditions and contents of action in kindergartens.] *Reports from the department of psychology*. University of Jyväskylä.

Hännikäinen, M., Karkela, E., Kilpeläinen, M., Korhonen, J., Pirttimaa, R., & Ruoppila, I. (1988). *Terveyskasvatus päiväkodissa. Toimintasuunnitelma päiväkoteja varten*. [Health education in day-care. A curriculum for Day- Care Centres.] Publications of the National Board of Health, Finland. Tutkimukset, January 1988.

Hännikäinen, M. (2010). 1 to 3-year-old children in day care centres in Finland: An overview of eight doctoral dissertations. *International Journal of Early Childhood, 42*(2), 101–115.

Härkönen, U. (1988). *Pienten lasten työkasvatus*. [Work education of young children.] Jyväskylä: Gummerus.

Härkönen, U. (2005). Varhaiskasvatuksen teorian kasvu mielen puutarhassa. [Growth of the theory of early-childhood education in the mind garden.] In A. Niikko & R. Korhonen (eds.). *Lapsuuden puutarhassa* (pp. 304–328). Joensuu: Yliopistopaino.

Härkönen, U. (2009). Pedagogical systems theory and model for sustainable human development in early-childhood education and care (ECEC). *Journal of Teacher Education for Sustainability 11*(2), 77–86.

Härkönen, U. (2011). The process of creating the pedagogical systems theory for early-childhood and preschool education. In M. Veisson, E. Hujala, P. Smith, M. Waniganayake, & E. Kikas (Eds.) *Global perspectives in early childhood education. Diversity, challenges and possibilities.* (pp. 47–66). Frankfurt am Main: Peter Lang.

Karkela, E., Kilpeläinen, M., Korhonen, J., Pirttimaa, R., Ruoppila, I., & Tiusanen, E. (1983). Terveyskasvatus päiväkodissa. Tutkimuksen tausta ja lähtökohdat. [Health education in kindergarten. Basis and starting points of the research.] Jyväskylän yliopisto. Opettajankoulutuslaitos. *Tutkimuksia, December 1983*.

Kinos, J. (2011). Early childhood education in Finland – History, the present and a little part of the future. In M. Veisson, E. Hujala, P. Smith, M. Waniganayake & E. Kikas (Eds.) *Global perspectives in early childhood education. Diversity, challenges and possibilities.* (pp. 141–151). Frankfurt am Main: Peter Lang.

Metsomäki, M. (2006). 'Suu on syömistä varten': lasten ja aikuisten kohtaamisia ryhmäperhepäiväkodin ruokailutilanteissa. ['Mouth is for eating': children and adults encountering at the mealtimes in group-family day-care settings. *Jyväskylä studies in education and social research*. Jyväskylä: Jyväskylä University Printing House.

Niikko, A. (2005). Suorittavasta hoidosta eettisen huolenpitopedagogiikan toteuttamiseen. [From conducting care to realising ethical pedagogy of care]. *Research Reports of the faculty of Education 94*. University of Joensuu. Joensuu: Yliopistopaino.

Puolimatka, T. (1995). *Kasvatus ja filosofia*. [Education and philosophy]. Helsinki: Kirjayhtymä.

Raatikainen, P. (2004). *Ihmistieteet ja filosofia*. [Human sciences and philosophy]. Helsinki: Gaudeamus.

Shimmin, S., & White, H. (2006). *Every day a good day. Establishing routines in young early years setting.* New York: Sage Publications.

Siren-Tiusanen, H. (1996). Saako lapsi nukkua, liikkua ja elää omassa rytmissään. Näkökulmia nuorimpien päiväkotilasten kuormittumiseen. [Can a child sleep, move and live to his or her own rhythm. Perspectives on the stress tolerance of younger day-care children]. *Research Reports on Sport and Health 102*. Jyväskylä: LIKES-tutkimuskeskus.

Tassoni, P. (2002). *Certificate Child Care and Education*. Oxford: Heinemann Child Care.

Törrönen, M. (1994). Need definitions and child welfare. *Central Union for Child Welfare Publications 93*. Helsinki: Painopörssi.

Virtanen, J. (2009). Elisabeth Alander, Aukusti Salo ja suomalaisen lastentarhan idea. [Elisabeth Alander, Aukusti Salo and the idea of Finnish kindergarten]. *Kasvatus & Aika* [Education & Time] *3*(3), 65–78.

Widenger, L., McIntyre, L., Fiese, B., & Eckert, T. (2008). Children's daily routines during kindergarten transitions. *Early-Childhood Education Journal 36*, 69–74.

Environmental factors in the development of personal values orientation

Ojārs Rode

Daugavpils University, Latvia

ABSTRACT

The problem is related to essential differences between the publicly desirable and actual values orientation of basic school learners. The aim of the research is to assess environment and other factors in childhood that affect personal values orientation. The research comprises analysis of relevant literature in psychology and education about the development of personal values orientation; it also singles out factors of values orientation in life-stories of self-ascertained personalities. The practical part of the research is produced with the method of phenomenological analysis. The article analyses intentionally sampled in-depth interviews with personalities that are well-known in Latvian society. The sample includes interviews with representatives of various professions: artists, scientists, cultural and public figures who have achieved self-expression and ascertainment in their chosen professions and in life in general. Phenomenological analysis of interview data and relevant literature suggests that personal values orientation is formed in early childhood. Significant factors that affect the values orientation of basic school learners were identified: the environment surrounding a person in childhood and the child's character traits. Consideration of both these factors is important when dealing with the problem of learners' values orientations.

Key words: values orientation, self-ascertainment, environment, character

INTRODUCTION

The present study is a sequel to a prior investigation of the connections between values oriented environment for upbringing and children's values orientations (Rode, 2010). The goal of both studies is to determine the prerequisites for shaping school environment in sustainable education. Prior investigations proved that values and the connection between an individual and their environment found in folk traditions are related to sustainability. Folklore suggests that for harmonious relations of an individual and environment to develop it is important to balance individual and public interests which shape an individual's sense of belonging to the environment. Sense of environment is perceived as an aspiration, grounded in the feeling of community, to belong to a certain environment or community. It involves both physical belonging (a bond with a close or somewhat distant physical environment such as house, yard, school, etc.) and social belonging (a feeling of inclusion in the family, a circle of friends, a classroom, etc.) (Apine & Roga, 2010). While searching for conditions of mutual compliance between individual and public interests, it is important to determine how the ideas found in folk cultural legacy resonate with the relationship of an individual and the environment in modern times through life stories of self-realised personalities.

Contemporary studies, even those in widely recognised systems of education (Kuurme & Carlsson, 2010), suggest that a traditional school, though well organised technologically, professionally and innovatively, does not secure a positive quality of life (feeling of comfort) among learners. According to empirical research, this discrepancy mainly stems from the fact that school environment fails to facilitate learners' aspirations for self-respect and independence, which are essential to their values orientations (Orska, 2006), self-ascertainment (Anspoka & Siliņš-Jasjukeviča, 2010), or sense of belonging to an environment (Apine & Roga, 2010; Augškalne & Garjāne, 2010).

Lack of comfort is probably the reason for the growing disciplinary problems and low performance in academic subjects (Lieģiniece, 2009; Geske, Grīnfelds, Kangro, & Kiseļova, 2010). Feeling of comfort, according to the above mentioned studies, depends on the relation between the learners' values orientations and the environment, which suggests that balancing these relations should improve learners' discipline and performance in academic subjects. One such educational programme is proposed by Bala (2006). He describes a multicultural programme "Education in Human Values", which has been adapted to 166 countries around the world, including all continents. According to Bala (2006), its implementation results in improvement of learners' discipline and academic achievement even in schools with learners labelled as "problem" children. The programme is based on five human values: Love, Truth, Serving, Non-Violence and Peace. The basic values are revealed in sub-values. Bala's programme envisages the development of a balanced personality by means of training in the above mentioned general human values. Instead of enforcing values, the programme provides an opportunity for the individual to arrive at a positive decision by themselves, emphasising and consolidating in each child their inherent kindness and forming conditions for practising these values. The environment shaped by teachers in cooperation with parents, or, in other words, developed in learner-teacher-parent partnership, is recognised as especially important. The programme emphasises that the teacher should enact these values rather than exhibit professional qualities.

A similar model of "Living Values Education" which creates a specific environment for the development of a positive values orientation among children is described by Drake (2007). This model is also approbated in many countries around the world. The programme envisages organising an environment in which everybody 'breathes in one breath' – school staff, parents and learners and the surrounding community all work as a single team. Drake emphasises the key role of the teacher's personality in such a team. He claims that no success is possible unless the teacher's personality is oriented to general human values. Teacher should not play one role at school and another one outside it.

Drake's "Living Values Education" programme highlights the significance of learners' individual traits. According to Drake (2007), education is incomplete if it ignores the human personality and its experience as a whole. It must help each person best express all of their talents, potentials and dreams. The programme offers education in twelve human values: peace, respect, cooperation, freedom, happiness, honesty, humility, love, responsibility, modesty, tolerance and unity. The philosophy Drake's programme encourages teachers to use the legacy of their folk culture.

Folk traditions that concern children's upbringing are usually called folk pedagogy. Analysis of folk culture legacy from this perspective (Роде, 2012) reveals a series of factors which shape the environment for upbringing and are essential for children in that they form stable values orientations. Major values orienting environments in this respect are family, homestead, community, ethnos, nature, rural homestead, family routine and labour environment in nature and rural homestead. Examination of folk traditions in upbringing in the light of the components of sustainable development (ecological, economic, social, culture) reveals an overlap or a merging of their content (Роде, 2012). No major component can be singled out among them, or a major environment, for that matter, as they are all harmoniously related and equally significant in the development of children's values orientations. This idea echoes what Gebser describes as indivisibility of the chronotope of an environment for upbringing (Neville, 1999). Gebserian structured model of consciousness distinguishes five manifestations of the latter: archaic, magic, mythical, mental, and integrated consciousness which simultaneously coexist in humans. This means that one must carefully examine relevant theories on child and adolescent development that acknowledge developmental hierarchy. Gebser does not perceive any need to create different environments for the upbringing of children of different sexes, abilities or age groups. It is vital that one environment helps each child realise their full potential.

Gebser's ideas and the totality of folk pedagogy in the legacy of Latvian folk traditions should become the foundation for a sustainable school environment in the conditions of Latvia. Therefore, it is crucial to determine whether the natural development of folk pedagogy, under the conditions of contemporary life, can support successful personality development. To gain any notions of that, childhood stories recounted by self-realised personalities in Latvia have been investigated.

STUDY OF LIFE STORIES

The aim of life story studies was to find in the life stories of self-ascertained personalities those factors that determined their values orientation. In the research we looked for general traits of the environment and the individual in childhood period that could have

facilitated personality development without clarifying why personalities have found their meaning of life in a certain profession.

The study is based on in-depth semi-structured interviews with well-known personalities in Latvia. The respondents were given freedom to tell their life story. At the end of the interview, if necessary, respondents were asked to retell in greater detail a particular aspect of their life which had been less revealed. The total of 13 life stories was analysed. The combined duration of interview audio recordings is 16 hours and 26 minutes. Transcription produced 94 pages (interval 1.5).

Analysis of respondents' CVs reveals that the sample includes representatives of various professions: artists, scientists, cultural and public figures who have ascertained themselves in their chosen professions and lives (have higher education, hold research degrees, are active both at work and in public life). The age of interviewees ranges from 31 to 80 and is relatively evenly distributed by approximately 3.5 year segments; the female/male ratio is 6:7. The method of phenomenological analysis is used in the study. Transcripts were read for topics related to childhood and school years.

Due to spatial limitations, a detailed interpretation of only one respondent's life story will be given as a salient example before outlining a summary of key findings from all life story interviews.

Analysis of A respondent's interview, discussion
The respondent was born in unfavourable socio-political and economic conditions in an intelligentsia family. *"I am a child born in the times of war and my Mum was in prison when she gave birth to my sister, a German prison…"* The interviewee grew up on the outskirts of town, in physically and spiritually ordered, aesthetically pleasing yet modest environment, without amenities and comfort supplied by parents. *"There were flowers, there was grass, there were shrubs – lots of lilac and rose bushes…"* The respondent sensed belonging to this environment. *"There, in my childhood, in that house, though it was my Mum and dad's, I felt at home…"* Respondent's parents appear to have set strict demands for cleanliness, order and performance of certain duties in the family. *"…for the most part, something had been cooked, we had to heat it, wash up and clear everything in the kitchen, everything had to be kept in order..."* Because of parent's heavy work duties, the respondent had grown up without much supervision, under conditions of uninhibited development, being on her own or among peers. *"And I recall that sense of solitude very well, and I was happy with it, and I do not remember that I had been afraid…"* Throughout childhood the respondent had been in a very aesthetically organised cultural environment and nature. *"Those graves were very beautiful in my childhood, very nice…"* She had felt a sense of belonging to them and had been emotionally moved while among them. *"I had even been swimming during the lightning and I liked it so much ... I had never been afraid of lightning or thunder… I had never been afraid of any insects, nature, bushes or birds."* The child spent much time in the environment of rural homestead and domestic animals, sensing her belonging to it. She performed certain chores. *"It was our duty to pick berries. And it had never been hard for me. It did not seem too boring or disgusting… I think such solitary actions when you are alone with your thoughts are very pleasant..."* She had grown up with her granny, eating wholesome food, in a free, uninhibited atmosphere. *"Nobody took care for us."* In very early childhood the respondent had been restful, patient, distanced. *"My Mum said that when I was born she could leave me in the pram outside for hours, go to the market, shop and come back after two hours and the neighbours said they had thought the pram had been empty..."*

Her life was full of parents' care and love; the respondent often uses diminutive forms when talking about her parents.

The interviewee recalls her school years without pleasure because they did not comply with either the respondent's inner sense of justice or her true desires. She describes herself as conscientious because she had always tried to do things that she did not like. *"I did not like to go to school and the older I grew the more I disliked it… I quarrelled with teachers… when some injustice had been done to classmates…"* She holds in good memory the teachers of sports and singing whose classes were interesting and in later years – the class tutor who had noticed the respondent's talent and helped realise it by letting her attend extracurricular activities. *"…we had a wonderful class tutor who backed up my cutting classes."*

The respondent had been aware of her interests quite early. She treated the support she had received from the surrounding environment as justice to herself; people who had supported the respondent remain in her memory as most positive personalities.

In the summary we stated that in the case of respondent A, a values-oriented environment is characterised as filled with family and parents' caring, love, functionally organised in a particular way, typical of the urban outskirts as well as of a rural homestead, with industrious and intellectual people, children's games, economically modest, socio-politically unfavourable, aesthetically rich, full of natural objects, facilitating free development, full of certain duties. The respondent had not felt a sense of belonging to her school environment.

The values found in the values-oriented environment of respondent A's childhood and manifested in the child, according to Bala's distinction of general human values, fall into the following categories: the basic value of *love* matches respect, love for parents, friendliness, kindness, empathy and emotionality; the basic value of *truth* – openness, honesty, beauty, being true, ability to evaluate, carefulness and watchfulness; that of *serving* – responsibility, selflessness, wish to help and wish to stand in against injustice; that of *peace* – reflection, endurance, modesty, forgiveness, patience, independence, reserve, self-awareness, simplicity and shyness; that of *non-violence* – freedom, braveness, fearlessness, abstaining from condemning.

The traits that were manifested in the respondent already in early childhood and could have been present in the child are as follows: emotionality, peacefulness, patience, reserve, tending to avoid unpleasant things, bravery.

Respondent A grew up in manifold circumstances of a values-oriented childhood environment that facilitated her personality development. Even the unfavourable socio-political and economic conditions had not left a negative impact on her personal values orientation. Rather, the hardship encouraged a wish to serve, developed a sense of co-responsibility and duty, patience and modesty. Emotional experience, in turn, could have facilitated sensitivity and imagination. Great significance in the formation of the respondent's values orientation could have been attributed to aesthetically rich cultural environment surrounding her. It developed the respondent's aesthetic feelings: sense of beauty, striving for order, harmony, ability to wonder and reflect, peacefulness, emotionality as well as ethical traits such as respect, reverence.

No doubt, rich natural environment both in urban outskirts and in the countryside as well as free living therein could not but leave a lasting positive impression on the respondent's personal values orientation. Closeness to nature is described by the respondent in a particularly emotional language, which may indicate a sense of belonging to it.

SUMMARY OF THE ANALYSIS OF LIFE STORIES

Each life story describes a particular person's childhood in the circumstances of specific environment and is hence unique. Even if we find common features, e.g. *environment of uninhibited development*, it has still been peculiar for everyone and has contributed to each individual gaining therein something of one's own, according to one's interests and psycho-physiological peculiarities. In the present study, in all life stories shared, the features of a values-oriented environment were sought (emerging irrespective of the respondents' current sphere of activity, age, birthplace, wealth or other similar factors) which could have been essential in the development of these personalities. It was revealed that all respondents bar one (B) have grown up in a two-parent family environment (5) or even in an extended family (6) with grandparents and other relatives living together while one respondent has grown up in a two-grandparent family. The majority of respondents (9) emphasise the favourable social environment of their family and characterise it as friendly, favourable, caring and secure. Most respondents have perceived the significance of natural environment and describe it in emotional and varied terms, which may suggest belonging to it (6). The people in the surrounding environment are characterised as industrious in the life stories by the majority of respondents (11). Rural lifestyle for most respondents (8) has been related to work in early childhood while for the rest – with performing certain duties. However, many respondents (9) emphasise that they have always found time for uninhibited development on their own. The majority of respondents (8) have been related to the environment of domestic animals; two respondents describe it so emotionally that it should suggest a sense of belonging. Half of respondents have had their parents or other relatives organise a special environment for upbringing. Six respondents describe their environment as a company of intellectual people who find joy of reading (book as a value), telling fairy tales and cultivating their ethnic culture. Six respondents mention the environment of childhood games. It follows from five respondents' replies that they have experienced an unfavourable socio-political environment and poor economic conditions. Other common features of the environment mentioned by the respondents are observing their parents' work (5) as well as the functionally aesthetic organisation of the environment (4).

It is impossible to learn from the life stories what role was played by a certain environment in the interviewees' personal development. The study confirms that the respondents' memories are not limited to only emotionally pleasant and carefree moments from their childhood. Quite the contrary, they speak extensively, insightfully and without reproach about duty, child labour, frugality and sometimes downright harsh living conditions. Only two respondents describe a distinctly idealistic environment (it is interesting that the same respondents had the environment of humour devotees), also the environment of refugee camps, direct warfare and mutual help of neighbouring homesteads (for one respondent each). Yet the emotional and detailed description of these environments by the interviewees testifies to their great significance.

The respondents' values orientations are characteristic of talented people as perceived by Sternberg (2003). The respondents have ascertained themselves not only as gifted personalities but also as such who are able to fulfil their talents. Application of Sternberg's WICS model for identifying talented people to the data set permits to identify several corresponding traits in the characteristics of basic values among the respondents. Sternberg's

labels are I for intellect, C for creativity, W for wisdom and S for synthesis. The basic value of truth for most respondents is revealed as *manifested inquisitiveness (I, C)* which is satisfied by *watchfulness (W, I, C)*. The acquired knowledge for discovering the truth is also *evaluated (I, C)*. Inquisitiveness is based on certain *interests (I)*. Four respondents exhibit distinct diversity of interest. Part of respondents have searched for truth intentionally, *investigating (I, C)* things or processes around them and even *experimenting (I, C)*. The majority of the respondents have grown up in an *intelligent (I)* environment which has provided specific conditions for upbringing or education. It has secured the development of *imagination (C)* and facilitated a *sense of beauty (C, W)*. Five of the respondents learned to read and write at the age of 4–5 and discovered *book as a value (I)*. They discovered *decency (W), ideals (I)* and *will (I)* to live up to them as well as *self-criticism (W)*. The basic value of serving is revealed for most respondents in their *active position in life (W, I)* which is marked by distinct *industriousness (I)*. This may have been facilitated by the *early employment environment* and assuming *co-responsibility (W)* for making a living for the family. Industriousness facilitated acquisition of *various work skills (I)*, developed *persistence (I)* and *determination (I)*, but in novel situations of independent work – promoted *initiative (W, I)* and *creativity (W, I)*. The group of respondents is characterised by the *wish to help (W)* or *do something good (W)*. For two respondents it is manifested in the *ability to make sacrifices (W)* and *in bravery (W)*. The basic value of peace for most of respondents is manifested in striving for *reflection (I)*, facilitated by the necessity to be *independent (I)* and an opportunity to be *on one's own (I)*. Childhood environment has sustained conditions for *modesty (W), self-development (W, C, I)* and *self-assurance (I)*. Five respondents hold *security (I)* as an important component of life. Some respondents manifest the basic value of *peace* in an *ability to overcome hardship (I)*, *endurance (I)* and *faith in goodness (W, I)*. The respondents find important internal balance – *calmness (W), order (W, I, C)* and *discipline (W, I)*, which may well have been at the basis of their *ability to concentrate, persistence (I)* and *endurance (I)*. The basic value of *non-violence* for most of the respondents (10) is revealed through the categories of *freedom (W, I)* and *bravery (I) opposing injustice (W)* and *defending truth (W)*. *National awareness (W, I)* has not facilitated intolerance vis-à-vis other nations in the multicultural society of Latvia; quite the contrary, *tolerance (W, I)* and *sympathy (W)* even towards the enemy are revealed. The category of *health (W, C)* emerges as important (6); some emphasise conditions of *physical fitness (W, C)*. This does not mean, however, that the rest of the respondents consider them insignificant; early employment and living conditions in rural homestead and/or in proximity to nature obviously facilitated both *physical fitness* and *healthiness* (none of respondents mention experiences of illness in their life stories). Some respondents evidence the basic value of non-violence with such categories *as respect (W, I), ability for inclusion (I), sense of humour (W)*. For all respondents, the basic value of *love (S)* emerges through friendliness, emotionality, sympathy, kindness, readiness to help or care. For some it is more revealed in love for parents and for others such as animals or nature on the whole. Love emerges as a background of synthesis without which self-ascertainment of a talented person is impossible in those environments that manifest love.

Analysis of the respondents' values orientations in their early childhood reveals only a few categories which characterise the shared values orientation among all the respondents: *emotionality* and *activeness* manifested for some in a distinct *joy of movement*. Several respondents appear to possess *independence, watchfulness, imagination, inquisitiveness, ability to evaluate, creativity, cordiality, kindness* and *sympathy*.

Gebserian (Neville, 1999) model of consciousness accounts for the revelation of desired values orientation in early childhood. Archaic consciousness is a state when an individual is not differentiated from the environment. Children in their early childhood probably find this state very active; hence, they easily identify themselves with the environment and its values. This makes it difficult to separate the values characteristic of the child from those generated by the environment. Yet perhaps there is even no point in trying to, because identification means belonging to what one identifies with. Therefore, it is important what the values orientation of the environment is – if the values are positive, the child identifies with them; otherwise environmental (societal) pathology becomes the child's pathology.

Another Gebser's idea is important in this regard. It is crucial that an individual's meaning of life be connected to the archaic consciousness. Probably therefore children are better aware of those interests which, in favourable conditions of further development, may form the basis of self-ascertainment. Archaic consciousness is marked by *uncertainty*, which impedes the ability to clearly discern the individual's meaning of life and casts a veil on the memory of early childhood in general. In later stages in life, our rational consciousness often suppresses the *uncertainty* in the archaic consciousness, and the majority of youth lose the bond with intrinsically motivated interests, perceiving those offered from outside as their own (NVA [Nodarbinātības valsts aģentūra (State Employment Agency)], 2005; Paspārne, 2007). These youths no longer match the criteria of Sternberg's model of a talented person or the *unproductive* orientation discussed by Fromm (Фромм, 2010).

Going back to early childhood, it must be noted that our research reveals a dominant affection to natural environment. Children's belonging to it lets them feel it as a source of strength and creativity. Therefore, the sense of belonging to the environments identified among the respondents and described above cannot be considered as too daring. Empathy is in fact based on Gebser's sense of the unity of 'all that exists'. Deep affection to family, home, people and natural environment is still a natural phenomenon in the contemporary world of the dominant mental awareness; the respondents appear to manifest it to such a strong degree that we may actually call it love.

The principle of complementarity of opposites, apart from *uncertainty* of archaic consciousness, makes one look for the manifestations of *certainty*. Several respondents emphasise their ability already in their early childhood to *clearly* distinguish the good from the bad, truth from lie, honesty from dishonesty. The respondents hold in high regard the *positive* things that they usually actively stood in for.

Archaic consciousness makes one feel deep unity with his or her family members or ethnic community. In his analysis of the Gebserian model of consciousness Neville calls it a primitive urge, most probably devoid of the connotations of scorn and unacceptability, because it exists in the very initial level of consciousness. Self-realisation may take place only under conditions of belonging (Maslow's components of the pyramid of belonging). Those respondents who have experienced belonging to school have found an opportunity to express themselves and recall school years with pleasure. Rather than school uniforms or common school rituals, it is accord between the individual's intrinsically motivated interests and the environment that forms conditions for harmony. In cases when this came true, the respondents felt happy.

In the period of mythical consciousness, the "I" emerges as separated from the environment. Yet it remains related to family, community and its notions of the world. The time of mythical consciousness does not cease to exist – it functions as the basis of the

birth of an unproductive human in the age of mental consciousness because the objects of rational culture still hold a significant place on the scale of human values orientation. Mythical consciousness is in fact sustained by school systems which offer clichés of truth, justice and values generated and sustained by a wider community (they are stated by the scientific thought, accepted by the masses and are thus unquestionable). The respondents cannot but let them show – they enter the process of socialisation as the attributes of their cultural environment. However, owing to conditions of uninhibited development, early practice of independent work which creates conditions for self-development and individual experience, teaches to analyse new situations of work, forces to make independent decisions, i.e. develop attributes of *reason*. As a result, the above mentioned clichés of 'truth' are not consolidated into one's mental consciousness – the respondents are comparatively free personalities. The research shows that most respondents, despite their early developed intellect, highly value emotions, imagination and reflection – they do not become selfish (or else go through this phase quickly); they seem to be aware of their ego, but they also see its unity with outside objects. That is, they do not fall victims to rational consciousness. Therefore they are referred to as individuals not in the sense of selfish, egocentric beings, but as personalities who are aware of their individual interests and abilities, and try to live accordingly.

CONCLUSION

The respondents' values orientation is balanced according to Bala's (2006) five basic general human values and corresponds to Sternberg's (2003) model of talented people.

Values-oriented environments in folk pedagogy previously and nowadays could and still can secure developmental conditions necessary for personal self-ascertainment.

There exists a distinct line of demarcation between pre-school and school childhood.

Folk pedagogy positions, both present and prior, prove their sustainability (Роде, 2012). Therefore, its environments and methods ought to be transferred to the school environment, for instance, natural environment, work environment, opportunity for uninhibited development, recognising children's talents and adjusting learning to their interests, the environment of actual cooperation (possible in the situation of mutual respect), etc. Folk pedagogy environments are organically and so powerfully related to the child's personality that the child feels a sense of belonging to them and happiness if the social environment is friendly, benevolent, caring and secure. School environment ought to be the same. In this case, the traits suggested by Sternberg (2003) and identified in the respondents could be methodically developed in learners because they are necessary for an individual's self-realisation, for instance, ability to overcome obstacles, persistence, readiness to withhold enjoyment or readiness for lengthy work, readiness to take risks, ability to admit obscurity and love one's work, bravery, etc.

Sternberg's (2003) WIC synthesis needs the general human category of love described by Bala (2006) with its characteristic manifestations. It is essential to facilitate the development of a new, still latent integral awareness, which would enable individuals to perceive things in totality rather than dislocated in space or time (Neville, 1999). This will be a step towards a totally new model of education based on the learner's self-activity, constant self-organisation of the school in the diversity of 'all that exists', as described by Gebser.

REFERENCES:

Anspoka, Z., & Siliņš-Jasjukeviča, G. (2010). *Novada tradicionālā kultūra izglītībā: situācijas izpētes rezultāti* [Traditional regional culture in education: Results of a case study]. Retrieved July 25, 2011, from www.rpiva.lv/pdf/5_starpt_zin_konf.pdf

Apine, A., & Roga, V. (2010). *Klienta identitātes transformācija sociālā darba procesā* [Transformation of customer's identity in the process of social work]. Retrieved July 25, 2011, from http:/www.nacionalaidentitate.lv

Augškalne, I., & Garjāne, B. (2010). *Pasaules uzskata implikācija izglītībā* [Implication of world view in education]. Retrieved July 25, 2011, from www.rpiva.lv/pdf/5_starpt_zin_konf.pdf

Bala, C. (2006). *Education in human values (Ehv): An experience*. Retrieved October 9, 2009, from http://www.geocities.com/penyelidikanm4p/

Drake, C. (2007). *The importance of a values-based learning environment*. Retrieved September 10, 2009, from http://www.livingvalues.net/pdf/Drake_JME_Moral_Ed_Day_2007.pdf

Geske, A., Grīnfelds, A., Kangro, A., & Kiseļova, R. (2010). *Ko skolēni zina un prot – kompetence lasīšanā, matemātikā un dabaszinātnēs, Latvija OECD valstu Starptautiskajā skolēnu novērtēšanas programmā* [What learners know and can do – competence in reading, mathematics and natural science, Latvia in the OECD programme for international student assessment]. Retrieved April 29, 2011, from http://www.ppf.lu.lv/v.3/eduinf/files/2010/gramataII.pdf

Kuurme, T., & Carlsson, A. (2010). The factors of well-being in schools as a living environment according to students' evaluation. *Journal of Teacher Education for Sustainability, 12*(2), 70–88.

Lieģiniece, D. (2009). Bērnu uzvedības problēmu cēloņi: Rietumvalstīs veiktu pētījumu analīze [Causes of children's behavioural problems: Analysis of Western research]. *Latvijas Universitātes raksti. Pedagoģija un skolotāju izglītība, 747* (pp. 124–132). Rīga: Latvijas Universitāte.

Neville, B. (1999). Towards integrality: Gebserian reflections on education and consciousness. *Encounter: Education for Meaning and Social Justice, 12*(2), 4–20.

NVA (Nodarbinātības valsts aģentūra). (2005). *Absolventu – bezdarbnieku aptauja* [Survey of the unemployed graduates]. Retrieved December 6, 2011, from nva.gov.lv/.../1125056498Absolventu-bezdarbnieku%20aptaujas%2

Orska, R. (2006). *Sociālās vide ietekme uz skolēnu uzvedību*. [Impact of social environment on learners' conduct]. Retrieved July 25, 2011, from www.ru.lv/res/fak/ped/pspi/zinraksti/2006/rita_orska.pdf

Paspārne, G. (2007). *Pētījuma par 8. un 11. klašu skolēnu profesionālajiem nodomiem un priekšstatiem par profesijām* [Investigation of the professional intentions and notions about professions of 8th and 11th Form learners]. Retrieved November 6, 2011, from http://equal.lsif.lv/faili/rezultati/Skolenu_prof_plani_salidzinajums.pdf

Rode, O. (2010). Values education in Latvia and its relationships with the dimensions of sustainable society. In *Abstracts of the 8th international JTEFS/BBCC conference "Sustainable Development. Culture. Education"* (p. 94). Daugavpils: Saule.

Sternberg, R. (2003). WICS as a model of giftedness. *High Ability Studies, 14*(2), 109–137.

Роде, О. (2012). Компоненты долгосрочного образования в народной педагогике [Components of long-term education in folk pedagogy]. *Культура. Наука. Интеграция* [Culture. Science. Integration], *1*(16), 3–6.

Фромм, Э. (2010). *Бегство от свободы* [Escape from freedom]. Retrieved July 25, 2011, from http://magister.msk.ru/library/philos/fromme01.htm

Towards systemic and integrative research methodology in ESD studies

A contribution to the Finnish validation of the general decision-making style inventory

Cem Oktay Güzeller

Akdeniz University, Turkey

ABSTRACT

The main purpose of the present study was to evaluate the psychometric properties of the Finnish version of the General Decision-Making Style Inventory (GDMS). The psychometric properties of GDMS were evaluated on a sample of 214 students. Confirmatory and exploratory factor analyses showed that the hypothesised 5-factor model provided an acceptable fit for the data. Moreover, values for convergent validity, item reliability, construct reliability and average variance were calculated and, with respect to 5-factor structure, item reliability and construct reliability values were generally provided the required standard. The reliability of the GDMS scales appeared to be satisfactory, with good internal consistency. The GDMS Inventory was found to be reliable and valid for the Finnish context with a few exceptions.

Key words: decision-making style, individual differences, confirmatory factor analysis, Finnish

INTRODUCTION

There are some physiological, psychological and social requirements for an individual to maintain their lives. Positive or negative improvements affect the individual's consistency level in the process of meeting these requirements. In this consistency process, the individual develops some attitudes towards themselves and their environment. Some situations belonging to the individuals – such as their own features, living standards, awareness levels, self-respect, decision-making styles – affect their lives directly or indirectly (Avşaroğlu & Üre, 2007). These features, which differ among individuals, also have an effect on their decision-making behaviour (Shiloh, Koren, & Zakay, 2001).

According to Winterfeldt and Edwards (1986), decision-making is a cognitive process which includes evaluation of situations to choose the acts among the alternatives (Gambetti, Fabbri, Bensi, & Tonetti, 2008). These cognitive processes include many actions, such as information gathering and processing, problem-solving, justifying, memory and learning (Baiocco, Laghi, & D'Alessio, 2009).

The effectiveness of the decision-making process depends on the person making the decision, as method and personality trait are important in the decision-making process (Shiloh et al., 2001). In order for a person to make an effective decision, timing and process are important (Kneeland, 2001), because complex situations render decision-making more difficult. This process becomes a stress factor for the individual and affects their decision-making process in a negative way (Shiloh et al., 2001). If the problems requiring decision-making are fundamental and if the actions are irretrievable, the tension of the individual increases (Phillips, Pazienza, & Ferrin, 1984). Accordingly, the attitude of the individual in the decision-making process and towards the situation is important. An individual's approach towards a decision-making problem and their strategy, including the methods applied, will affect the quality of the decision (Kuzgun, 2000).

While making a decision, alternatives should be listed and they should be related to each other by considering the information, in order to find the appropriate strategy (Gambetti et al., 2008). The individual should apply the following steps while making a decision: identify the problem; list the alternatives for action steps; predict the results for each alternative solution; and choose the best solution (Rebore, 2001). The last step is the application of the taken decision and the evaluation of the results (Adair, 1999).

When people need to make a decision, they react and act differently. Their decision-making style is one of the most important determinants of this decision-making process (Phillips et al., 1984). The best thing for people to do is to make the best decision in line with the conditions and information, and to take new decisions for the conditions that may, possibly, create a problem (Adair, 1999). Individuals who are continually expecting and searching for something new put themselves in a tight spot for using the strategies above in the process of decision-making. Individuals need help in making suitable and effective decisions to enjoy life and improve themselves (Çolakkadıoğlu, 2003).

In particular, researchers advise psychological consultants in schools to help adolescents learn how to make effective decisions (Collins & Onwuegbuzie, 2003). In the decision-making literature, many studies have been conducted, especially to reveal how adolescents make decisions with respect to daily life, choice of academic subject, school and profession, and determine the styles they use while making decisions (Moschis & Moore, 1979; Mann,

Harmoni, Power, Beswick, & Ormond, 1988; Radford, Mann, Ohta, & Nakane, 1991; Scott & Bruce, 1995; Loo, 2000; Brew, Hesketh, & Taylor, 2001; Nota & Soresi, 2004; Lloyd & Berlin, 2007; Gambetti et al., 2008; Baiocco et al., 2009). As a result of these studies, it has been found that the styles adolescents use while making a decision vary according to age, time pressure, situations, socio-economic level and gender. In addition, it has been pointed out that problem-solving (Chartrand, Rose, Elliott, Marmarosh, & Caldwell, 1993), professional maturity (Blustein, 1987), identity status (Kroger, 2003), decision-making strategies (Shen, 2008), perceived parents' attitude (Eldeklioğlu, 1996), self-perception, and their problem-coping level (Galotti, Kozberg, & Gustafson, 2009) are related to the decision-making styles. It has been found that adolescents are affected by their parents, relatives and peers. They want to make the best decision but evade responsibility (Bacanlı & Sürücü, 2006; Brody, Annett, Scherer, Turner, & Dalen, 2009). For that reason, individual decision-making approach, strategies and styles they use when making decisions come into prominence.

According to Nunnally and Bernstein (1994), while the first theoretical explanations of decision-making styles focused more on behaviours than general features, some researchers focused on the information that the individual gathered and how they processed that information (Kline, 1999). According to Scott and Bruce (1995), when individuals gather information for the decision-making process, they use established cognitive styles as a base to internalise and separate this information (Dilmaç & Bozgeyikli, 2009).

According to relevant literature, the reaction and action styles of a person who is in the process of giving a decision are described as decision-making styles (Phillips et al., 1984). According to Scott and Bruce (1995), decision-making styles are familiar reaction forms of an individual in a decision-making process. Decision-making styles are not characteristic features; they are the habits that have significant impact on the content of the decision (Brew et al., 2001). According to Driver, Brousseau and Hunsaker (1990), the decision-making style is a learned habit and, when reaching a decision, the differences between the definition of the choice and the information processing during the decision-making are key.

Decision-making style theories are split into three categories: those based on rational thinking; those based on intuitional thinking; and those based on defining the effects of the decision-making processes (Brew et al., 2001). Different decision processes are used for apparently similar conditions (Nutt, 1990). According to Deniz (2004), in the process of decision-making, individuals use meticulous, tentative, panic styles and postpone decision-making style (Izgar & Yılmaz, 2007). According to Brew, Hesketh and Taylor (2001), individuals use easiness/carelessness (allowing the situations to be solved automatically or following previous experiences regardless of the other alternatives), avoidant style (avoiding or postponing conflict/dilemma created by evading responsibility), hypervigilance (this decision-making style has emerged lately; it is common in indecisive and panicky situations) and alert/prudent style (individual is sure of themselves when making an optimistic and right decision; they evaluate the alternatives carefully). According to the Western perspective, the first three styles are inconsistent models when making decisions, while the fourth style is adequate and shows applicable behaviours.

According to Harren's (1979) model, which is studied mostly in relevant literature, there are three different decision-making styles: 'rational' (making decisions by using rationality); 'dependant' (making decisions according to the ideas and recommendations of others); and 'intuitional' (making decisions according to sense and situation). Phillips,

Pazienza and Ferrin (1984) added the 'avoidant' style (tendency to avoid or postpone decision-making) to this model. Scott and Bruce (1995) defined the decision-making style as a general model to respond to the special content of the decision (Baiocco et al., 2009). According to this definition, writers recommend 4 different types of decision-making styles: 'rational' style, searching for information and evaluating the alternatives reasonably; 'intuitive' style, watching the details and tending to depend on sense and situation; 'dependant' style, seeking others' advice and guidance; and 'avoidant', procrastinating style and decision-making. Then, there is the 'spontaneous' style, which is described as a sense of intimacy/immediateness, while the need to finish the decision-making process as quickly as possible comes out as the fifth style. Spontaneous style emerged from the analysis of 'General Decision-Making Scale' (GDMS) which was improved for the first time by Scott and Bruce (1995). This factor was characterised as completing the willingness and intimacy sense by the decision-making process (Loo, 2000). This scale was designed to identify suitable decision-making styles for the individual. The GDMS has 25 items and assesses each of the five hypothesised decision-making styles which are, according to the authors, independent but not mutually exclusive. As a matter of fact, people could use a combination of different styles in decision-making. According to the writers, each of the styles are independent, but they are not private. An individual can use different styles in the process of decision-making (Gambetti et al., 2008).

Scott and Bruce have validated the GDMS on a sample of 1943 participants (including soldiers, students, engineers and technicians) demonstrating good internal consistency and factor stability. Several studies have been conducted to further validate the GDMS (Loo, 2000; Thunholm, 2004; Spicer & Salder-Smith, 2005). These studies have supported the construct validity of the GDMS and confirmed the good psychometric properties of the tool. The English GDMS version showed quite adequate internal-consistency reliability (Cronbach's alpha ranged between .65 and .85 for Rational scale, .78–.84 for Intuitive scale, .62–.86 for Dependent scale, .78–.94 for Avoidant scale and .77–.87 for Spontaneous scale (Scott & Bruce, 1995; Loo, 2000; Thunholm, 2004). As regards factorial structure of GDMS, confirmatory factor analyses showed a not so perfect fit to the data: v2/df from 1.80 to 2.68; CFI from .78 to .85; RMSEA from .06 to .09; AGFI .78 (Loo, 2000; Thunholm, 2004; Spicer & Salder-Smith, 2005). Thus, the main purpose of the present work was to evaluate the scale reliability and factor structure of GDMS, such as its inter-correlations among the style scores. Furthermore, Scott and Bruce (1995), Loo (2000), and Spicer and Salder-Smith (2005) validated the tool on young student samples. Consequently, our sample was made up of Finnish students, in order to give evidence about the importance of decision-making styles in students.

METHOD

Participants
The Finnish GDMS version was administered to 214 students at the University of Kajaani (mean age = 22.13; SD = 2.80, range = 18–36). There were 124 females (mean age = 21.54; SD = 2.11) and 90 males (mean age = 22.93; SD = 3.38). Data-deficient extreme values in the data set were examined and 11 people were not included in the analysis.

Instruments

The GDMS is a self-administered questionnaire, initially composed of 37 items and then reduced to 25 items (Scott & Bruce, 1995). GDMS measures five decision-making styles: rational, intuitive, dependent, avoidant and spontaneous. The instrument has 25 items (5 items for each dimension) rated on a 5-point Likert-type scale ranging from 'strongly disagree' to 'strongly agree'. The GDMS has been shown to be a reliable and valid scale for assessing decision-making style. Reliability (Cronbach's alphas) for the different dimensions varies between .62 and .87, and patterns of correlations with values, measure of social relations, work conditions and other variables, provided convergent validity support for the GDMS (Scott & Bruce, 1995; Loo, 2000; Thunholm, 2004; Spicer & Sadler-Smith, 2005; Gambetti et al., 2008; Baiocco et al., 2009).

The Finnish GDMS version was a translation of the original questionnaire. The accuracy of translation was verified by a back version from Finnish to English, done by three native English speakers. Afterwards, the original and back versions were compared to refine the Finnish form. The prepared form was applied to voluntary students in their free time out of lessons.

Data analysis

When the structural validity of the scale was tested, exploratory and affirmative factor analyses were made. Confirmatory Factor Analysis (CFA) was performed to determine the appropriateness of Scott and Bruce's 5-factor model (LISREL 8.7; Jöreskog & Sörbom, 2004). Convergent validity and discriminant validity were evaluated by composite reliabilities, and average variances extracted (AVE) by utilising the results of the Confirmatory Factor Analysis. A Principal Component Analysis was performed using Kaiser's criterion (Eigenvalue > 1), followed by a Varimax rotation. The internal consistency of the overall scale and subscales was measured by Cronbach's alpha coefficient.

Before the analysis was made, the data were examined to see whether they have univariant normal distribution, and the results showed a univariant normal distribution, because the skewness and kurtosis values placed themselves within the range -1.0 and +1.0 (Muthén & Kaplan, 1985). The skewness values ranged from -.97 to +.72, while the kurtosis values ranged from -.98 to +.97. In addition, with purpose view tp detecting whether there was a multicolinearity problem, correlations between the variables were examined, and it was observed that correlation values changed between -.33 and .69. If the correlation values are .90 (Tabachnick & Fidell, 2001) and under, it means there is no multicolinearity problem.

RESULT

Confirmatory factor analysis

The evaluation of model fit was performed by using CFA. In order to perform the CFA, LISREL 8.7 was used and the model parameters were estimated by using maximum likelihood (Jöreskog & Sörbom, 2004). LISREL 8.7 provides a full range of goodness-of-fit measures. The three types of overall model fit measures useful in CFA can be represented by absolute, incremental and parsimonious fit (Schumacker & Lomax, 1996). Maximum likelihood estimates were calculated from covariance matrix and several fit indexes

were computed. In order to evaluate the absolute fit X2 (minimum fit function test), the Root Mean Square Error of Approximation (RMSEA), Goodness of Fit Index (GFI) and Standardised Root Mean Square Residual (SRMR) were used. Adjusted Goodness of Fit Index (AGFI), Normed Fit Index (NFI), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), were used as incremental fit measures.

The results showed that the probability levels of all X2 statistics were less than .01, indicating a rather poor absolute fit (Timm, 2002). X2 value generally gives reasonable value in big samples (Byrne, 1994). Therefore, instead of using the X2 value alone, the rate of the calculated X2 value to the degree of freedom is recommended. The required condition is that this ratio is smaller than (X2/df) 3 (Bollen, 1989). The results showed that the X2 value (X2 = 297.40, SD = 219, X2/df = 1.36, p = .000) is meaningful. For consistency indices GFI (0.87), AGFI (0.83), NFI (0.90), TLI (0.96) and CFI (0.97) values bigger than .90 are a good condition (Hair, Anderson, Tapham, & Black, 1998; Kline, 2005). For RMSEA (0.046) and SRMR (0.076) values need to be lower than .08 (Anderson & Gerbing, 1984; Hu & Bentler, 1999). The values determined in this study indicated acceptable compliance. The results supported Scott and Bruce's Confirmatory Factor Analyses. The item-factor loading estimates, estimated error variances and the values are shown in Table 1.

Table 1. Confirmatory factor analysis: Maximum likelihood estimates

No	Factor Loading Estimates	t-Values	Estimated Error Variances
6	.78	11.78	.41
14	.77	11.70	.39
19	.90	15.01	.18
21	.90	15.12	.49
23	.73	10.76	.49
9	.65	8.75	.58
15	.87	12.92	.24
20	.73	10.29	.47
24	.76	10.89	.42
5	.53	6.54	.72
10	.74	9.65	.45
18	.68	8.78	.53
22	.66	8.44	.57
1	.67	8.94	.55
3	.42	5.23	.82
12	.73	9.78	.47
16	.77	10.52	.41
17	.44	5.39	.81
4	.57	6.98	.68
7	.66	8.33	.56
11	.20	4.92	.96
13	.54	6.57	.71
25	.53	6.49	.72

As a result of CFA factor loading, t-values and error variances were examined. When t-values were examined with respect to t-loads, it was confirmed that two items (in the Dependent style dimension 'I rarely make important decisions without consulting other

people' (item 2) and in the Spontaneous style dimension 'When making decisions, I do what feels natural at the moment' (item 8) did not give the reasonable t-value, and these items were excluded from the analysis. Obtained factor loads are observed to change between (α) .20 and .90. By considering the absolute value of these values, they are required to exceed .10. If the value is smaller than .10, it is called 'small effect'; if it is around .30, it is called 'middle effect'; and if it is above .50, it is called 'big effect' (Kline, 2005). According to this situation, factor loads can be said to have big effect except for three items. When t-values were examined with respect to factor load, it was observed that all items had reasonable t-values (Table 1). When all obtained results were examined as a whole, all items included in the model showed consistency with the model.

Convergent validity

For the convergent validity, item reliability advised by Fornell and Larcker (1981), construct (composite) reliability and average variance extracted values were calculated. Item reliability indicates the amount of variance in an item as a result of the underlying construct rather than error. Either an item reliability of at least .50, or a significant t-value, or both, observed for each item, is considered to be evidence of convergent validity (Chau, 1997). As seen in Table 1, all t-values of the items were significant and all item reliabilities were greater than .50, except for three items.

The average variance extracted (AVE) value of 0.50 and above is accepted as a signal of convergent validity (Fornell & Larcker, 1981; Bagozzi & Yi, 1988). AVE values were calculated for all five dimensions, and they were three dimensions lower than .50 (Table 2).

Table 2. Descriptive statistics, construct reliabilities, AVE, reliability, squared correlations and correlations between subscales

Subscales	M	SD	Construct Reliability	AVE	α	1	2	3	4	5
Avoidant	2.65	.90	.91	.67	.90	-	.17*	.30**	.20**	-.36**
Spontaneous	2.95	.93	.84	.57	.88	.03	-	-.02	.29**	-.49**
Dependant	3.66	.57	.75	.43	.71	.09	.00	-	.15*	.07
Intuitive	3.81	.51	.75	.39	.70	.04	.09	.02	-	-.29**
Rational	3.74	.61	.63	.28	.70	.13	.24	.00	.08	-

Note: The values on the diagonal indicate Pearson correlation coefficients between subscales
*p < .05
**p < .01

The reliabilities of the GDMS dimensions were assessed by Cronbach's coefficient and each dimension's item-total correlations. Here acceptable criteria were ≥ .70 for Cronbach's coefficients (Nunnally & Bernstein, 1994; Hair et al., 1998).

Subscale correlations change between -.49 and .29. The pattern of correlations among the five scales revealed that the rational scale was negatively correlated with avoidant, intuitive, spontaneous styles and there is not a negative relation between spontaneous scale and dependent scale. Correlations between other subscales are positive.

Discriminant validity

Discriminant validity shows the degree of divergence between dissimilar constructs. In this study, discriminant validity was tested by using Fornell and Larcker's (1981) method which has a lower tolerance. Fornell and Larcker (1981) suggested that discriminant validity can be evaluated by comparing the squared correlations between two constructs with their respective AVE. Discriminant validity is demonstrated if the AVE of both constructs is greater than their squared correlation. Calculated squared correlations are given in Table 3. According to the results, discriminant validities were demonstrated.

Table 3. Exploratory factor analysis (Varimax rotation) of the GDMS items

No	Item	F1	F2	F3	F4	F5
21	I often put off making an important decision	.900				
19	I postpone decision-making whenever possible	.879				
6	I put off making decisions because thinking about them makes me uneasy	.791				
14	I avoid making important decisions until the pressure is on	.788				
23	I generally make important decisions at the last minute	.755				
24	I make quick decisions		.864			
15	I often make impulsive decisions		.840			
9	I generally make snap decisions		.835			
20	I often make decisions on the spur of the moment		.725			
12	When making a decision, I trust my inner feelings and reactions			.810		
16	When making decisions, I rely upon my instincts			.728		
1	When I make decisions, I tend to rely on my intuition			.671		
3	When I make decisions, it is more important for me to feel the decision is right than to have a rational reason for it.			.549		
17	I generally make decisions that feel right to me			.450		
7	I make decisions in a logical and systematic way				.686	
13	When making a decision, I consider various options in terms of a specified goal				.658	
25	I usually have a rational basis for making decisions				.568	
4	I double-check my information sources to be sure I have the right facts before making decisions				.528	
11	My decision-making requires careful thought				.520	
22	If I have the support of others, it is easier for me to make important decisions					.821
10	I like to have someone steering me in the right direction when I am faced with important decisions					.725
5	I use the advice of other people in making my important decisions					.717
18	I often need the assistance of other people when making important decisions					.573

F1: Avoidant   F2: Spontaneous   F3: Dependant   F4: Intuitive   F5: Rational

Exploratory factor analysis

An Exploratory Factor Analysis (EFA) was carried out in order to complement the findings from the CFA (Gorsuch, 1997), as well as to check the structure of GDMS. The extraction method of factors was Varimax rotation. Items with a factor loading with at least .40 were used in interpreting the factors. These five factors, which were rotated through the Varimax procedure, explained 61.59% of the variance (Table 3). Factor 1 (5 items) accounted for 24.33% of the variance and measured interference with Dependent style. Factor 2 (4 items) accounted for 14.14% of the variance and measured salience and Spontaneous style. Factor 3 (4 items) accounted for 9.61% of the variance and measured overindulgence in Dependent style. Factor 4 (5 items) accounted for 8.08% of the variance and measured overindulgence in Intuitive style. Factor 5 (5 items) accounted for 5.43% of the variance and measured overindulgence in Rational style.

DISCUSSION

The main aim of the present study was to make a contribution to the psychometric assessment of the Finnish version of the GDMS inventory. Within this scope, structural validity of the scale was examined with Confirmatory and Exploratory Factor Analyses. The CFA support the 5-factor structure of the GDMS proposed by Scott and Bruce (1995). In our sample, high fit values are given. These results appear to be parallel with the studies of Loo (2000), Baiocco et al. (2009) and Gambetti et al. (2008). In our study, as distinct from the original structure these two items are not included: 'I rarely make important decisions without consulting other people' (item 2) in the Dependent dimension and 'When making decisions I do what feels natural at the moment' (item 8) in the Spontaneous dimension. They both gave low solution value and their t-values were not reasonable, so these items were excluded from the scale. This situation shows a similarity with the Şekercioğlu, Çokluk-Bökeoğlu and Güzeller (2008) study. Similarly, the first research with the Italian version of the GDMS (Baiocco et al., 2009) revealed that two items (8 and 23) in spontaneous style had item-total correlation coefficients lower than .30 on their factor. Baiocco et al. (2009) decided to modify items 8 and 23 because the former showed problems in two studies (Scott & Bruce, 1995; Spicer & Sadler-Smith, 2005), whereas the latter was problematic in another (Loo, 2000). Therefore, in order to obtain higher reliability coefficients and a better content validity, these items have been revised for better comprehension and readability. Item 8 (spontaneous style) has been modified from the original 'When making decisions, I do what seems natural at the moment' (on the spontaneous dimension) to 'When making decisions, I do what I think first'. Item 23 (avoidance style) has been changed from 'I generally make important decisions at the last minute' (on the intuitive scale) to 'I generally make important decisions only if I'm obligated'.

As a result of EFA, it has been observed that the factor load value of items in a 5-factor structure of the GDMS comprising 23 items is .40 and above (Stevens, 1996), and the difference between two factor loads included in two factors is .10 and lower (Hinkin, 1998; Tabachnick & Fidell, 2001; Büyüköztürk, 2007), while 61.59% of the variance of the 5-factor structure were explained totally. In Baiocco's 2009 study, the five dimensions formulated to define the construct of decision-making style were confirmed after factor analysis and

accounted for 56.3% of the post-rotational variance: all five items of each style were loaded on the same factor with a correlation of at least 0.40.

The Convergent validity of the scale, item reliability, construct (composite) reliability and average variance values were calculated and examined. Item reliability and construct reliability values with respect to the obtained 5-factor structure provided the required standard. The average variance extracted (AVE) value was higher than the required in two sub-dimensions, and lower than required in three sub-dimensions. The obtained values for discriminant validity met the required standard.

The inter-item correlation and the Cronbach's alpha coefficients found in the present sample show acceptable reliabilities of the tool. Loo (2000) explored that the internal-consistency reliabilities (Cronbach's alpha coefficient) were acceptable for all scales except for the dependent (.62) scale, which was low even for a five-item scale. Thunholm (2004) showed that internal consistency reliabilities (Cronbach's α = .65) were adequate for all items except for the rational scale, which was low even for a five-item scale. In the studies of Baiocco et al. (2009), the internal consistency was relatively high for all styles, with the exception of the rational scale (α = .68).

With the exception of a lack of negative correlation between Rational and Avoidant styles (Thunholm, 2004; Gambetti et al., 2008; Şekercioğlu et al., 2008; Baiocco et al., 2009), and finding a positive correlation between Avoidant and Spontaneous styles (Gambetti et al., 2008; Şekercioğlu et al., 2008), the pattern of intercorrelations between the different styles are in line with the pattern reported by Scott and Bruce (1995) and support their conclusion that the styles are not mutually exclusive. Moreover, the negative relationship between Rational and Spontaneous styles potentially indicates that rational decision-makers assess all the alternatives more accurately compared to those of Spontaneous style and, thus, they take much more time to make a decision. On the other hand, the positive relationship between Intuitive and Spontaneous styles (for instance, Loo, 2000; Spicer & Sadler-Smith, 2005; Gambetti et al., 2008), indicates that intuitive individuals are more inclined to decide when under a time pressure (Spicer & Sadler-Smith, 2005). Baiocco et al. (2009) reported that the strongest relationships are among the Spontaneous scale and the Intuitive (r = .46) and Rational (r = -.33) dimensions, while the dependent scale has positive correlation with the Avoidant scale (r = .34). No correlation was found between Rational and Intuitive styles, showing that a rational person can be intuitive too (Baiocco et al., 2009). Finally, we found a positive correlation among Avoidant and both Dependent and Spontaneous scales, meaning that avoidant individuals also tend to search for advice and guidance from others before making important decisions, and/or desire to come through the decision-making process as quickly as possible. These findings are in disagreement with Loo's (2000) view that individuals who need other people's support in order to make a decision do not tend to avoid or procrastinate over their decision-making. It should be pointed out that Spicer and Sadler-Smith (2005) and Thunholm (2004) also found a positive correlation between Avoidant and Dependent styles, and the former also found a positive correlation between Avoidant and Spontaneous scales. It can be speculated that people who tend to avoid problems and procrastinate over decisions lack personal certainty. In such terms, they could defer to others' opinions when it is possible to do so, because they feel uncertain. At the same time, when making a decision cannot be avoided or it is not possible to consult others, avoidant individuals could rely on a different strat-

egy: deciding as quickly as possible in order to end the uncertainty (for instance, Bensi & Giusberti, 2007). As Driver, Brousseau and Hunsaker (1990) pointed out; individuals have a dominant style even if they tend to use more than one decision-making style (Baiocco et al., 2009).

CONCLUSION

Based on the results of CFA, convergent validity, discriminant validity and EFA, it can be concluded that the 5-factor structure of GDMS comprising 23 items is a valid model for Finnish university students and performs a dependable measurement.

Some limitations to the study must be pointed out. First, the relationship defined in the study is correlation and not causal. Second, all data were collected using self-reporting questionnaires that are influenced by social desirability. Studies using behavioural decision-making measures, observational data and other report methodologies to assess behaviours could be very useful for this topic.

The present study focused on decision-making style in a sample of university students. A longitudinal study would provide perspective and generate data on changes in GDMS and cognitions across the years. The lack of racial and ethnic diversity in this sample also limits the generalisations one can make with regard to the findings. Replication of the research on groups with different demographic characteristics might be another possibility for further research.

Finally, within the scope of GDMS validity studies, standard validity can be tested by observing its relationship with other scales developed to detect the related structures.

REFERENCES:

Adair, J. (1999). *Decision-making and problem solving strategies, Great Britain and United States*. London and Philadelphia: Kagan Page.

Anderson, J. C., & Gerbing, D. W. (1984). The effect of sampling error on convergence, improper solutions, and goodness-of-fit indices for maximum likelihood confirmatory factor analysis. *Psychometrika, 49*, 155–173.

Avşaroğlu, S., & Üre, Ö. (2007). A study on self-esteem, decision-making and styles of overcoming the stress of university students in terms of self-respect and some variables. *Journal of Selcuk University Institute of Social Sciences, 18*, 85–100.

Bacanlı, F., & Sürücü, M. (2006). An examination of the relationship between test anxiety and decision-making styles of elementary school 8th grades students. *Educational Administration: Theory and Practice, 45*, 7–35.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*(1), 74–94. DOI: 10.1177/009207038801600107.

Baiocco, R., Laghi, F., & D'Alessio, M. (2009). Decision-making style among adolescents: Relationship with sensation seeking and locus of control. *Journal of Adolescence, 32*(4), 963–976. DOI: 10.1016/j.adolescence.2008.08.003.

Bensi, L., & Giusberti, F. (2007). Trait anxiety and reasoning under uncertainty. *Personality and Individual Differences, 43*(4), 827–838. DOI: 10.1016/j.paid.2007.02.007.

Blustein, L. D. (1987). Decision-making styles and vocational maturity: An alternative perspective. *Journal of Vocational Behavior, 30*(1), 61–71. DOI: 10.1016/0001-8791(87)90026-1.

Bollen, K. A. (1989). *Structural equations with latent variables*. New York, NY: John Wiley & Sons.

Brew, F. P., Hesketh, B., & Taylor, A. (2001). Individualist-collectivist differences in adolescent decision-making and decision styles with Chinese and Anglos. *International Journal of Intercultural Relations, 25*(1), 1–19. DOI: 10.1016/S0147-1767(00)00039-0.

Brody, J. L., Annett, R. D., Scherer, D. G., Turner, C., & Dalen, J. (2009). Enrolling adolescents in asthma research: Adolescent, parent, and physician influence in the decision-making process. *Journal of Asthma, 46*(5), 492–497. DOI: 10.1080/02770900902866768.

Büyüköztürk, Ş. (2007). *Sosyal bilimler için veri analizi el kitabı* [Handbook for social science data analysis]. Ankara: Pegem A Publications.

Byrne, B. M. (1994). *Structural equation modeling with EQS and EQS/Windows: Basic concepts, applications and programming*. Thousand Oaks, CA: Sage.

Chartrand, J. M., Rose, M. L., Elliott, T. R., Marmarosh, C., & Caldwell, S. (1993). Peeling back the onion: Personality, problem-solving, and career decision-making style correlates of career indecision. *Journal of Career Assessment, 1*(1), 66–82. DOI: 10.1177/106907279300100107.

Chau, P. Y. K. (1997). Reexamining a model for evaluating information center success using a structural equation modeling approach. *Decision Sciences, 28*(2), 309–334. DOI: 10.1111/j.1540-5915.1997.tb01313.x.

Collins, K. M. T., & Onwuegbuzie, A. J. (2003). Study coping and examination-taking coping strategies: The role of learning modalities among female graduate students. *Personality and Individual Differences, 35*(5), 1021–1032. DOI: 10.1016/S0191-8869(02)00315-X.

Çolakkadıoğlu, O. (2003). *The adaptation of an adolescent decision-making questionnaire for the Turkish population*. Unpublished Master thesis, Çukurova University, Adana, Turkey.

Deniz, M. E. (2004). Investigation of the relation between decision-making, self-esteem, decision-making styles and problem-solving skills of university students. *Eurasian Journal of Educational Research, 4*(15), 23–35.

Dilmaç, B., & Bozgeyikli, H. (2009). A research on subjective well-being and decision-making of teacher candidates. *Erzincan Education Faculty Journal, 11*(1), 171–187.

Driver, M. J., Brousseau, K. R., & Hunsaker, P. L. (1990). *The dynamic decision maker: Five decision styles for executive and business success*. New York, NY: Harper and Row.

Eldeklioğlu, İ. (1996). The relationship between parental attitudes and decision-making strategies. *Turkish Journal of Counselling and Guidance, 11*, 7–13.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39–50. DOI: 10.2307/3151312.

Galotti, K. M., Kozberg, S. F., & Gustafson, M. (2009). Goal setting and decision-making by at-risk youth. *Prevention Researcher, 16*(2), 17–20.

Gambetti, E., Fabbri, M., Bensi, L., & Tonetti, L. (2008). A contribution to the Italian validation of the General Decision-Making Style Inventory. *Personality and Individual Differences, 44*(4), 842–852. DOI: 10.1016/j.paid.2007.10.017.

Gorsuch, R. L. (1997). Exploratory factor analysis: Its role in item analysis. *Journal of Personality Assessment, 68*(3), 532–560. DOI: 10.1207/s15327752jpa6803_5.

Hair, J. F., Anderson, R. E., Tahtam, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Harren, V. A. (1979). A model of career decision making for college students. *Journal of Vocational Behavior, 14*(2), 119–133. DOI: 10.1016/0001-8791(79)90065-4.

Hinkin, T. R. (1998). A brief tutorial on development of measures for use in survey questionnaires. *Organizational Research Methods, 1*(1), 104–121. DOI: 10.1177/109442819800100106.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1–55. DOI: 10.1080/10705519909540118.

Izgar, H., & Yılmaz, E. (2007). The relation between school managers' self-esteem styles in decision-making and decision-making styles. *Selçuk University Social Science Journal, 17*, 341–351.

Jöreskog, K. G., & Sörbom, D. (2004). *LISREL 8.7: Structural equation modeling with the simplis command language*. Lincolnwood: Scientific Software.

Kline, R. B. (1999). [Review of the book *Psychometric theory*, 3rd ed., by J. C. Nunnally & I. H. Bernstein]. *Journal of Psychoeducational Assessment, 17*(3), 275–280. DOI: 10.1177/073428299901700307.

Kline, R. B. (2005). *Principles and practice of structural equation modeling: Methodology in the social sciences*. New York: The Guilfrod Press.

Kneeland, S. (2001). *Problem çözme* [Problem solving]. Ankara: Gazi Publisher.

Kroger, J. (2003). Identity development during adolescence. In G. R. Adams & M. D. Berzonsky (Eds.), *Blackwell handbook of adolescence* (pp. 205–226). Malden, MA: Blackwell.

Kuzgun, Y. (2000). *Meslek danışmanlığı* [Vocational counselling]. Ankara: Nobel Publication Distribution.

Lloyd, C., & Berlin, L. J. (2007). *Research on adolescent development, competence and character: Adolescent offenders and the line between the juvenile and criminal justice systems*. Retrieved February16, 2011, from http://www.familyimpactseminars.org/s_ncfis03c02.pdf

Loo, R. (2000). A psychometric evaluation of the General Decision-Making Style Inventory. *Personality and Individual Differences, 29*(5), 895–905. DOI: 10.1016/S0191-8869(99)00241-X.

Mann, L., Harmoni, R., Power, C., Beswick, G., & Ormond, C. (1988). Effectiveness of the GOFER course in decision making for high school students. *Journal of Behavioral Decision Making, 1*(3), 159–168. DOI: 10.1002/bdm.3960010304.

Moschis, G. P., & Moore, R. L. (1979). Decision making among the young: A socialization perspective. *Journal of Consumer Research, 6*(2), 101–112.

Muthén, B., & Kaplan, D. (1985). A comparison of some methodologies for the factor analysis of non-normal Likert variables. *British Journal of Mathematical and Statistical Psychology, 38*(2), 171–189. DOI: 10.1111/j.2044-8317.1985.tb00832.x.

Nota, N., & Soresi, S. (2004). Improving the problem solving and decision-making skills of a high indecision group of young adolescents: A test of the 'Difficult: No problem!' training. *International Journal for Educational and Vocational Guidance, 4*(1), 3–21. DOI: 10.1023/B:IJVO.0 000021054.81492.8d.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw Hill.

Nutt, P. C. (1990). Strategic decisions made by top executives and middle managers with data and process dominant style. *Journal of Management Studies, 27*(2), 173–194. DOI: 10.1111/j.1467-6486.1990.tb00759.x.

Phillips, S. D., Pazienza, N. J., & Ferrin, H. H. (1984). Decision making styles and problem-solving appraisal. *Journal of Counseling Psychology, 31*(4), 497–502. DOI: 10.1037/0022-0167.31.4.497.

Radford, M. H. B., Mann, L., Ohta, Y., & Nakane, N. (1991). Differences between Australian and Japanese students in reported use of decision processes. *International Journal of Psychology, 26*(1), 35–52. DOI: 10.1080/00207599108246848.

Rebore, R. W. (2001). *The ethics of educational leadership*. Columbus, OH: Merrill Prentice Hall.

Schumacker, R. E., & Lomax, R. G. (1996). *A beginner's guide to structural equation modeling*. Mahwah, NJ: Lawrence Erlbaum Associates.

Scott, S. G., & Bruce, R. A. (1995). Decision-making style: The development and assessment of a new measure. *Educational and Psychological Measurement, 55*(5), 818–831. DOI: 10.1177/0013164495055005017.

Şekercioğlu, G., Çokluk-Bökeoğlu, Ö., & Güzeller, C. O. (2008). The adaptation and psychometric features of Decision-making Style Inventory for guidance and counselling students in Turkey. *The Nigerian Journal of Guidance and Counselling, 13*(1), 1–12.

Shen, H. (2008). An analysis of word decision strategies among learners of Chinese. *Foreign Language Annals, 41*(3), 501–524. DOI: 10.1111/j.1944-9720.2008.tb03309.x.

Shiloh, S., Koren, S., & Zakay, D. (2001). Individual differences in compensatory decision-making style and need for closure as correlates of subjective decision complexity and difficulty. *Personality and Individual Differences, 30*(4), 699–710. DOI: 10.1016/S0191-8869(00)00073-8.

Spicer, D. P., & Sadler-Smith, E. (2005). An examination of the general decision-making style questionnaire in two UK samples. *Journal of Managerial Psychology, 20*(2), 137–149. DOI: 10.1108/02683940510579777.

Stevens, J. (1996). *Applied multivariate statistics fort he social science* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Boston, MA: Allyn & Bacon.

Thunholm, P. (2004). Decision-making style: Habit, style or both? *Personality and Individual Differences, 36*(4), 931–944. DOI: 10.1016/S0191-8869(03)00162-4.

Timm, N. H. (2002). *Applied multivariate analysis*. New York, NY: Springer-Verlag.

von Winterfeldt, D., & Edwards, W. (1986). *Decision analysis and behavioral research*. New York: Cambridge University Press.

Developing a research methodology towards systemic study in educational research

Harri Pitkäniemi and Petteri Vanninen

University of Eastern Finland, Finland

ABSTRACT

There are several specific studies in educational research dealing with learning process and its relation to different variables in the school context. These 'partial' studies (in Salomon, 'analytic' approach) occupy an essential place in the development of educational research. However, from the point of view of validity (interaction between factors) and practitioners (teachers, educators, administration), educational studies are occasionally required to operate more comprehensively, depending on the research task of the study (in Salomon, 'systemic' approach). We review methodological alternatives as well as study examples capturing the systemic and integrative nature of educational phenomenon in the context of classroom learning. In this paper we will also give an empirical example of our systemic study, which tries to achieve the comprehensive and interactive properties of teaching. At the end of this methodological paper we will elaborate a few research designs which follow the principles of a systemic approach.

Key words: research methodology, educational research, integration, instruction, learning

INTRODUCTION: THE NEED FOR A SYSTEMIC APPROACH IN EDUCATIONAL RESEARCH AND THE TASK OF THIS METHODOLOGICAL PAPER

This is a methodological paper, but the wider topic or phenomenal context is research on teaching and learning in school. In other words, how can we apply a systemic approach in order to provide answers to those problems which are the concern of teaching and learning research? Indeed, there have to be eternal and mutual interactive relations between phenomenon and research methodology, especially when methodological development is set as the primary goal of the examination. The interest of this paper derives from the articles by Salomon (1991, 2006) who describes and compares two main methodological approaches in educational research, the analytic and systemic. Salomon (1991, p. 10) illuminates and contrasts these two varying methodologies in this way:

> *The analytic approach mainly assumes that discrete elements of complex educational phenomena can be isolated for study, leaving all else unchanged. The systemic approach mainly assumes that the elements are interdependent, inseparable, and even define each other in a transactional manner so that a change in one changes everything else and thus requires the study of patterns, not of single variables.*

While Salomon considers both approaches, we will concentrate only on the systemic approach. It is the systemic approach which challenges the educational researcher to consider the methodological needs for understanding the interactive essence of educational phenomena, i.e. 'the whole is more than the sum of its parts'. Naturally, the researcher mostly utilises an analytical approach, especially in quantitatively oriented educational psychology.

We are convinced that both approaches are necessary, as they complement and enrich each other in an essential way. While controlled experiments are concerned with discrete variables and their effects, classroom studies are typically concerned with a holistic setting of interdependent events. Salomon (1991, p. 16) emphasises the differences between the two approaches in the following way: *"The analytic approach capitalizes on precision while the systemic approach capitalizes on authenticity"*. There are a few methodological terms which seem to come close to a systemic approach, but actually their meaning differs. An example of this is the term statistical meta-analysis (see e.g. Haig, 1991, p. 579), because "meta-analysis does not integrate research findings in the constructive sense of combining and systematising parts into larger wholes". When integration refers to an integrative research approach consisting of integration between basic and applied research (Stark & Mandl, 2007), it also differs essentially from the basic idea of 'systemic'.

This methodological dimension of analytic-systemic varies significantly from methodological categories such as qualitative, quantitative and mixed methods approach. While the dimensions of a qualitative-quantitative orientation consist of typical habits, tools, and scientific philosophies fitting to their own conventions – as well as a few similarities between them – analytic and systemic contrast with each other both in terms of (a) the (relational) scope of research focus and (b) in orientation to interactional system. This view underlines the essentiality of interaction, i.e. systemic highlight mutual interaction 'inside the phenomenon of teaching' as well as the interactional character of teaching

'to the outside world'. Teaching, as a phenomenon, is complex, but it does not function in a 'vacuum'. On the contrary it 'lives and breathes again' within social surroundings. Naturally, the scope of 'systemic' in a study will vary, but a systemic approach tries to capture educational phenomenon as a complex, interactive and comprehensive whole, i.e. more or less as a totality. The systemic approach applies to the whole of educational research, but in this paper we focus on teaching, because as a comprehensive concept it gives a reasonable reference point to compare methodological alternatives. This important feature of 'interactional' outlined above relates a systemic approach to the social character of research focus (here e.g. teaching). When considering education, Schoenfeld (1999, p. 8) presents a list of questions concerning "social systems." Taken together, they illuminate education as a social and interactional research phenomenon:

> *The central question here is: Can we develop theoretical understandings and build functional models of complex social systems? Is it possible, for example, to characterize in a precise and detailed way the factors that shape what happens in a school district, in a school, in a classroom? How do we characterize "community forces"? How much, and how, do they matter? What role does school organization play? What about curriculum? What about individual agency? What are points of leverage on the system? When, and in what ways, are which resources likely to make a difference? And most importantly, how do all of these interact?*

Social system can be understood here to have a very wide meaning (e.g. school in a society, sociological view) as well as a more narrow meaning such as studying in classroom teaching or (classroom) learning environment. In either case, it contains at least a few factors and, as a result, they comprise an interactional system. Practically, realisation of a systemic approach in an empiric study leads to a study in which the scope is wide, not a narrow. This wideness, the point of view of totality – mentioned earlier in this paper – in research links it quite close to the practitioner's view. A more systemic approach in pedagogical thinking is needed when, for instance, a classroom teacher conducts his/her job in everyday situations. The next citation comes from Schoenfeld's (1999, p. 13) methodological paper:

> *Teaching is a knowledge-based activity; it is highly interactive and contingent on dynamically changing circumstances; and it calls for rapid decision making in the service of multiple and changing goals. On the theoretical side of the coin, to be able to describe and provide detailed theoretical models of such activity, explaining how and why teachers do what they do amidst the complexity of the classroom, is to make significant strides in understanding human thought and action.*

In essence, a classroom teacher lives in the centre of a complex and interactive environment, and because a teacher has to make decisions in a variety of temporal perspectives (from the beginning of interactive thinking up to the long-term planning) while also utilising information from a few sources, she/he cannot use a 'partial' knowledge base. Rather, what is needed is an essentially wide and comprehensive knowledge base derived from many sources (see Kennedy, 2006b). In practice, we usually use quite wide terms such as teacher's practical theory (consisting of personal knowledge made by experiences, reflections and also scientific theories and research results) and pedagogical

content knowledge. In a nutshell: Every teacher makes personal use of the subjective practical theory in which she uses a variety of sources from pupils, aims, teaching methods, context, situation factors, etc. (e.g. Levin & He, 2008; Stenberg, Karlsson, Pitkäniemi, & Maaranen, 2012). Another feature of practical knowledge and theory is the dimension of 'essential – not essential.' Again, this dimension is principally of interest to practitioners as well as researchers. Research is, after all, keen on essential factors and processes (generalities). But the teacher basically values the same thing: valid research knowledge, which she can apply to many practical situations (see Kennedy, 1999). Probably here we could use a new term such as 'ecology of educational knowledge,' as we are as researchers more interested in essentials than non-essentials (Pitkäniemi, 2005). Highlighting essentials lead us searching for concepts, chains and network, which can as a whole shed greater light on educational phenomenon.

In conclusion, we have more than enough reasons to promote systemic orientation in educational research, and based on that thesis we will look for and propose some potential alternatives. But first, some important questions must be raised. *What are the present ways to realise research which will follow the principles and ideals of a systemic approach?* We speculate that there are a variety of possibilities even in current methodologies of educational research. But this central problem of our methodological study leads to another important question for our study: *In what ways do they differ and, furthermore, what do these differences mean for the quality of research results of systemic studies?* Based on this comparative examination and related methodological papers, *is it possible to create a tentative methodological and comprehensive model – or even several models – which combine the merits of researchers' previous work?*

VARIANTS OF A SYSTEMIC APPROACH

We consider here three alternatives to realise educational research which accords with the main ideals of a systemic approach. While Salomon exemplifies analytic and systemic approach in the domain of empirical research, our examination uses a loose meaning of the term systemic. We try to imagine a variety of possibilities to conduct systemic studies in order to maximise the profits of this approach for research and practice (i.e. when teachers construct and refine their practical theories), too. This is why alternatives such as conceptual study (a method which is used in educational philosophy), extensive literature review (a review which also achieves something 'new' in constructing an integrative model) and empirical study (where data is collected in order to exploring the relations between variables in a broad area of the educational phenomenon) are offered. They all share the common ideal about the systemic approach, i.e. a wide and interactive orientation to the phenomenon of interest.

Conceptual research

Conceptual models are designed by educational philosophers. They are not - at least not directly - based on empirical research but constructed on the basis of scientific literature and creative thinking. This kind of research focuses on the relations between theoretical concepts and assertions of educational/instructional principles. Good examples of this

kind of research represent a few analyses of the concept of teaching. "What is teaching?" is a classic question which has been a topic of frequent conceptual investigations during the past decade (Kansanen, 1999; Bengtsson, 2001; Pitkäniemi, 2009). The authors of some models have utilised existent theories and empirical research, but mainly researchers resort to philosophical analysis. This kind of work also produces conceptual models (see Uljens, 1997; Bolhuis, 2003). We chose, as an example here, a study by Fenstermacher and Richardson (2005), because it not only examines the meaning of teaching but further explores the notion of quality teaching. The authors pay attention to distinguishing the concepts such as 'good teaching' and 'successful teaching'. They are interested in connecting student learning to teaching. With this research focus, they ask which requirements are essential for student learning and conclude the following factors:

1. Willingness and effort by the learner.
2. A social surround supportive of teaching and learning.
3. Opportunity to teach and learn.
4. Good teaching.

When Fenstermacher and Richardson (2005) refer to this collection of factors, they call it 'a cluster of conditions'. Good teaching means that teaching in the task sense is done well, and when teaching process also results in learning, they call it successful teaching. They use the name 'qualitative teaching' for a concept which connects 'good teaching' and 'successful teaching'. Fenstermacher and Richardson criticise that people sometimes cultivate naive and incorrect conceptions of causality. It is better to comprehend that 'improving the quality of what teacher does is only a part of improving student learning'. They describe teaching and learning as well as the meaning of other factors in this complex phenomenon analytically. They also illuminate many variants which these basic concepts – mentioned above – can form. They conclude with one core idea concerning quality: *"The quality of teaching, how good and how successful it is, will depend – sometimes to a small and other times to a considerable extent – on how well the teacher adapts his or her instruction to the context at hand"* (Fenstermacher & Richardson, 2005, p. 207). When using conceptual analysis, the detailed chains and effect between factors (variables) seems to be at least occasionally uncertain. Oftentimes, however, they are not verified. After this general level analysis, there is a need for model building as well the verification of a model supported by empirical data. Probably the statistical models can never explain "everything", so the educational phenomenon is not only complex and interactional, but it can be also "individual" and "surprising" as Lemke and Sabelli (2008, pp. 128–129) suggest:

> *Most important perhaps is a change in the paradigms of our thinking about research on education. Away from input-output 'black-box' causal models to modeling the specific, local linkages that actually interconnect actors, practices, and events across multiple levels of organization. Away from single interventions and simplistic solutions to recognition of the need for coordinated changes throughout the system and to its 'external' relations to its constraining and enabling contexts and resources. And even perhaps away from the Enlightenment dream of universal laws, perfect predictability and rational control to a new recognition that all genuinely complex systems are individual, surprising, and not a little perverse. Just like us.*

One of the clearest profits of the conceptual method is that it can capture quite a complex and challenging system very broadly and 'economically', i.e. affording a wide scope on phenomenon through comparatively few concepts. But as a result of the conceptual method, quite often the system achieved can be tentative and speculative, even 'imaginative'. Therefore, it will be necessary to verify how well the model functions and what it can offer researchers in certain research areas and for practitioners in corresponding areas.

Extensive and creative literature review

We do not refer to research synthesis or meta-analysis, which operate often in a narrow area. Typically a meta-analytic investigation collects 'analytic' studies together, which are very similar or parallel in their shared research focus. The meta-analyses can be very useful for research audience per se as well for practitioners, but *a researcher can take advantage of meta-analyses and separate studies in constructing a new model in a creative way*. This kind of 'an extensive and creative literature review' uses previous empirical studies, but it also construct links and possibly some hypothetical links in a way, which was not necessary verified in earlier research. There are few investigations in which a massive amount of empirical studies were used to construct an integrative model (e.g. Hattie, 2009; Kyriakides, Creemers, Antoniou, & Demetriou 2010; Lee & Shute, 2010). The last mentioned alternative is our focus, and we will consider what kind of presentation, for instance, Lee and Shute (2010) formulated for "An integrative perspective on student learning".

At first, Lee and Shute identified variables that are most relevant to student learning results (in the learning context of K-12 curriculum). Based on research findings of extensive literature review, they derived four main categories of social-psychological constructs: student engagement (consists of behavioural, cognitive, and emotional components), learning strategy use (involves cognition, meta-cognition, and behaviours), school climate (includes cognition, meta-cognition, motivation, and affect of school community members), and social-familial influences (can be exerted by motivation, affect, and behaviours of parents and peers). Further, they broadly categorised student engagement and learning strategy as *personal factors*, and school climate and social-familial influences as *social-contextual factors* (Figure 1). In summary, their model construction reflects an integrative conceptualisation which consists of elements such as motivation, cognition, and affective variables. Lee and Shute (2010) emphasise that all of these factors – mentioned before – are *working in concert* when they influence the product of student learning.

But they do not use a mediating model, or any complex structure model, when they analyse the interrelations between explaining factors and how these correlate to student achievement. On the other hand, the model appears quite comprehensive as they take into consideration a few factors outside school and teaching, i.e. social-contextual influences (e.g. peers, parents, and school).

But Lee and Shute (2010, p. 199) forecast that we will see more developed models in the future, containing also directional links between elements:

> We also recognize the reciprocal nature of relationships among the variables reviewed. In the future, directional links can be explored among the current set of variables, as well as including additional contextual variables mentioned in this section toward developing an even more comprehensive frame work.
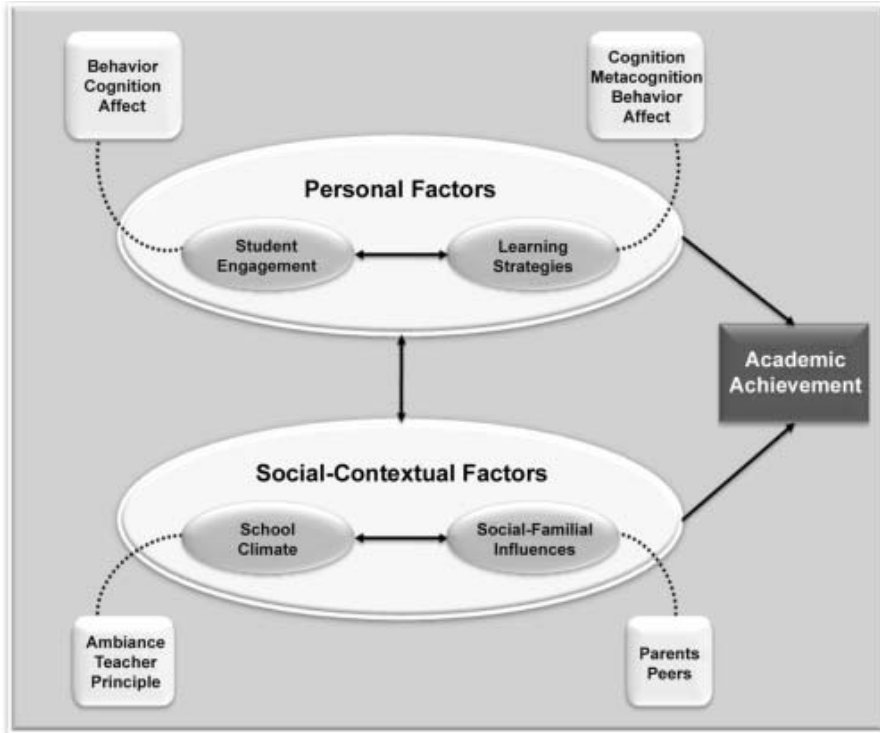
Figure 1. An integrated framework of personal and social-contextual factors for academic achievement (Lee & Shute, 2010, p. 187)

Systemic empiric research and an exemplary case

The ultimate level in a systemic approach is to conduct empirical study with comprehensive collection of variables. One example of such research offers our study with correlative research design (Pitkäniemi & Vanninen, 2012). The purpose of the study was to construct a model which comprehensively describes the relationships between the classroom learning environment, students' cognition (student mediation) and learning outcomes (see e.g. Marjoribanks, 1999; Muijs, 2006; Fraser & Kahle, 2007). The essence of our study was to test the constructed conceptual model and develop it further on the basis of empirical data and theoretical knowledge in the framework of structural equation modelling. The constructed conceptual model (Figure 2) mainly focused on the relationship between the features of the learning environment, student cognition (e.g. students' self-efficacy) and learning outcomes in a school context. The data of the study consisted of 218 fifth- and sixth-grade primary school students in a Finnish school context (girls, N=116; boys, N=102).
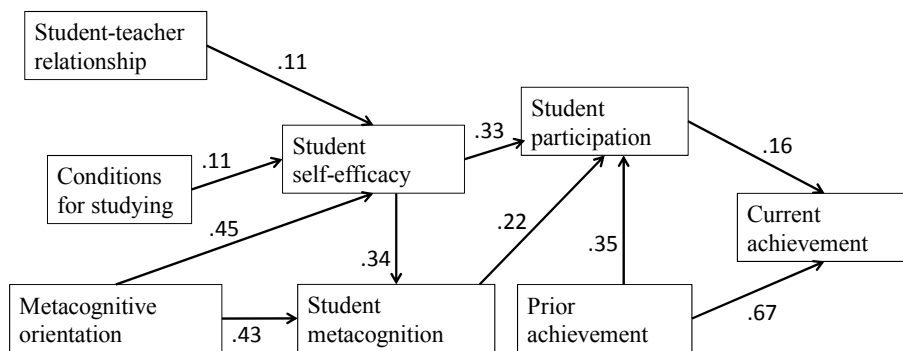
Figure 2. The effects of the conceptual model (Pitkäniemi & Vanninen, 2012, p. 79)

AMOS program in the framework of structural equation modelling (SEM) was used to analyse at first the data of the proposed conceptual model and then the re-specified model. By SEM analysis we could specify the relationships among variables included in a model. In this research context, the proposed theoretical model of "Current achievement" was specified and then tested. Another interest was to establish the direct and indirect effects of each variable included in a model. Based on these tentative results, the model was modified to eliminate all non-significant paths, and a few additional pathways were hypothesised based on assumptions and earlier findings. As a result, a re-specified model was obtained (Figure 3) which consists of new relationships and better measures of model fit. The goodness of fit indices was acceptable in the re-specified model: RMSEA decreased from 0.18 to 0.06 and NFI increased from 0.77 to 0.96.
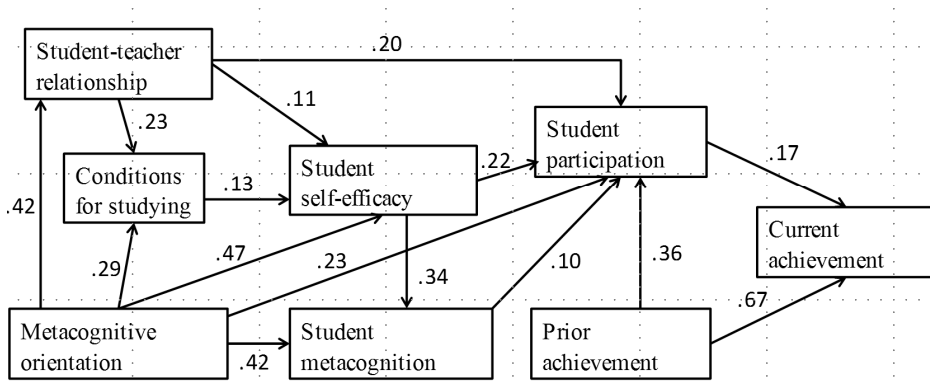
Figure 3. The effects of the re-specified model (Pitkäniemi & Vanninen, 2012, p. 82)

Constructing a conceptual model, i.e. combining separate studies and their findings from diverse research traditions, is not a simple task. At first, it is important to realise the systemic nature of the phenomenon researched. Nonetheless, as researchers, we expect that previous high-quality investigations of separate relationships support the possibility that the model will work as an interactional system. Even though a comprehensive model is

built according to meta-analytic studies and separate studies, it can still be incompatible with new empiric data. It is essential to try to verify dynamic relationships between many factors. In order to further develop the research framework of this exemplary study and increase understanding of factors important in the learning environment, it would be rewarding to study the relationships detected in this correlative design in other empirical designs (i.e. experimental design or longitudinal design).

DISCUSSION AND CONCLUSION

It is clear that both Salomon's texts (1991, 2006) bring out the essential features of the systemic and analytic approaches and their mutual differences. However, we did not find any articles in which the variants of the systemic methodology in educational science were comprehensively examined. There will be a need for this kind of an examination as research domain progresses. As analytic research produces more detailed descriptions on concepts and relations between concepts, the day will come when it is possible to perceive wide, complex and interactive relations in the phenomena studied here. Research must be seen as a process which ideally contains a multi-phase systemic research design (a conceptual model, a tentative model using empirical findings, and in the end, a systemic empirical study with a theoretical basis).

We start our discussion on the point of methodological matters, and then continue to questions of how teachers make use of educational research. In the end, we try to sketch a few tentative steps for a methodology which utilises core ideas of a systemic approach as well elaborate it by adding a few more dimensions.

Evaluation of the three modes of systemic studies

The conceptual model, the first variant, can in principle be created without an empiric study. For instance, the concept of teaching and its essence can be considered as a classic theoretical-conceptual research subject in educational philosophy. Typically, in these studies the findings of the empiric study are not used or referred to, at least not explicitly. In addition to 'the quality of the teaching, Fenstermacher and Richardson's (2005) theoretical study analyses the relation between research traditions and paradigms to the examined core concept 'teaching'. Their analysis does not, however, utilise explicit empiric studies. Creating a new conceptual model requires a thorough theoretical consideration of the phenomenon as well as its operationalisation on an imaginative level. In this sense, theoretical-conceptual models are based on the 'empiria' – more or less. The sketching of them can take place even within a relatively short time as the explicit collection of data and the review of prior empiric studies are usually missing. The sketches of the conceptual study can also proceed according to their own logic.

If a lot of analytic studies have been conducted, the technique of the meta-analysis can be carried out from time to time in order to construct the research synthesis of the specific domain. On the other hand, a new model can be achieved creatively, but based on empiric studies, i.e. *the second variant*. Empiric studies can be qualitative and quantitative among themselves. They can be carried out in several contexts, but the researchers can set certain preconditions as well, i.e. the studies which best suit the review study. Such extensive literature reviews, though very laborious, are especially rewarding from the

point of view of both the research and practice of education. In recent years there have appeared wide and creative integrative studies (see Hattie, 2009; Kyriakides et al., 2010; Lee & Shute, 2010) on factors relating to how students learn at school, which are based on literature reviews. Although they contain clear overlapping elements, their focuses differ.

Probably the most demanding form of a systemic study would be an original, wide-scope empirical study. This category consists of studies in which their variables try to cover a relationally wide area of systemic and interactional phenomenon. This means that research design contain *several variables* in *variety of areas*, and probably even from *variety of actors and perspectives* (here: teacher, student, teaching process). The realisation of this kind of research project typically requires work of a researcher group. The preceding stage, the planning of this kind of systemic study design, usually requires the wide control of the earlier study findings. Research reviews in a specific context may serve as a relevant starting point to the empiric study. The systematic study of the *third variant*, i.e. highest level can shed light especially on the mutual interactive relations of the variables. In that case it will be interesting to discover the extent to which a conceptual – hypothetically built – model, which utilises empirical results of earlier research, and an empirical systemic study, demonstrate corresponding results from the phenomenon.

Quite few are those empirical study examples which essentially accord with the ideals of the systemic approach. We could mention here a study on Variations in Teachers' Work and Lives and Their effects on Pupils, VITAE-project (Day, Kington, Stobart, & Sammons, 2006; Gu & Day, 2007; Sammons, Day, Kington, Gu, Stobart, & Smees, 2007; Day, Kington, Stobart, & Sammons, 2008; Kington, Sammons, Day, & Regan, 2011). It included a focus on student attainment with a wide-ranging study aimed at "a more holistic, nuanced understanding of teachers' work and lives" (Day et al., 2008, p. 330). Day et al. (2008) describe it as a research project with the goal of synergistic understanding containing a combination of a greater range of data. This project fulfils the criteria of a systemic approach in the most demanding meaning of the methodological concept. Its scope is very wide and we agree when the authors describe the situation in research in the following way: "…absence of any previous large-scale, longitudinal, mixed-methods project on teacher effectiveness…" (Day et al., 2008, p. 331).

Often the projects which study the development of schools are the studies of wide and systemic designs. For instance, Desimone (2009) presents a model which allows a testing of both a theory of teacher change and a theory of instruction, both of which are essential to develop our understanding of how professional development functions. The importance of each element in her comprehensive "path model" is reflected in the literature, but as Desimone (2009, p. 185) mentions only a handful of studies have addressed links in all four areas in the model, i.e. professional development, content knowledge, instruction, and student achievement. In the article "A systemic perspective on school reform: Principals' and chief education officers' perspectives on school development" by Pyhältö, Soini and Pietarinen (2011), one comprehensive research design was described. It is also quite a wide project as it includes data collection from four different levels of the schooling system: heads of school districts, principals, teachers, and pupils from 9th graders. In order to capture the views of different actors, the data of the study was gathered through mixed methods containing inquiries, interviews, reflective discussion, and activating methods.

From teacher to teaching - from analytic to systemic

Teacher thinking or teacher cognition is one of the current paradigms in research on teaching. It has developed since the late 1970s, when it first gained popularity among researchers. It went on to acquire powerful status in the research community, as it differed in many ways from the positivistic process-product-camp. Some researchers criticised research on teacher cognition, especially when it lives and functions like in an island unconnected with other factors in the interactional teaching process, i.e. it can be considered a factor which is remote from the real work of students and their learning. Anyway, research findings show that teachers – as well as classrooms – make a difference in how well students learn (Konstantopoulos & Chung, 2011).

In any case, a holistic view of the educational aims and situational factors is needed when we sketch the necessities of qualified teacher thinking. Kennedy (2006a, 2010) suggests that researchers in education and policy makers may overestimate the role of personal qualities in their quest to understand teaching quality. In their effort to understand classroom-to-classroom differences in student learning, they may focus *too much on the characteristics of teachers themselves*, overlooking situational factors that may have a strong bearing on the quality of the teaching practices we see. Kennedy (2006a) suggests that although these elements of teacher quality are important, schools also need to pay attention to the conditions of classroom life that can determine teaching quality. She identifies three such conditions: teachers' dependence on lesson props, interruptions to the classroom, and student behaviours. As Kennedy points out, it is more useful to consider the many factors and processes concerning teaching quality than only the 'static' significance of the teacher. "The situations teachers face in their daily work provide important and underappreciated influences on teaching practice and on student learning" (Kennedy, 2010, p. 593). In her article she examines aspects of teachers' working conditions which are relevant to their effectiveness: the parameters of the work itself, the students, institutional incursions into classroom life, and excessive reforms, what she calls "reform clutter." In summary, there are many forces and influences which interactively affect student learning.

Hiebert and Morris (2012) argue quite similar matters as their title "Teaching, rather than teachers, as a path toward improving classroom instruction" implies. They refer to the ample empirical documentation of weak relationships between teacher characteristics and teacher effectiveness (e.g. Grossman & McDonald, 2008; Ball & Forzani, 2009), and how this is the logical consequence of "the distance between the characteristics measured and the actual work of teaching" (e.g. Buddin & Zamarro, 2009). Although we think this conclusion is heading in the right direction, we can go further since the cognitive-mediational paradigm was presented many years ago (e.g. Winne 1987). It also contains student processes in which they interpret cognitive and affective cues of classroom process and how they take part in this process. Hiebert and Morris (2012) present – based on interpretations of a few empirical findings of prior research – that so called 'instructional products' will be the key for better student learning, i.e. improving teaching. This means annotated lessons plans and common assessment, and essentially continuously refining instructional products. This kind of knowledge can be developed together with other teachers and with other researchers as well. Hiebert and Morris (2012, p. 95) reveal one positive side of this kind of knowledge when they refer to the actual environment where teachers work: "An important feature of this knowledge is that it is developed in the exact context in which it will be used".

Among others, a few articles of Kennedy refer to the significance of systemic approach, i.e. what kind of studies teachers feel best to support their work. Teachers are not interested in research genres, but on the contrary substantive questions addressed by research studies (Kennedy, 1999). She continues (pp. 536–537):

> The studies that teachers found to be most persuasive, most relevant, and most influential to their thinking were all studies that addressed the relationship between teaching and learning. Those that they perceived to be least persuasive, least relevant, and least influential addressed only one aspect of teaching – only the subject matter for instance, or only student learning – without speaking to the relationship to teaching practice itself.

Research, practice of teaching and education for sustainable development: Towards multi-view and process-oriented systemic research design

We have brought out those points demonstrating why the systematic approach is necessary in educational research. Systematic research emphasises more internal interactive relations of the comprehensive phenomenon than analytic research. This is illustrated in Figure 4.
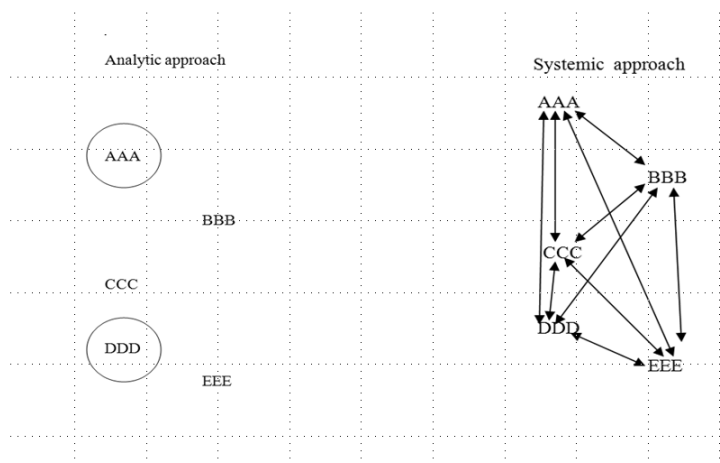
Figure 4. Analytic approach versus systemic approach

Especially in the study of teaching it is customary to collect research data by interviewing – which focuses on pupils thinking or teacher thinking – or observing classroom processes. However, the point of view of the phenomenon can vary so that the teacher, pupil or researcher, i.e. each of them perceive teaching and classroom process in varying ways. For instance, it has been compared in the learning environments research how the pupils' observations and the teacher's observations differ. We consider that the versatile point of view for its part – in addition to the covered scope of phenomenon – increases the validity of the systematic approach (Figure 5).
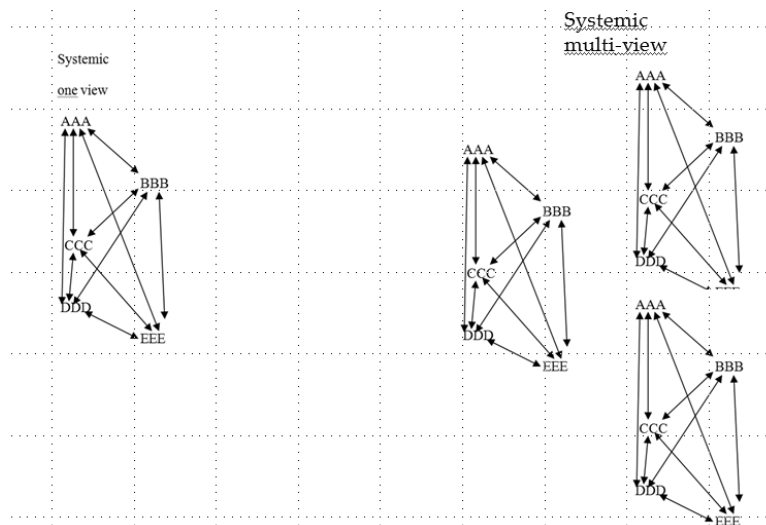
Figure 5. Systemic one-view design versus systemic multi-view design (the latter contains various points of view, such as researcher's, teacher's and student's)

The systematic approach is always challenging and laborious to the educational researcher, and the majority of educational research is closer to an analytic than a systematic orientation. Teachers cannot avoid a systematic orientation in their work because they must design and carry out teaching comprehensively while considering both the objectives of teaching and individual situations. The systemic orientation also relates to the quality aspect of instruction. A teacher will use a lot of time to write down his lesson or course plan. In principle, we cannot say what is 'too much' or 'too little' time, but researchers have to take the time dimension into consideration: Sustainable development in teaching means that it can be designed and carried out within a reasonable amount of time. Kennedy (2006b, p. 205) pays attention to the same challenge of teaching:

> *Moreover, teachers who develop sustainable teaching practices develop integrated, routinized approaches that simultaneously address all of these areas of concern in a way that the teacher can tolerate. By sustainable I mean practices that can be managed within a normal workweek, without unreasonable time commitments, and that are not so taxing that the teacher is exhausted and depleted after 1 or 2 years.*

Quite often, that fact that teaching, studying and learning are processes, not only outputs of something, is forgotten. This means that we have to take into serious consideration the process dimension of education. We all know that educational research methodology contains longitudinal research design or follow-up study, i.e. process-oriented research designs. But as Schmitz (2006) points out, very little research applies process analysis and he refers to databases like ERIC or Psycinfo in order to verify the state of matter (but a high number of studies using the phrase 'process'). One-time studies cannot replace a research frame in which static and dynamic changes in the process are also stated – even if they are wide and contain many points of view (Figure 6). We

consider this latter design of a systemic approach the most demanding form. It shows the versatile and complex essence of the phenomenon: the qualitative variation of teaching is wide and multidimensional.
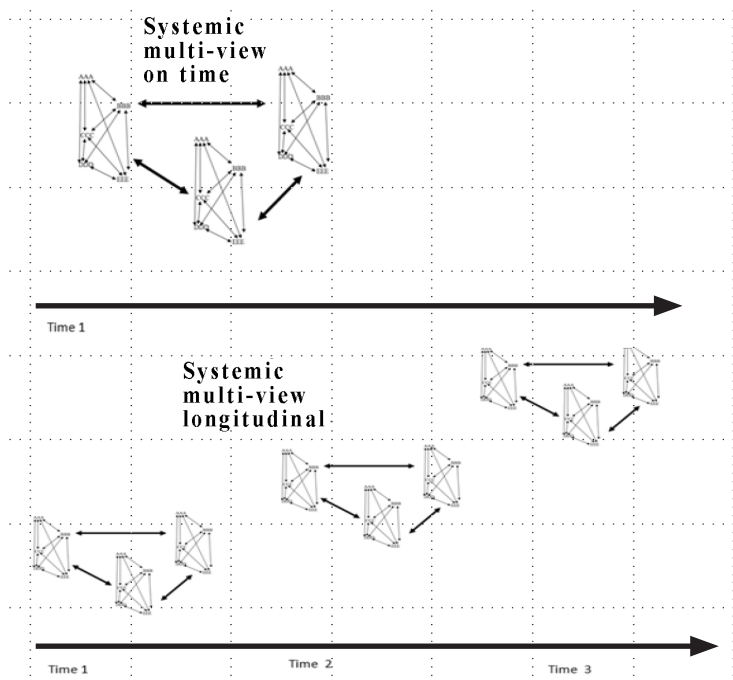
Figure 6. One time systemic design versus longitudinal systemic design

FINAL THOUGHTS

We have considered the existent research on school learning, and factors which relate to it, i.e. teacher, student and teaching process. Naturally, the chosen perspective 'teaching' is not the only one nor the most extensive (and either the largest). There already exists a long tradition of studies concerning the cultural and sociological factors and their connections to school life, school culture, school climate, well-being of students, teacher burnout, etc. We have chosen the teaching perspective because it is homogenous enough – still containing a wide variety of factors and processes. Teaching is a so called reference concept, so we had an opportunity to consider it from many methodological points of view – in the beginning from conceptual to fully and ideal systemic empirical ventures. In addition, having the previous research history in the domain of classroom teaching we could illuminate the research context from many aspects: teacher cognition, teacher emotions, student motivation, student cognition etc. The factors mentioned above form highly interactive and challenging connections – so the 'teaching' alone as a 'part' of a wider context can be proportionally fascinating and complex challenge.

REFERENCES:

Ball, D. L., & Forzani, F. M. (2009). The work of teaching and the challenge for teacher education. *Journal of Teacher Education, 60*, 497–510.

Bengtsson, J. (2001). Towards an ontological understanding of teaching. *Nordisk Pedagogik, 21*(3), 134–148.

Bolhuis, S. (2003). Towards process-oriented teaching for self-directed lifelong learning: A multidimensional perspective. *Learning and Instruction, 13*, 327–347.

Buddin, R., & Zamarro, G. (2009). Teacher qualifications and student achievement in urban elementary schools. *Journal of Urban Economics, 66*(2), 103–115.

Day, C., Kington, A., Stobart, G., & Sammons, P. (2006). The personal and professional selves of teachers: Stable and unstable identities. *British Educational Research Journal, 32*(4), 601–616.

Day, C., Kington, A., Stobart, G., & Sammons, P. (2008). Combining qualitative and quantitative methodologies in research on teachers' lives, work, and effectiveness: From integration to synergy. *Educational Researcher, 37*(6), 330–342.

Desimone, L. M. (2009). Improving impact studies of teacher professional development: Toward better conceptualizations and measures. *Educational Researcher, 38*(3), 181–199.

Fenstermacher, G. D., & Richardson, V. (2005). On making determinations of quality in teaching. *Teacher College Record, 107*(1), 186–213.

Fraser, B. J., & Kahle, J. B. (2007). Classroom, home and peer environment influences on student outcomes in science and mathematics: An analysis of systemic reform data. *International Journal of Science Education, 29*, 1–19.

Grossman, P., & McDonald, M. (2008). Back to the future: Directions for research in teaching and teacher education. *American Educational Research Journal, 45*, 184–205.

Gu, Q., & Day, C. (2007). Teachers resilience: A necessary condition for effectiveness. *Teaching and Teacher Education, 23*, 1302–1316.

Haig, B. D. (1991). Meta-analysis, methodology and research integration. *International Journal of Educational Research, 15*(6), 569–586.

Hattie, A. A. C. (2009). *Visible learning. A synthesis of over 800 meta-analyses relating to achievement*. New York: Routledge.

Hiebert, J., & Morris, A. K. (2012). Teaching, rather than teachers, as a path toward improving classroom instruction. *Journal of Teacher Education, 63*(2), 92–102.

Kansanen, P. (1999). Teaching as teaching-studying-learning interaction. *Scandinavian Journal of Educational Research, 43*(1), 81–89.

Kennedy, M. M. (1999). A test of common contentions about educational research. *American Educational Research Journal, 36*(3), 511–541.

Kennedy, M. M. (2006a). From teacher quality to quality teaching. *Educational Leadership, 63*(6), 14–19.

Kennedy, M. M. (2006b). Knowledge and vision in teaching. *Journal of Teacher Education, 57*(3), 205–211.

Kennedy, M. M. (2010). Attribution error and the quest for teacher quality. *Educational Researcher, 39*(8), 591–598.

Kingston, A., Sammons, P., Day, C., & Regan, E. (2011). Stories and statistics: Describing a mixed methods study of effective classroom practice. *Journal of Mixed Methods Research, 5*(2), 103–125.

Konstantopoulos, S., & Chung, V. (2011). The persistence of teacher effects in elementary grades. *American Educational Research Journal, 48*, 361–386.

Kyriakides, L., Creemers, B., Antoniou, P., & Demetriou, D. (2010). A synthesis of studies searching for school factors: Implications for theory and research. *British Educational Research Journal, 36*(5), 807–830.

Lee, J., & Shute, V. (2010). Personal and social-contextual factors in K-12 academic performance: An integrative perspective on student learning. *Educational Psychologist, 45*(3), 185–202.

Lemke, J., & Sabelli, N. (2008). Complex systems and educational change: Towards a new research agenda. *Educational Philosophy and Theory, 40*(1), 118–129.

Levin, B., & He, Y. (2008). Investigating the content and sources of teacher candidates' personal practical theories (PPTs). *Journal of Teacher Education, 59*(1), 55–68.

Marjoribanks, K. (1999). Environmental and individual influences on adolescents' aspirations: A moderation-mediation model. *Learning Environments Research, 2*, 43–64.

Muijs, D. (2006). Measuring teacher effectiveness: Some methodological reflections. *Educational Research and Evaluation, 12*, 53–74.

Pitkäniemi, H. (2005). Kasvatustieteen ilmiökarakteristiikkaa myötäilevää metodologiakarttaa kohti [Towards a map of methodology which fits with the essence of the educational phenomenon]. *Kasvatus* [The Finnish Journal of Education], *26*(5), 361–365.

Pitkäniemi, H. (2009). The essence of teaching-learning conceptual relations: How does teaching work? *Scandinavian Journal of Educational Research, 53*(3), 263–276.

Pitkäniemi, H., & Vanninen, P. (2012). Learning attainments as a result of student activity, cognition and the classroom environment. *Problems of Education in the 21st Century, 41*, 75–86.

Pyhältö, K., Soini, T., & Pietarinen, J. (2011). A systemic perspective on school reform. Principals' and chief education officers' perspectives on school development. *Journal of Educational Administration, 49*(1), 46–61.

Salomon, G. (1991). Transcending the qualitative-quantitative debate: The analytic and systemic approaches to educational research. *Educational Researcher, 20*(6), 10–18.

Salomon, G. (2006). The systemic vs. analytic study of complex learning environments. In J. Elen & R. E. Clark (Eds.), *Handling complexity in learning environment: Theory and research. Advances in learning and instruction* (pp. 255–264). Oxford: Elsevier.

Sammons, P., Day, C., Kington, A., Gu, Q., Stobart, G., & Smees, R. (2007). Exploring variations in teachers' work, lives and their effects on pupils: Key findings and implications from a longitudinal mixed-method study. *British Educational Research Journal, 33*(5), 681–701.

Schmitz, B. (2006). Advantages of studying processes in educational research. *Learning and Instruction, 16*, 433–449.

Schoenfeld, A. H. (1999). Looking toward the 21st century: Challenges of educational theory and practice. *Educational Researcher, 28*(7), 4–14.

Stark, R., & Mandl, H. (2007). Bridging the gap between basic and applied research by an integrative research approach. *Educational Research and Evaluation, 13*(3), 249–261.

Stenberg, K., Karlsson, L., Pitkäniemi, H., & Maaranen, K. (2012). *What do the practical theories of first year student teachers reflect in terms of their teacher identity?* (submitted to journal).

Uljens, M. (1997). *School didactics and learning. A school didactic model framing an analysis of pedagogical implications of learning theory.* Hove, East Sussex: Psychology.

Winne, P. H. (1987). Why process-product research cannot explain process-product findings and a proposed remedy: The cognitive mediational paradigm. *Teaching and Teacher Education, 3*(4), 333–356.

Sustainable education issues in science education

Towards an inclusive environmental ethic in teacher education for sustainability: Insights from an educational action research cycle

Inga Gedžūne

Daugavpils University, Latvia

ABSTRACT

The paper recounts the experience of an educational action research cycle, conducted in the context of implementing teacher education for sustainability and focusing on how pre-service teachers make sense of the ethical underpinnings of relationships between humans and the nonhuman natural world. By engaging in cooperative inquiry on this issue, the research participants sought to uncover their assumptions about an inclusive environmental ethic – one which extends the scope of moral consideration to include non-human nature. Qualitative content analysis of the generated data aimed to reveal specific nuances and emergent tendencies in the frames of reference the students use for making sense of the issue under study. Insights from the research are presented in discussion with relevant philosophical literature on environmental ethics by highlighting points of convergence. The paper concludes with suggestions and implications for implementation of ethically concerned teacher education for sustainability.

Key words: environmental ethic; inclusion; teacher education; sustainability; educational action research

INTRODUCTION

It is our firm belief that, rather than inundating young teachers' minds with propositional knowledge *about* sustainability in the form of facts and theories (educational content), teacher education *for* sustainability should, above all, encourage experience-based critical reflection on such key issues as interaction not only among humans, but also between humans and non-humans in the community of life and its support system on Earth. Such a contemplation of and seeking value in the multiple ways of seeing the world, of being in it and (inter-)acting with it is a matter of ethics – not only inter-human ethics but also environmental ethics which, according to Palmer (2003), examines how humans can interact with the non-human natural world and how they should be doing it. An ethically concerned education for sustainability thus lays emphasis on issues of meaning, purpose and value, which can be regarded as educational meta-content.

The present paper recounts the experience of an action research cycle with prospective early childhood teachers in the context of a higher education course on environmental pedagogy. The focus of the study is cooperative inquiry (Reason, 1999, 2006) into the ways pre-service teachers conceive existing and ideal relationships between humans and the environment constituted both by the non-human natural environment and the social milieu. By working in small discussion groups and drawing on their lived experiences, pre-service teachers contemplated the meanings that they attach to such issues as ethical attitude towards the world, nature as a source of insight for making ethical decisions, the role of egoism in ethical/unethical attitudes and the possibility to transform egocentrism into cosmocentrism. The overarching theme of the learning session was to extend the scope of ethical consideration to include not only relationships among humans, but also among humans and the non-human natural world. Through their participation in the contemplation of these issues, the pre-service teachers became involved in uncovering the assumptions they hold about the ethical quality of relationships between humans and the rest of the natural world, as well as the orientation of these relationships towards anthropocentrism, alienation, detachment (exclusion) or ecocentrism, kinship and closeness (inclusion). In effect, they were reflecting on an inclusive environmental ethic – one which includes relationships between humans and the nonhuman natural world in the scope of moral considerability (Keller, 2010).

We regard learning experiences such as these as a crucial step in preparing students to become committed teachers of the future members of an inclusive community of life, capable of making sense of complex relational issues and using their reflexive insights in their teaching practice. According to Taylor (2011), our moral intuitions about the ways we should treat living things in the natural world depend on attitudes towards nature instilled in us during early childhood. That is why our attempts to involve prospective early childhood education teachers in contemplating the ethical underpinnings of human relationships with the rest of the natural world become highly topical in view of their subsequent work with schoolchildren and pre-schoolers.

Thus, the aim of the study was to examine the ways future teachers make sense of the extension of the scope of moral consideration to include human relationships with the nonhuman natural world. We therefore sought to answer the following question: How do pre-service teachers make sense of the ethical underpinnings of relationships

between humans and the non-human natural world? Before moving on to describing how we attempted to answer this question, the following section briefly outlines the broader conceptual framework of this paper, notably, its philosophical grounding.

INCLUSIVE ENVIRONMENTAL ETHICS: CONTEMPORARY PHILOSOPHICAL DISCOURSE

Environmental ethics is a field of philosophy that explores moral underpinnings of relationships between humans and what has been variously and mainly interchangeably termed nature (Keller, 2010), nonhuman nature (Callicott, 1997), natural world (Taylor, 2011) or natural environment (Sylvan, 2003). Current discussions in environmental ethics regard it as inclusive in that it subsumes human relationships with non-human nature in the scope of moral consideration (Leopold, 2003; Keller, 2010). For instance, Opotow, Gerson and Woodside (2010) highlight the need to overcome moral exclusion and extend our scope of justice to include the non-human entities through rethinking of our relationship with, and responsibility towards, diverse aspects of nature. Thus, ethics is conceived as a study of our ways of being in the world and interacting with it. A relatively comprehensive definition of environmental ethics is suggested by Taylor (2011) who pinpoints it as a study of relationships between humans and the natural world, the principles that these relationships are grounded in and that determine our duties, as well as obligations and responsibilities towards the Earth's natural environment and all the organisms that inhabit it. A review of recently published literature in environmental ethics (both original publications and reprints of classical works particularly relevant today) highlights several questions that are debated from diverse and often opposing perspectives.

Value carried by nature – intrinsic vs. instrumental. According to Keller (2010) this trend in environmental ethics debates whether nature as a whole and/or natural entities are valuable intrinsically irrespective of human awareness of them (meta-ethical objectivism) or valuable extrinsically inasmuch as humans experience a need for them (meta-ethical relativism). Intrinsic value can be attributed to natural entities on the grounds of different considerations: the mere fact of their existence (Naess, 2000) or their having an apprehended or non-apprehended aim to retain existence (Becker, 2009; Taylor, 2011). Essentially, this field of philosophical discourse leads to a deliberation of the kind of moral consideration that nature deserves.

Direct vs. indirect moral consideration of nature. One point of view in this philosophical debate advocates an indirect evaluation of the effects of human actions on non-human nature; they are considered moral (or not) only inasmuch as they affect other humans (Singer, 2003). An opposing view maintains that one should evaluate the effects of human activity on non-human organisms directly in terms of human actions influencing the life and wellbeing of the latter (Singer, 2003).

Anthropocentric vs. non-anthropocentric values orientations. Contemporary philosophical discourse regards the differences between ecocentric and anthropocentric values orientations as being embedded in the preference given to one of the two opposing stances sketched above – an intrinsic or instrumental value of nature and resulting,

respectively, in direct or indirect moral consideration thereof. Anthropocentric environmental ethics are human-centred and grounded in primary care for human survival and wellbeing (Rolston, 1988; Elliot, 2009). This approach to ethics considers human moral obligation to the natural world to be secondary – derived from our moral obligation to fellow humans to protect the rights and wellbeing of both present and future generations (Taylor, 2011). Naess (2000) describes an anthropocentric stance in terms of human alienation from non-human nature, a physical and spiritual exclusion from it. Non-anthropocentrism, on the other hand, is related in contemporary philosophical discourse to a biocentric outlook within a biocentric environmental ethic (Taylor, 2000), an ecosofic outlook (Naess, 2000), an ecological perspective (Rolston, 2000) of primary environmental ethic (Rolston, 1988), an ecological conscience embedded in an ecological worldview (Leopold, 1991). It can be regarded as an inclusive and ecological frame of reference that perceives the natural world as an interdependent system carrying an intrinsic value from which our direct moral responsibilities to it are derived and in which love and sensitivity towards nature, and appreciation of its "beauty, integrity, stability" (Rolston, 2000, p. 241) are sustained.

Moral individualism vs. moral holism. As pointed out by Light and Rolston (2003), this field of discourse in environmental ethics contemplates how inclusive the scope of moral considerability should be. It is thus a debate on who is worthy of our moral respect – individual organisms, species or ecosystems. Some philosophers tend to incline in favour of an individualistic stance (Taylor, 2000, 2011; Singer, 2003), others advocate moral holism (Callicott, 1997; Naess, 2000; Leopold, 2003), and still others attempt to reconcile both these perspectives (Rolston, 1988, 2000). Thus, the discourse in this field of environmental ethics is characterised by a marked diversity of perspectives.

The present paper constitutes an attempt to contribute to the growing debate in environmental ethics in the context of teacher education for sustainability. The following section outlines the methodological framework of our study.

METHODOLOGY

This paper reports on an experience from a broader educational action research study implemented with prospective early childhood teachers in Daugavpils University. The overarching aim of this broader educational action research endeavour is to explore the possibilities of organising the acquisition of study courses about sustainability issues at the Faculty of Education and Management (DU), orienting towards enriching participants' frames of references through experiential, reflexive learning that addresses the quality of relationships between humans and the non-human natural environment, as well as views inclusion in the Earth's community of life as a precondition for developing sustainable relationships with the world, thereby preparing teachers for the implementation of sustainability oriented teaching practices. The specific aim of the research cycle outlined in this paper was to examine the ways future teachers make sense of the extension of the scope of moral consideration to include human relationships with the non-human natural world. We therefore sought to answer the following question: *How do pre-service teachers make sense of the ethical underpinnings of relationships between humans and the nonhuman natural world?*

The present educational action research cycle involved 26 participants – first year female students of the professional bachelor study programmes "Preschool Teacher" and "Basic School Teacher". The study was conducted in the autumn semester of the academic year 2011/2012 in the context of the study course "Environmental Pedagogy" taken by the above-mentioned students. The core activity of the cycle was a three-hour long learning session held on November 7, 2011. The structure of the reflexive session is outlined in Table 1.

Table 1. Structure of the reflexive session in the present action research cycle

Round	Question explored	Form of reflection and presentation	Generated data
1	Please examine a bottle of washing up liquid (placed on each table) and discuss which properties of the product suggest an ethical attitude towards the world	Students: reflection in groups, followed by voicing the key insights to other groups Facilitator: writing down key ideas on flipcharts, feedback to students	Notes in student work-sheets, facilitator's notes on flipcharts, observer's notes, video recording
2	How do I recognise an ethical activity? How does nature help people make ethical decisions? How does the Universe help people make ethical deci-sions?	Students: reflection in groups Facilitator: inviting students to share key insights with others, writing down key ideas on flipcharts	Notes in student work-sheets, facilitator's notes on flipcharts, observer's notes, video recording
3	How does egoism affect an ethical attitude and why do you think egoism has such an influence?	Students: reflection in groups, followed by voicing the key insights to other groups Facilitator: writing down key ideas on flipcharts, feedback to students	Notes in student work-sheets, facilitator's notes on flipcharts, observer's notes, video recording
4	Do you consider the current human attitude towards our shared world to be ethical? Why do you think so?	Students: reflection in groups, followed by voicing the key insights to other groups Facilitator: writing down key ideas on flipcharts, feedback to students	Notes in student work-sheets, facilitator's notes on flipcharts, observer's notes, video recording

The students worked in groups of five and four (four groups with four students and two groups with five, with six groups in total). The question of each round was discussed in all of the groups and presented to the other groups (reflection-presentation, reflection-presentation, etc.). During each round of presentations, the facilitator put the key ideas suggested by each of the groups on flipcharts and, after all groups had presented their perspectives, gave feedback: summarising the issues touched upon, highlighting the shared insights that had emerged along with the clash points of the ideas presented (if such occurred), as well as the unique nuances suggested by the groups, etc. After the feedback was provided, the facilitator encouraged the class to comment upon the richly nuanced perspective that gradually emerged in the inquiry group. This way, the students and the facilitator worked together to gradually uncover the assumptions that constitute the research participants' frames of reference used for making sense of the ethical concerns accompanying the relationships between humans and nonhuman nature.

Such a mode of work during the action research, where people come together in small groups to reflect on issues of mutual concern and try to identify new ways of seeing the world and acting within it (aiming for changes in understanding and practice), is known

as cooperative inquiry (Reason, 1999, 2006). This approach to action research was chosen for the present cycle due to the following considerations:

- increasing discussion time and opportunities to have a diversity of perspectives vented (Reason, 2006);
- practicing open-mindedness, appreciation of and respect towards diversity of opinions (Kelly, 2006);
- targeting values, beliefs, assumptions and feelings through dialogue and critical reflection on assumptions (Maurer & Githens, 2009);
- formulating of one's own views and enrichment of perspectives through discursive participation (Reason, 2006);
- learning together in mutually supportive relationships (Kelly, 2006; Yorks & Kasl, 2006).

The physical environment for the session was organised in the following way. The questions for discussion were distributed to the groups on worksheets as well as projected onto a wall as Power Point presentation slides. Hexagonal tables for group work were placed around the perimeter of the room so as not to give priority to any of the groups. During the discussion time, the facilitator took her place at the back of the room so as not to interfere with the students' exchange of ideas. The facilitator was, however, available to respond to any of the questions the groups faced in the process. At the end of the session, the students completed an evaluation by giving their opinion in writing on the session in general, the cooperation with their group mates, the form and content of the activities and the lessons learned.

Thus, the data sources obtained in the session include student worksheets, flipcharts with key ideas written thereon, observation notes, a video recording of the session and the evaluation sheets filled in by the students at the end of the session. The video recording was not analysed in detail for the purposes of the present paper, but was used as a support to the textual data. The textual data from the students' worksheets and the facilitator's flipcharts were at the centre of analysis – qualitative content analysis.

Methodological literature on content analysis (Lee & Fielding, 2004; Flick, 2007) emphasises that researchers need to be transparent in outlining the analytical path they pursued – specify the approach embraced, the procedures followed, etc. In the research cycle reported on in this paper, the utterances generated by the participants were quite brief, which is why we chose the microscopic approach for data analysis (Druckman, 2005), notably focused on relatively small units of text such as words, phrases and sentences. We followed the emergent coding procedure (Stemler, 2001), i.e. generated categories after a preliminary examination of the data. Notably, the first reading for general comprehension was followed by repeated more thorough scanning during which we sought to underline the key words and phrases that appeared in the participants' responses. These content units gradually converged into an emergent category system. According to Wong (2008), action researchers should present data so as to enhance a sense of authenticity in their account. Consequently, to present the data in this paper, we have opted for the so-called participant approach (Glesne & Peshkin, 1992, as cited in Wong, 2008) which illustrates themes and supports key finding with direct quotations from the research participants. The key insights gleaned in the above-described process of data analysis will be outlined in the following section.

KEY INSIGHTS FROM THE STUDY

We begin by reviewing the data in the order of the rounds of activities the participants engaged in. It has become widely acknowledged that, instead of adding a discussion section at the end of a paper, action research accounts should try to create a multivocal dialogue between the researcher's evolving understanding, the data obtained together with the participants and the theoretical literature on the subject (Herr & Anderson, 2005). In line with this emerging tradition, the insights gained from the present cycle will be viewed against the backdrop of discussions in philosophical literature on environmental ethics.

(1) The session started with a warm-up activity intended to focus the group into discussing the ethical underpinnings of relationships between humans and the environment. The flowing task was given to the groups – please examine a bottle of washing-up liquid (placed on each table) and discuss which properties of the product suggest an ethical attitude towards the world. The research participants' initial understanding of ethical attitude revolved around the concept of wellbeing as a measure of value (Figure 1).
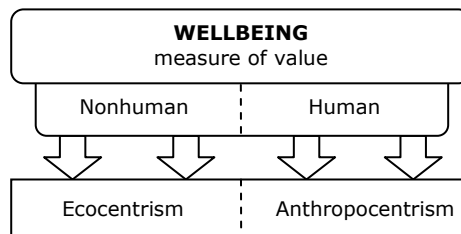
Figure 1. Initial understanding of ethical attitude

As seen from Figure 1, we categorised the research participants' responses as having an anthropocentric and an ecocentric orientation, which are not necessarily mutually exclusive. An anthropocentric understanding of ethics discussed by the students regards human wellbeing as a measure of value. For instance, a product (in this situation the washing-up liquid) is deemed valuable and as exemplifying an ethical attitude towards the world because it has a positive influence on human physical comfort (easy to use), health (protects your hands), financial profit (low cost), positive emotional experiences (pleasant aroma and colour, with images of flowers and heart on the label). An ecocentric conception of ethics, on the other hand, emphasises the wellbeing of the non-human entities in the natural environment as the measure of value – the research participants believe that, for instance, observing animal rights in the process of production (product not tested on animals) increases value while the use of non-nature-friendly materials (plastic) reduces value. At this point in our study, the frames of reference that the students used to make sense of the ethics of relationships between humans and non-human nature tended to be anthropocentrically oriented because the students more readily come up with ideas concerning human rather than non-human wellbeing as an ethical measure of value.

The view on environmental ethics captured in Figure 1 falls within the scope of the consequentialist tradition (Palmer, 2003; Elliot, 2009) because an ethical quality is attributed to (inter-)actions which yield the best possible consequences for individual organ-

isms, be they human or non-human (in our case the consequence of increased wellbeing). As stated above, the two values orientations (anthropocentric and ecocentric) are not necessarily mutually exclusive. An action can be said to benefit the wellbeing of both humans and nonhumans. In case of conflicting interests, though, a decision needs to be made between the two. According to Palmer (2003), it is a matter of setting priorities for making ethical decisions. Kahn (2003), on the other hand, relates disconnect between environmental attitude and behaviour to our multiple identities, varying in significance depending on situation and context. The obtained data suggest the necessity to foster the development of the prospective teacher's ecological identity in the teacher education process in order to promote pro-environmental attitudes and action.

(2) As the session progressed, the teams addressed a set of three interrelated questions: *How do I recognise an ethical activity? How does nature help people make ethical decisions? How does the Universe help people make ethical decisions?* The students explored the first of these three issues by chiefly focusing on the manifestations of an ethical attitude in a person's conduct (characterised by balancing care for oneself and others) as well as lightly touched upon learning as the chief means for promoting an ethical attitude. Care in this instance is regarded as concern for someone or something that grows into actions undertaken for their benefit in order to improve their situation (Martin, 2007). Key insights from the participants' reflections are outlined in Table 2.

Table 2. Recognising an ethical attitude: students' perspectives

		Category	Examples
Manifestation	**Balance between care for self and others**	Considerate and respectful treatment of others, especially the most vulnerable	*Attitude towards animals, people, children; Equal attitude to those who are poor*
		Selfless responding to the needs of others	*In our opinion an ethical attitude is all the good that we do to others without expecting and getting anything in return ... not being indifferent, not passing by when someone needs help*
		Honouring one's work and duty	*Work ethics – my attitude towards work, work duties*
		Valuing one's socio-cultural heritage	*National traditions, culture, (festivities, anthem, language)*
		Religious and ethnical tolerance	*Religious ethics – someone is Christian [Catholic], someone else Russian Orthodox – how to bring the children up. Attitude towards Jews and Roma people*
		Politeness in linguistic interaction with others	*The way one starts talking to strangers and acquaintances. Intergenerational communication – do children listen to their grandparents?*
		Care for oneself	*Care for oneself – appearance, clothes, cosmetics*
Source	**Learning**	Upbringing	*...one acts ethically because one has been brought up well and thus is understanding and respectful towards other persons*
		Formal education	*School*
		Learning from experience	*...school of life – experience*

Care for oneself (particularly one's external appearance) might be considered a controversial issue. On the one hand, this item tends to suggest strong associations with a shallow, egocentric ethic. On the other hand, care for oneself denotes a healthy observation of the norms of propriety (avoiding slovenliness which others might find offensive) and thus implies respect for the socially accepted norms of public life. It is thus a question of balance – harmonising care for one's own needs and those of others. Yet, all in all, when discussing this question, the research participants tended to focus on human ethics (human relationships in the social world) and give little regard to the environmental dimension of ethics (relationships between humans and non-humans in the natural world). In other words, a tendency emerges in the research participants' reflections to consider humans more worthy of ethical consideration as, indeed, care for non-human others only appears in the first category. This tendency highlights a need for a more inclusive ethic – by broadening future teachers' scope of moral considerability (Rolston, 1988; Leopold, 2003) to include non-human nature. Crucially, we do not imply a complete and radical replacement of anthropocentric ethic with an ecocentric one, but tend to agree with Curry (2006) who advocates supplementing the former with the latter.

After all, we humans depend on non-human nature for our survival, which entails a certain amount of harm to nature. And yet our human interests should, wherever possible, be tempered so as not to override our responsibility before other members of the Earth's biotic community of life. The principle of frugality and minimal harm should guide our treatment of nature. Thus, harmonious coexistence between humans and nature, underpinned by respect and care for life, becomes an ethical ideal (Rolston, 1988; Taylor, 2011) which should be acknowledged by pre-service teachers who are training to become custodians of the young, directly responsible for their upbringing in an inclusive and sustainability-oriented spirit.

The second activity in this round invited the research participants to share their perspectives on nature as a point of reference for making ethical decisions. When contemplating how nature helps people act ethically, the pre-service teachers focused on the various ways nature affects humans (Table 3).

Table 3 suggests that, when contemplating the various influences that non-human nature has on people, the research participants were in fact discussing the value that nonhuman nature holds. Some utterances testify that the pre-service teachers regard nature as having instrumental value (Light & Rolston, 2003; Keller, 2010), int. al. resource value and aesthetic value (Leopold, 2003; Palmer, 2003). The students value nature for giving them sustenance, preserving their health and providing aesthetic experiences. In this respect, nature is seen as deserving ethical consideration due to it through providing resources for satisfaction of human needs and increasing human wellbeing. Conversely, other comments indicate that nature is regarded as having an intrinsic value (Becker, 2009; Taylor, 2011), as valuable in its own right, deserving love and care by virtue of being alive and performing its mission. As students posited, "there is nothing superfluous in nature, everything has its own place, everything is important".

Table 3. Nature as a reference point for making ethical decisions: students' perspectives

	Category	Examples
Physical influence	Effects of natural physical processes on human state of being	*Weather (decisions, behaviour)*
	Opportunities to satisfy basic human needs	*Nature enables us to be healthy, beautiful, in a good mood, sated*
Emotional influence	Love and sensitivity	*We love animals, do not hurt them*
	Feeling of belonging to the community of life	*Plants and animals are nature, humans are nature and it [nature] is free and alive – it is a whole*
Educative influence	Learning from example	*In our opinion, nature shows us examples of how we should live*
	Learning from negative consequences of one's actions	*From past experience (flood-dam). By getting to know nature, we understand it and realise that we can't break nature's laws*
Influence on actions	Tendency to preserve natural balance	*There is nothing superfluous in nature, everything has its own place, everything is important. We understand it that is why we treat it [nature] with care*
	Involvement in nature protection activities	*Planting forests – quite a popular activity. Creating natural parks and restricted areas. Sorting waste. The Earth Hour – a global initiative when lights are turned off all round the world*

Other comments in Table 3 affirm the evolutionary and ecological axiom that humans are indeed a part of nature (Callicott, 1997). By stating that plants, animals and humans are all elements of nature, which is conceived as a living whole, the research participants seem to extend their ecological selves to encompass all the other members of the Earth's community of life. In Fox's (2000) terms, it is a cosmologically grounded identification with everyone that is, originating from a deep awareness of humans and all other beings as parts of a single unfolding reality which has evolved and differentiated over time into various species and forms of life. According to Naess (1989), such identification is the ultimate interpretation of love whereby we lose part of our own identity to gain a greater one. The research participants succinctly capture this very idea in a semi-verbal form by using the following pictogram:

🧍 + nature = ❤ > feelings

Thus, harmonious unity of humans and non-human nature (inclusion in the Earth's community of life) is seen as a manifestation of the highest feeling of love to all life.

Another important insight from the research participants revealed in this round is that nature has an educative capacity – it teaches us how to act ethically. This idea echoes current discussions among ecophilosophers. For instance, Becker (2009) interprets nature as a repository of purpose and value and claims that moral norms and rules can be derived from the natural order of biotic systems. In a similar vein, Rolston (2000) argues that reflection about nature and its processes gives us a moral lesson on living. Thus, nature is regarded as a source of ethical practical wisdom, also known as phronesis (Salīte, Gedžūne, & Gedžūne, 2009). According to Rolston (2000), moral virtue and wisdom can be achieved via attunement to nature, its rhythms and rules – by "following nature" (p.

237), i.e. becoming sensitive to its flow through us and its effects on the habits of our lives. It is a matter of opening our minds, hearts and bodies, of becoming immersed or included in the Earth's community of life to learn the wisdom of participation in a celebration of joint sustainable living in a harmonious, mutually enhancing or symbiotic way with our fellow beings.

In view of the discussion above, we are inclined to conclude that, at this point of the study, the anthropocentric frames of reference that the research participants use for viewing the ethical underpinnings of relationships between humans and nonhuman nature appear to exhibit definite ecocentric, inclusive nuances. When discussing the ways the Universe helps people make ethical decisions, the students focus on the various ways in which the Universe affects humans (Table 4).

Table 4. Universe as a reference point for making ethical decisions: students' perspectives

	Category	Examples
Physical influence	Effects of the physical processes in the universe on human state of being	*Geomagnetic storms and moon cycles affect human health*
Influence on the mind	Knowledge about the physical processes and laws of the universe	*Having studied the universe, humans have acquired such privileges which help to predict weather, earthquakes, high and low tides*
	Awareness of one's origin and mission	*When a person understands the concept of the Universe and thinks about higher issues, when he understands where he comes from, he also realises where he is heading and starts making decisions that take the Universe into account. He is aware of himself, his family and community*
Influence on the spiritual world	Respect towards the great unknown	*The universe is something that can never be fully studied*
	Human soul as the source of ethical decisions	*When discussing the ethical, the answer comes from the soul*

As seen from Table 4, the research participants believe that the Universe has a noticeable influence on human ways of being in the world, on our ethical or unethical conduct. And this influence is holistic in that it affects a person as a whole – as a physical, rational and spiritual being. Appreciation of these multiple influences is a key to developing an ethical attitude towards the world for, as Leopold (2003) puts it, we can only be ethical to something we can see, feel, understand and love. Thus, the students' reflections echo an image of a human being as described by Callicott (1997) – a being essentially connected with the world through ecological dependencies on other beings in the environment. The world affects us physically, cognitively, emotionally and spiritually, and we affect the world in return. In this perspective, an individual is seen as a knot in a set of dynamic social and ecological relations or as an intersection of an ever-changing ecosocial web of life (Callicott, 1997). Thus, Table 4 suggests that the research participants possess an awareness of our profound involvement with and dependence on the natural world perceived as a whole – a great and mysterious dwelling place for life, worthy of respect in our decisions and actions towards it. According to the students' insights, the interrelatedness and interdependence of everything in the Universe helps us become aware of our belonging to the community of life, feel a sense of kinship with this great family,

develop an idea of being rooted, grounded or included in it. This deeply felt awareness of one's origin, place and mission in the Universe is seen as a reference point for ethical (inter-)action in and with the world.

At the same time, some of the research participants' comments appear quite anthropocentric in their nature. For instance, one team in the inquiry group claims that the ethical value of the Universe lies in it helping us realise the importance of respecting each person's individuality – every human being's beliefs, desires and aims are regarded as inviolable, they should never be condemned or judged as wrong because they are all a part of a greater universal scheme. Thus, the team attributes objective value (Palmer, 2003) to everything, including humans and the fruits of their mind and spirit, merely on account of their existence and being part of the Universe. Yet it seems to us that such an approach to ethics is liable to criticism because it demeans the fact that some of the human desires and aims can be harmful and even destructive to the world at large. To our mind, a more critical and sustainable ethical stance is required which would acknowledge the primacy of the interests of the Earth's community of life over individual human ones. It would mean adopting a stance of moral holism rather than moral individualism – recognising the highest value of wholes rather than parts (Singer, 2003).

(3) During the third round of the session, the major question that the research participants reflected on was the following: *How does egoism affect an ethical attitude and why do you think egoism has such an influence?* Key insights from this reflection are summarised in Table 5.

As seen from Table 5, the students believe that egoism taken to extremes (own interests as the sole point of reference and total disregard for others) is morally reprehensible. Such a position is seen to have originated from a misbalance between human rationality and emotionality. Human reason underpins what Curry (2006) terms "savage justice" (p. 10) which essentially means that an individual acts upon a belief that is entitlement to satisfy all personal needs and wants without any consideration for others. The students view this stance as related to a lamentable lack of sensitivity and empathy and results in all the parties involved suffering negative emotional experiences. These findings suggest that, in order to temper human egoism and balance care for self and others, appeal to reason is insufficient. This idea is reiterated in philosophical literature. According to Leopold (2003), duty towards human and non-human others (int. al. the Earth) has no meaning without conscience, which is an affair of the mind as well as of the heart. Developing an ecological conscience requires an internal change in our intellectual emphasis, loyalties, affections and convictions (Leopold, 2003). Thus, the philosopher speaks of a fundamental transformation in our frames of reference – holistic changes in how persons affectively experience and conceptually systematise their experience of the world (Yorks & Kasl, 2006). This change is fundamental since it takes a human being down from the top of the anthropocentric pyramid. It entails a redefinition of self in relation to nature – a realisation that the world does not belong to us but we belong to and in it (Rolston, 1988), that we are beings of and within nature (Becker, 2009).

Table 5. Impact of egoism on an ethical attitude: students' assumptions

	Category	Examples
Individualism and instrumentalism	Primacy of personal good over that of others	*An egoistic person first thinks about him-/herself, about own needs, desires and possibilities, not bothering about other people*
	Indifference-induced hurting of the living nature and its support system	*He treats nature with indifference, pollutes and destroys it, breaks trees, hurts animals, etc.*
	Selfish leadership by imposing servitude	*An egoist is a good leader; others obey him because he knows what he needs; others serve to fulfil his needs – it is unethical with regard to others; there is no equality*
	Dishonest seeking of personal profit	*Cheating people for personal profit*
	Transferring responsibility to others – justifying one's egoism with that of others	*A person understands that no one else will take care of him, so he must do it himself. We must be egoistic so as not to be trodden upon by others*
Emotionality and rationality	Failure to consider the consequences of one's actions	*A person does not think about nature, for instance, the harm done to it by using washing up liquid*
	Failure to be aware of one's interrelatedness with all else	*Not being aware of the mutual link*
	Lack of sensitivity and empathy	*He feels superior to all else and has no regard for others' feelings*
	Causing negative emotional experiences	*Due to egoism, other people's feelings get hurt*
	Emotional wellbeing and harmonious relationships owing to tempered egoism	*But he is not always happy with his egoism, and, in order to live in harmony, maybe he should also think about others, about the surrounding environment*
Compatibility of egoism and ethics	Tempering one's egoism for the sake of own future good	*In ten years' time, I want to be given a place to sit when riding a bus. That is why I now give my place to others so that children (the next generation) do not forget the norms of ethics and propriety*
	Seeking balance between care for oneself and others	*In conclusion, we can say that we need to think about ourselves, but we mustn't forget about others as well*
	Role of education in reducing egoism	*To educate others*
	Inconsistency of egoism with ethics	*Ethics is incompatible with egoism. Because an egoist only sees and thinks of himself and his own needs. He does not realise that he is a part of the universe and that due to his egoism others get hurt*

(4) At the end of the session, a final question was asked to trigger a generalisation of the insights gained thus far and an integration of the diverse opinions voiced into the groups' joint perspectives. The questions posed were as follows: *Do you consider the current human attitude towards our shared world to be ethical? Why do you think so?* We thus intended to surface the assumptions that the groups hold about the nature of ethical attitude towards the world. Our insights from the participants' answers are summarised below (Table 6).

Table 6. Frame of reference for making sense of ethical attitude in the inquiry group

	Category		Examples
Twin pillars of ethical attitude	**Understan-ding**	Diversity in the conception of the ethical	*Human attitude towards the world is both ethical and unethical. Due to different ways of thinking and different opinions, people's attitudes towards the world can vary considerably, i.e. each has their own opinion, which changes conception of the ethical*
	Affectively-receptive stance	Priority of emotionality over rationality	*...for you can only treat others ethically if you feel them with your heart and soul, but in their daily life many people forget about it and only think with their head*
		Appreciated link with the Universe in an inclusive worldview and assumptions	*Each of us has a link with the Universe which creates our assumptions about life and surrounding environment*
Manifestation of (un)ethical attitude	**Action**	Awareness not followed by action	*Most people can think ethically and they do possess an ethical attitude, but only a few can also do ethical things in this world. Humans have forgotten that an attitude necessitates action. 99% have an attitude, but only separate individuals actually act upon it*
		Effects of the market paradigm on people's conduct	*The majority of people do not treat our world ethically; for the sake of money they cut down forests, use cars for their own comfort, pollute the environment and do not think about others who surround them*
		Egoistic conduct	*... nowadays many people are egoists who only think about themselves, their own desires and needs so their attitude, for the most part, is unethical*
Source of ethical attitude	**Learning**	Education of the mind via experience and formal learning	*Education, experience*
		Education of the soul via family, school and self-education	*The ethical can be found where there is education and culture; where such basic principles as good and bad are learned in the family, through life experience and in unegoistic people*

As seen from Table 6, the research participants recognise the dominance of the market paradigm (O'Sullivan, 1999) as a human mind-set. They acknowledge that people's frames of reference have become distorted and contaminated with egoism, materialism and obsession with comfort. In this perspective, everything is seen as possessing merely an instrumental value, and, consequently, people see no grounds to sacrifice their own interest for the sake of others. These concerns are reiterated in the writings of ecophilosophers who speak of a consumption cult (Curry, 2006) in a consumption oriented civilisation (Ip, 2009), regarding the present ecological problems as having stemmed from a deeper ideological crisis in our minds (Keller, 2010), which have become dominated by an egoistic pursuit of profit. Thus, our relationships with the environment are driven by simplified rationalism and economic interest (Sylvan, 2003). As succinctly pointed out by Leopold (2003), the Earth is still a property and our relationships with it are economical – they entail privileges but no responsibility. Opotow, Gerson and Woodside (2010) acknowledge it as a psychological problem rooted in our understanding of the relationships with nature that are characterised by denial of our responsibility as individuals or collectives

for aggravation of environmental degradation and exclusion of nature from our scope of justice. Such an attitude towards the world is clearly unethical.

At the same time, the research participants acknowledged that a close link with the universe underpins human frames of reference, and it should be appreciated if we want to achieve harmony in our relationships with the environment. Drawing inspiration from Dewey's philosophy, Brereton (2009) calls this link with the world a pre-human level of experience that is common to our entire species and, though dormant, is still present in modern man.

Table 6 also suggests that, in the research participants' opinion, an ethical treatment of human and non-human others stems from affective ties supported by love and empathy rather than cold reason alone: "you can only treat others ethically if you feel them with your heart and soul but in their daily life many people forget about it and only think with their head". This comment provided by one of the teams, almost verbatim, echoes the appeal voiced by Martin (2007) in favour of an ethic of care for the environment which is underpinned by a capacity to switch between a receptive intuitive and a rational objective mode of consciousness, achieving a blending of emotive and rational thought. Thus, an ethic of care is perceived by Martin (2007) to be grounded in a vital capacity "to think with the heart as well as with the head" (p. 61). It is promising that the very same idea emerges as one of the key insights reached by the pre-service teachers in this study.

Environmental philosophers emphasise how important it is to build an education for sustainability around this insight. Curry (2006) claims that the way to overcoming the ecological crisis and building sustainable relationships between humans and non-human nature bridges rationality and emotionality, requires not only intellect, but also emotions and spirituality. Belousa (2006) underscores spirituality as a crucial condition of sustainable education that aims to ensure a balance between people and their environment. This standpoint is shared by Reason (2007) who claims that the aim of sustainability advocates an education integrating intellectual understanding with aesthetical, emotional and spiritual dimensions. This appeal is further expanded by King (2010) who makes an explicit call for an education of the human spirit – an education promoting community, responsibility and belonging, as well as nourishing in learners a sense of love, hope, wonder and sensitivity towards nature. King (2010) believes that such a transformation, grounded in a spiritual sensitivity and oriented towards forging inclusive relationships with the world, can be achieved dialogically and reflexively. In this light, our present endeavour to involve pre-service teachers in experience-based reflection on and discussion of the ethical underpinnings of relationships between humans and non-human nature becomes a step in the direction of such a transformation.

FEEDBACK FROM PARTICIPANTS

Qualitative feedback was elicited from the students at the end of the learning session in order to appraise the strong and weak points of the latter through the eyes of the participants who are, after all, the main figures in any action research. The self-evaluation sheets used for the purpose contained three broad open-ended questions with a number of somewhat narrower sub-questions that focused on the following areas: (1) general evaluation of the

session; (2) evaluation of the group work and (3) evaluation of the form and content of the session. Giving feedback was voluntary, and the research participants were active in providing it – 24 of the 26 participants submitted their evaluation sheets to the facilitator. Qualitative content analysis of the obtained data suggests the following tendencies.

Most appreciated aspects of the session include:

- *form*: opportunities to draw on personal experiences, exchange ideas (voice own perspectives and hear those of others), engage in a discussion to gradually reach personally meaningful conclusions about the issue under study;
- *content*: exploration of previously unexamined issues;
- *relationships*: learning about peers and becoming closer to them, expressing own beliefs and emotions, experiencing a sense of being listened to and appreciated by others;
- *environment*: a relaxed, peaceful, positive atmosphere without pressure.

Though nearly all of the participants claimed to be fully satisfied with the session, some of the least appreciated aspects that were mentioned include:

- time constraints – too long and exhausting a session but too little time for exploring concrete questions;
- lack of involvement from all group mates;
- difficulty to reach a group consensus due to a marked diversity of opinions.

Major gains from the session especially appreciated by the research participants are:

- *reflexive gains*: looking beyond the obvious, a deeper insight into various ways of seeing the world and acting within it, enriching own perspective through hearing others' ideas;
- *personality gains*: greater confidence, an increased belief in own abilities (through having found expression to one's voice, having been given opportunity to express one's position);
- *relational gains*: a more meaningful meeting with fellow students and getting to know them on a more personal level;
- *educational gains*: increased propositional knowledge (terminology – concepts and relationships between them).

Thus, we feel encouraged to conclude that the students appear satisfied with the session, placing the greatest value on being given an opportunity to deepen their reflexivity (discursively explore previously unexamined assumptions and enrich perspectives on significant issues) in a supportive, dialogical learning environment as well as strengthen relational ties within the group.

CONCLUSION

Upon completing the account of our experience of involvement in an educational action research cycle with pre-service teachers, we would emphasise that the data analysed in the present paper are not a random collection of information. Neither are they to be re-

garded as organised strictly linearly, illustrating a sequential progression from one idea to the next. On the contrary, the structure of the session was cyclical in its nature and entailed a repeated return to already examined issues to view them from a slightly different angle in a true spirit of action research (Bradbury & Reason, 2003). Although the principle of linear presentation was observed in this paper, it was merely done so for the sake of easing perception for the readers. Hence, in our opinion, the generated data should rather be regarded as a web – a loose fabric of ideas woven by the research participants during the session and by the researchers during subsequent analysis, where some of the ideas are highlighted in brighter hues while others appear as only slightly touched upon and therefore rather muted. In conclusion to the present paper, we would like to pinpoint some of the key insights that emerged from this action research cycle about the assumptions that underlie the research participants' frames of reference for viewing environmental ethics – those insights that stand out as a constant thread throughout the entire fabric of data extending over all of the reflexive rounds.

Thus, the pre-service teachers who participated in our study tend to make sense of the ethical underpinnings of relationships between humans and our non-human natural environment by highlighting the following considerations:

- recognition of anthropocentric and ecocentric values orientations grounded in perception of human and nonhuman wellbeing as a measure of value;
- balancing care for self with care for human and nonhuman others as a key to achieving ethical attitude towards the world and reconciling anthropocentrism with ecocentrism;
- harmonising rationality and emotionality to achieve ethical attitude towards the world;
- appreciation of the role of holistic education (of both mind and spirit) in developing ethical attitude towards the world;
- recognition of both instrumental and intrinsic value of nonhuman nature as a path towards achieving ethical attitude towards the world;
- development of one's ecological self through appreciation of one's inclusion in the Earth's community of life as a pillar of ethical attitude towards the world;
- appreciation of our interdependence with the world, our origin, place and mission in the great interrelated web of life as a reference point for ethical (inter-)action with(in) it;
- inclusion in the Earth's community of life as a source of phronesis or moral practical wisdom of sustainable living.

Our experience of engagement in this educational action research cycle with prospective early childhood teachers suggests the following implications for the implementation of ethically concerned teacher education for sustainability:

- teacher education for sustainability should involve students in experience based, reflexive and discursive inquiry into the ethical underpinnings of our being in the world and interacting with it; these concerns of meaning, value and purpose (educational metacontent) should become the focus of such an education;
- teacher education for sustainability should be holistic in a sense of addressing not only the mind but also the heart and spirit, seeking not only knowledge about

sustainability, but also the wisdom of sustainable living which entails and appreciation of the need for inclusion in the Earth's community of life, grounded in a sense of kinship with the world and an awareness of belonging to an interrelated and interdependent web of life;

- the form of education for sustainability should match its content, notably, issues of inclusion in the Earth's community of life should be explored in an inclusive environment that promotes learning in relationships – is conductive to caring and sharing, openness, relatedness, sensitivity and community.

Finally, we would stress that action research is a journey – a never-ending inquiry into one's practices and assumptions that underlie them. In our case it unites as fellow-travellers a group of future preschool and basic school teachers and researchers who are jointly seeking ways to improve their practices – ways of seeing the world and interacting with it in a sustainable manner, int. al. ways of implementing teacher education for sustainability. Therefore, this study is not a journey's end; it is just a milestone passed on the winding path of inquiry which leads on to new questions and insights.

ACKNOWLEDGEMENT

REFERENCES:

Becker, G. K. (2009). Je suis le grand tout: Respect for nature in the age of environmental responsibility. In K.-T. Ip (Ed.), *Environmental ethics: Intercultural perspectives* (pp. 23–42). Amsterdam, the Netherlands and New York, USA: Rodopi.

Belousa, I. (2006). Defining spirituality in education: A Post-Soviet perspective. In M. de Souza, G. Durka, K. Engebretson, R. Jackson & A. McGrady (Eds.), *International Handbook of the Religious, Moral and Spiritual Dimensions in Education, 1* (pp. 215–230). Dordrecht, the Netherlands: Springer.

Bradbury, H., & Reason, P. (2003). Action research: An opportunity for revitalizing research purpose and practices. *Qualitative Social Work, 2*(2), 155–175. DOI: 10.1177/1473325003002002003.

Brereton, D. P. (2009). Why sociocultural anthropology needs John Dewey's evolutionary model of experience. *Anthropological Theory, 9*(5), 5–32. DOI: 10.1177/1463499609103545.

Callicott, J. B. (1997). *Earth's insights: A survey of ecological ethics from the Mediterranean basin to the Australian outback*. Berkeley and Los Angeles, USA and London, England: University of California Press.

Curry, P. (2006). *Ecological ethics: An introduction*. Cambridge, UK and Malden, USA: Polity press.

Druckman, D. (2005). *Doing research: Methods of inquiry for conflict analysis*. Thousand Oaks, USA: Sage.

Elliot, R. (2009). The normative side of nature. In K.-T. Ip (Ed.), *Environmental ethics: Intercultural perspectives* (pp. 11–21). Amsterdam, the Netherlands and New York, USA: Rodopi.

Flick, U. (2007). *Designing qualitative research* (Book one of the SAGE Qualitative Research Kit). London, UK, Thousand Oaks, USA and New Delhi, India: Sage.

Fox, W. (2000). Transpersonal ecology and the varieties of identification. In J. Benson (Ed.), *Environmental ethics: An introduction with readings* (pp. 253–262). London, UK and New York, USA: Routledge.

Herr, K., & Anderson, G. L. (2005). *The action research dissertation: A guide for students and faculty.* Thousand Oaks, London, New Delhi: Sage

Ip, K.-T. (2009). Environmental ethics: An introduction. In K.-T. Ip (Ed.), *Environmental ethics: Intercultural perspectives* (pp. 1–9). Amsterdam, the Netherlands and New York, USA: Rodopi.

Kahn, P. H. Jr. (2003). The development of environmental moral identity. In S. Clayton & S. Opotow (Eds.), *Identity and the natural environment: The psychological significance of nature* (pp. 113–134). Cambridge, USA: MIT Press.

Keller, D. R. (2010). Introduction. In D. R. Keller (Ed.), *Environmental ethics: The big questions* (pp. 1–24). Chichester, UK: Blackwell Publishing Ltd.

Kelly, P. (2006). Learning for sustainable futures: One intervention. *Journal of Future Studies, 10*(3), 1–14.

King, U. (2010). Earthing spiritual literacy: How to link spiritual development and education to a new Earth consciousness. *Journal of Beliefs and Values, 31*(3), 245–260. DOI: 10.1080/13617672.2010.520998.

Lee, R. M., & Fielding, R. (2004). Tools for qualitative data analysis. In M. Hardy & A. Bryman (Eds.), *Handbook of data analysis* (pp. 530–544). London, UK, Thousand Oaks, USA and New Delhi, India: Sage Publications.

Leopold, A. (1991). Ecological conscience. In S. L. Flader & J. B. Callicott (Eds.), *The river of the mother of God and other essays by Aldo Leopold* (pp. 338–346). Madison, Wisconsin, USA and London, England: The University of Wisconsin Press.

Leopold, A. (2003). The land ethic. In A. Light & H. Rolston III (Eds.), *Environmental ethics: An anthology* (pp. 38–46). Malden, USA, Oxford, UK, Victoria, Australia and Berlin, Germany: Blackwell Publishers Ltd.

Light, A., & Rolston, H. III. (2003). Introduction: Ethics and environmental ethics. In A. Light & H. Rolston III (Eds.), *Environmental ethics: An anthology* (pp. 1–12). Malden, USA, Oxford, UK, Victoria, Australia and Berlin, Germany: Blackwell Publishers Ltd.

Martin, P. (2007). Caring for the environment: Challenges from the notions of caring. *Australian Journal of Environmental Education, 23*, 57–64.

Maurer, M., & Githens, R. P. (2009). Toward a reframing of action research in human resource and organization development. *Action Research, 8*(3), 267–292. DOI: 10.1177/1476750309351361.

Naess, A. (1989). *Ecology, community and lifestyle: Outline of an ecosophy.* Cambridge, UK: Cambridge University Press.

Naess, A. (2000). Identification, oneness, wholeness and self-realization. In J. Benson (Ed.), *Environmental ethics: An introduction with readings* (pp. 243–251). London, UK and New York, USA: Routledge.

O'Sullivan, E. (1999). *Transformative learning: Educational vision for the 21st century.* London, UK and New York, USA: Zed Books, in association with University of Toronto Press.

Opotow, S., Gerson, J., & Woodside, S. (2010). From moral exclusion to moral inclusion: Theory for teaching peace. *Theory into Practice, 44*(4), 303–318.

Palmer, C. (2003). An overview of environmental ethics. In A. Light & H. Rolston III (Eds.), *Environmental ethics: An anthology* (pp. 15–37). Malden, USA, Oxford, UK, Victoria, Australia and Berlin, Germany: Blackwell Publishers Ltd.

Reason, P. (1999). Integrating action and reflection through co-operative inquiry. *Management Learning, 30*(2), 207–226. DOI: 10.1177/1350507699302007.

Reason, P. (2006). Choice and quality in action research practice. *Journal of Management Inquiry, 15*(2), 187–203. DOI: 10.1177/1056492606288074.

Reason, P. (2007). Education for ecology: Science, aesthetics, spirit and ceremony. *Management Learning, 38*(1), 27–44. DOI: 10.1177/1350507607073021.

Rolston, H. III. (1988). *Environmental ethics: Duties and values in the natural world*. Philadelphia, USA: Temple University Press.

Rolston, H. III. (2000). Can and ought we to follow nature? In J. Benson (Ed.), *Environmental ethics: An introduction with readings* (pp. 237–242). London, UK and New York, USA: Routledge.

Salīte, I., Gedžūne, G., & Gedžūne, I. (2009). Educational action research for sustainability: Seeking wisdom of insight in teacher education. *Journal of Teacher Education for Sustainability, 11*(2), 14–30. DOI: 10.2478/v10099-009-0037-y.

Singer, P. (2003). Not for humans only: The place of nonhumans in environmental issues. In A. Light & H. Rolston III (Eds.), *Environmental ethics: An anthology* (pp. 55–64). Malden, USA, Oxford, UK, Victoria, Australia and Berlin, Germany: Blackwell Publishers Ltd.

Stemler, S. (2001). An overview of content analysis. *Practical Assessment, Research & Evaluation, 7*(17). Retrieved September 30, 2011, from http://PAREonline.net/getvn.asp?v=7&n=17

Sylvan (Routley), R. (2003). Is there a need for a new, an environmental, ethic? In A. Light & H. Rolston III (Eds.), *Environmental ethics: An anthology* (pp. 47–52). Malden, USA, Oxford, UK, Victoria, Australia and Berlin, Germany: Blackwell Publishers Ltd.

Taylor, P. W. (2000). Respect for nature. In J. Benson (Ed.), *Environmental ethics: An introduction with readings* (pp. 215–222). London, UK and New York, USA: Routledge.

Taylor, P. W. (2011). *Respect for nature: A theory of environmental ethics*. Princeton, USA and Woodstock, UK: Princeton University Press.

Wong, E. S. (2008). Explication of tacit knowledge in higher education institutional research through the criteria of professional practice action research approach: A focus group case study at an Australian University. *International Journal of Doctoral Studies, 3*, 43–58.

Yorks, L., & Kasl, E. (2006). I know more than I can say: A taxonomy for using expressive ways of knowing to foster transformative learning. *Journal of Transformative Education, 4*(1), 43–64. DOI: 10.1177/1541344605283151.

Latvian mathematics teachers' beliefs about their profession and teaching process expressed through metaphors

Liene Kvedere and Anita Pipere

Daugavpils University, Latvia

ABSTRACT

The study aims to examine Latvian mathematics teachers' beliefs about their profession and their emotional state as expressed through metaphors. Teachers (N=390) were asked to provide the metaphor of a teacher and its explanation. Metaphors were classified by two raters using the categories describing teachers' professional identity – teachers as subject/didactics/pedagogical experts. Besides, hybrid, contextual, and self-referential metaphors were elicited. At the same time, each metaphor was evaluated for emotional tone as expressing positive, negative or neutral emotions. The results indicate that teachers used the self-referential, didactics expert, and hybrid metaphors most often. Emotions expressed in metaphors were mainly neutral. The authors conclude that teachers have a strong personal identification within their profession. According to the metaphors, a teacher has to be an expert in many fields but didactics dominates. Certain impacts of teacher's age, education, place of residence and education programme at school on teacher's metaphors illustrate the contextual nature of teachers' beliefs.

Key words: metaphors, beliefs, emotions, mathematics teachers, teaching

INTRODUCTION

Important reforms in education system of Latvia are taking place at the moment, especially in the field of mathematics education. Historically, teacher-centred and traditional teaching methods prevailed in Latvian schools, but during the last decades educators are trying to change the situation hoping to improve students' attitude towards mathematics and their achievement in mathematics. Unfortunately, the results are not pleasing. According to data provided by the Ministry of Education of Latvia (2010), during the school year 2010/2011 competition for state-funded budget places in higher education programmes of Social Sciences, Commercial Sciences and Law was 12.4 persons for one place but in the Mathematics programme only 4 persons for one place. Graduates of secondary schools are not willing to enter the higher education programmes which major in mathematics, some of students already in secondary school have chosen programmes where they have a minimum of mathematics lessons. However, now it is widely recognised that among all factors influencing students' learning teachers play an important role in shaping students' attitude towards the subject and their achievements.

The focal point of given research is the beliefs of teachers about their profession and teaching process. Beliefs are one of the most difficult concepts to define. Although educational literature has paid great attention to teachers' beliefs, there is still no clear definition of beliefs. In general, beliefs could be defined as judgements and evaluation that we make about ourselves, about others and about the world around us (Yero, 2002) but teachers' beliefs could be described as teachers' opinions about the nature of teaching and learning (Aguirre & Speer, 2000).

At present, we should value the capacity of individuals to reflect on personal experiences, beliefs, world views and to challenge accepted ways of interpreting and engaging in the world (Australian Research Institute in Education for Sustainability, 2009). It is important to disclose how teachers look at their profession, what they think and how they feel about their work.

In this paper, we will explore the Latvian mathematics teachers' beliefs about their profession. In order to understand teachers' actions, perceptions of their actions, conceptions of their roles, we need to understand their behaviour as well as beliefs associated with the behaviours, as it is found out that beliefs are linked with classroom practices (McRobbie & Tobin, 1995; Fang, 1996). The results of the previous research suggest that changing teachers' classroom behaviours and practice requires changing their conceptions of their roles in the classroom (Briscoe, 1991). That is why it is necessary to look more carefully at teachers' beliefs about their profession and teaching.

Educational researchers and practitioners are frequently posing questions about how to understand educational theory and practice better. Through the years, they have employed a variety of both quantitative and qualitative methods to explore the world of education. Each of these methods may have its strengths and weaknesses. In this study, the specific qualitative research method – metaphor analysis will be used carrying a capacity to reveal the teachers' mental landscape in a deeper and more precise fashion. Metaphors can serve as an important instrument of analysis of everyday human practices and experiences. For almost all qualitative methods of research, language is at the same time subject and medium. It is used above all as material referring to content outside

language: patterns of relationships, latent structures of meaning, communicative strategies, etc. (Schmitt, 2005).

Metaphors possess such qualities as expressibility, compactness and vividness and are better conceptualised as single ideas than individual words (Ortony & Fainsilber, 1999). Metaphor analysis can be defined as an analytical approach that examines the actual metaphors articulated by the respondent, and then categorises these metaphors in terms of conceptual metaphors in order to provide some insight into respondents' thought patterns and understanding of the definite topic (de Guerrero & Villamil, 2002). With the help of metaphors we can also judge about the emotional state of people who have written them. However, metaphors may be difficult to analyse because they are grounded in personal experiences that may be difficult to understand (BouJaoude, 2000).

In educational research, metaphors began gaining validity as a research tool when focus of researchers' attention shifted from a wider external context of educational practice to everyday realities of the classroom (Jensen, 2006). The studies of teacher-produced metaphors also help teachers to articulate and construct representations of themselves and their experience (Kramsch, 2003). Metaphors help to externalise teachers' conceptions of teaching and of themselves as teachers and reveal meaning that is difficult to access through literal language (Carter, 1990; Bullough, 1991).

Teachers of different subjects may have different beliefs about teaching/learning process. Tobin and Tippins (1996) explain this saying that teachers of different subjects participate in different academic communities during their studies and they develop different conceptions of teaching depending on the types of experiences they had in these communities. It would be necessary to add more reasons for inconsistency in beliefs of teachers delivering different subjects, namely, content of subject and its importance in curriculum. Mathematics is considered to be an important and difficult subject, and teachers of mathematics feel constant pressure that, possibly, could cause some stress and negative emotions, though, at the same time, they could feel more important as members of school and community.

The aim of this study is to investigate Latvian mathematics teachers' beliefs about the profession of teacher and teaching as expressed through metaphors. The research questions were the following: (1) *How do mathematics teachers see themselves in the present education system of Latvia?* (2) *How do they feel about being teachers nowadays?* (3) *What is the impact of teacher's age, education, place of residence and education programme at school on the content and emotional connotation of teacher's metaphors?*

SAMPLE

A wider research project allowed gathering of data from 390 Latvian mathematics teachers of forms 7–9 who were asked also to provide a metaphor describing a teacher and to explain it; 353 of them (90.5%) presented their metaphor that will be analysed in a given study. The socio-demographic information about Latvian mathematics teachers providing metaphors is summarised in the Table 1.

Table 1. Mathematics teachers' socio-demographic indicators (N=353)

Socio-demographic indicator		Number	Percentage
Age	20-39	73	20.0
	40-49	171	46.0
	50-59	127	34.0
Education	Bachelor degree	198	51.5
	Masters degree	186	48.5
Place of residence	Towns/capital Riga	165	42.3
	Provincial towns/country	225	57.7
Education programme at school	General	294	75.4
	Minorities	96	24.6

Mathematics teachers represent all five regions of Latvia and all age groups of teachers, but the dominant age group is that of 40 to 49 years. Approximately a half of the teachers have Bachelor degree and a half – Masters degree. There is a bigger number of teachers who come from provincial towns and country than those who live in towns and capital Riga. Approximately 25% of all teachers participating in this research work in schools with minority education programme.

METHOD AND PROCEDURE

The teachers were asked to finish the sentence: "A teachers is like/as a...." with their own metaphor and to provide explanation for the presented metaphor. The data from teachers were collected via email. The teachers received the survey and the last question in this survey was to provide a metaphor of a teacher. There were no restrictions regarding the length of explanations of a provided metaphor and time spent filling in the survey. The respondents' identity and records were kept confidential. Participation in the survey was voluntary; however, the teachers who participated in the study were given certificates of participation in the project.

DATA ANALYSIS

Data analysis was conducted in line with the metaphor manual worked out by Löfström, Poom-Valickis, and Hannula (2011). Their categorisation of metaphors was mainly based on three distinct knowledge bases reflecting a teacher's professional identity provided by Beijaard, Verloop, and Vermunt (2000). These are:

1) Teacher as subject expert – a teacher has a profound knowledge base in his/her subject(s). Typical features of these metaphors are focusing on the teacher, subject content, subject knowledge, knowledge, transmission, knowing details, knowing everything, having ready answers, being smart.

2) Teacher as didactics expert – a teacher who has knowledge about how to teach specific subject-related content so that pupils can capitalise their learning. Emphasis is on the creation of learning environments that support the pupil's learning process, the optimal use of teaching and learning methods, scaffolding and other support techniques. Typical features: focus on learning, teaching methods/ways of teaching, learning process, creator of learning environment, support understanding, assessment of learning, pupils' self-evaluation, meta-cognitive skills, scaffolding, explaining.

3) Teacher as pedagogical expert – a teacher who understands human thought, behaviour. Emphasis is on relationships, values, and the moral and emotional aspects of development. The teacher is seen as someone who supports the child's development as a human being. Typical features: focus on caring and upbringing, supporting growth of human beings, caring and nurturing, holistic development, parental obligations, relationship based on trust, availability, communication, person-related problem-solving, teaching values, being a role model, support. Löfström and colleagues (2011) added empirically elicited categories of self-referential metaphors, contextual metaphors, and hybrid metaphors.

4) Self-referential metaphors (Leavy, McSorley, & Bote, 2007) do not refer to acts central to teaching, students or classroom instruction. These metaphors focus on what teaching represents for the respondents as individuals. These metaphors described features or characteristics of the teacher's personality, with reference to the teacher's characteristics (self-referential) or without reference to the role or task of the teacher.

5) Contextual metaphors describe features or characteristics of the teacher's work/work environment, or in other ways refer to characteristics of the environment (contextual). One might say that the metaphors describe where (physically, socially, organisationally) or in what kind of setting or environment the teacher works.

6) Hybrid metaphors are metaphors which include elements of more than one of the above mentioned categories.

Each metaphor was coded as a five digit binary code (e.g., 0 1 0 0 0). Simple metaphors have only one "1" in their code, while hybrid metaphors have 2 or more ones. The categorisation was judged on a case-to-case basis using two raters whose coding was compared at the end. Inter-rater reliability reached 65%.

In addition, it was judged by these two raters whether the general emotional tone/affective dimension of the metaphor was positive, negative or neutral. Also, in this case, metaphor together with its explanation served as a unit of analysis.

RESULTS

The presentation of obtained data will start with some quantitative insight in the frequency of elicited categories. The metaphors provided by Latvian mathematics teachers were allocated into six previously described categories. Table 2 shows the ranking of categories starting from the most frequent one.

Table 2. Distribution of metaphors provided by Latvian teachers (N=353)

Category of metaphor	Number	Percentage
Self-referential	104	30.0
Didactics expert	92	26.0
Hybrid	86	24.0
Pedagogical expert	37	10.5
Subject expert	18	5.0
Contextual	14	4.0
Unidentified	2	0.5

The most frequently used categories of metaphors were self-referential, didactics expert, and hybrid metaphors. Teachers who provided **self-referential metaphors** (30%) refer to themselves as hard-working people who often lack time for their family, relatives, and everyday life. According to them, a teacher's work is very complicated; teachers should possess many diverse skills and emotional intelligence, for instance: *"The teacher is like a big monkey. The teacher tries to do everything well and runs around the classroom like a monkey"* or *"The teacher is like a captured goldfish. The teacher needs to fulfil all wishes of school managers, pupils' wishes, parent's wishes. What more? Wishes of Educational department and society. Be ready to serve!"*

The teacher as a **didactics expert** (26%) is described as a person who can help, advice, show an example for students but she/he cannot do anything instead of them. The teacher tries to make teaching/learning process as attractive as possible: *"The teacher is like a signpost. It shows how to reach the goal, gives knowledge and teaches how to use them, promotes improvement of skills, corrects and evaluates achievement of pupils"* or *"The teacher is like the sun. The sun provides warmth as a result of which everything grows. The teacher provides the necessary information using different methods, stimulates pupils' thinking processes and the result is a mentally developed, logically thinking person."*

Hybrid metaphors (24%) show that a teacher's work requires very different kind of knowledge and skills. Seventeen hybrid metaphors combined 3 different categories while 3 hybrid metaphors contained even 4 categories of metaphors. The structure of these hybrid metaphors is depicted in Table 3.

In **hybrid metaphors**, the most frequently combined categories were those of didactics expert and pedagogical expert. Here are some examples of hybrid metaphors: *"The teacher is like a bearer of light. The teacher is an adviser, developer of knowledge and personality"* (pedagogical expert+subject expert); *"The teacher is like a magician. Hundreds of children look at him/her every day and the teacher needs to teach and nurture them. The work of teachers is very strained; teachers need to do all possible and also impossible things in order to make pupils feel well and safe at school"* (pedagogical expert+didactics expert).

Table 3. The structure of hybrid metaphors

Structure of hybrid metaphors	Number	Percentage
Didactics expert+pedagogical expert	24	27.9
Subject expert+pedagogical expert	16	18.6
Didactics expert+pedagogical expert+subject expert	14	16.3
Subject expert+didactics expert	9	10.5
Contextual +self-referential	5	5.8
Didactics expert+self-referential	5	5.8
Pedagogical expert+self-referential	3	3.4
Pedagogical expert+contextual	2	2.3
Didactics expert+pedagogical expert+self-referential	2	2.3
Subject expert+didactics expert+pedagogical expert+self-referential	2	2.3
Subject expert+self-referential	1	1.2
Subject expert+didactics expert+self-referential	1	1.2
Subject expert+didactics expert+pedagogical expert+contextual	1	1.2
Pedagogical expert+self-referential+contextual	1	1.2

Teacher as a **pedagogical expert** is a person who makes students feel comfortable and nice at school, helps to solve their problems. The main task for these teachers is to develop students' personalities not to teach them definite subject, for instance: *"The teacher is like a good friend with strict demands. I think that pupils should see me like this"* or *"The teacher is like the second mother. Sometimes she needs to be strict, sometimes she needs to feel pity. Knowledgeable, helpful, takes care about everything."*

The teacher in the metaphors categorised as **subject expert** was described as an intelligent person who knows a lot about his/her subject and students can learn from him/her. In some metaphors it was emphasised that teachers have to improve their knowledge all the time, for instance: *"The teacher is like a source of knowledge. The information which the teacher has gained during his/her life is passed to students. Knowledge flows like a spring to different branches (students)"* or *"The teacher is like an unfinished encyclopaedia. We can find many things in encyclopaedias but we can also add some information to it. Both are the winners: the pupil and the teacher."*

In the **contextual metaphors** teacher's job is described as difficult, teachers have to struggle for or against something all the time: *"The teacher is like a good actor who daily acts on the stage. The teacher never knows whether viewers will be interested in his/her acting, whether they will respond to his/her speech or the teacher will recite his/her monologue and there will be no dialogue and positive reaction from 'viewers'."*

EMOTIONAL CONNOTATION OF METAPHORS

The results of metaphor analysis regarding their emotional connotation were as follows: in most cases, the metaphors were defined as neutral (n=267; 75%), it means that the teachers did not express any peculiar emotions in the metaphor itself or in its description. Less frequent but similar in numbers were metaphors with negative (n=45; 13%) and positive connotation (n= 41; 12%).

Neutral connotation was assigned to the metaphors in which teachers describe their profession in an indifferent way, only as a certain formal duty that has to be done, emotional attitude is almost untraceable, for instance, *"The teacher is like a signpost. The teacher does not give the solution but shows the way to it."*

Negative connotation was allotted to the metaphors where teachers describe negative aspects of their profession in general or refer to negative personal associations with their profession, for instance, *"The teacher is like a Don Quixote who fights with windmills. Nobody respects teachers' work; people think that the teacher has vacation four times a year, works only half a day and at 2 p.m. is already free of work. The salary given by government approves this view. It is a pity that also mass media add fuel to the flames."*

Positive connotation was assigned if teachers described their profession in positive light referring to themselves or a teacher's role in school/society in general, for instance, *"The teacher is like a hearth which provides warmth and love. The teacher builds bridge between a child and school, school and family."*

IMPACT OF SOCIO-DEMOGRAPHIC INDICATORS ON THE METAPHORS

The metaphors were analysed also in connection with the following socio-demographic indicators: teachers' age, their education level, place of residence and education programme implemented in the schools where they are working.

Teachers aged 40–49 mostly presented hybrid and didactics expert category metaphors. Self-referential metaphors were mainly presented by teachers aged 50–59. Pedagogical expert metaphors were the most popular among teachers aged 20–39.

There are no significant differences between the categories of metaphors presented by teachers with Bachelor degree and Masters degree. The teachers with Masters degree have stressed contextual category slightly more, while the teachers with Bachelor degree put a little more emphasis on self-referential and hybrid categories.

The most popular types of metaphors among mathematics teachers from country and provincial towns were self-referential (31.1%) and hybrid metaphors (23.9%) but the majority of teachers residing in towns and the capital presented didactics expert metaphors (26.1%).

There were no significant differences between the categories of metaphors presented by teachers from schools with minority and general education programmes except for the categories *subject expert* and *pedagogical expert*. Among metaphors provided by teachers from schools with general education programmes, there were 3.7% of subject expert metaphors and 10.2% of pedagogical expert metaphors, whereas 7.3% of teachers from minority schools provided subject expert metaphors and the same number of pedagogical expert metaphors.

The youngest teachers (20–39 years old) have less positive feelings about their profession while the most positive are teachers aged 40–49.

Surprisingly, mathematics teachers who have Masters degree are less positive describing their profession. Teachers from country and provincial towns presented more neutral metaphors than teachers from the capital and towns. However, teachers from capital Riga and towns presented more positive and negative metaphors than teachers from rural area.

Comparison of emotional connotation of metaphors provided by teachers from minority and general education programmes shows that teachers from schools with general education programme presented more metaphors with positive and also negative connotation than teachers from minority schools.

DISCUSSION AND CONCLUSION

Exploring the teachers' verbal self-representation in the form of metaphors, probing how they feel about being teachers nowadays and what is the impact of teacher's age, education, place of residence and education programme at school on the content and emotional connotation of teacher's metaphors, we have come to several conclusions.

Analysis of Latvian mathematics teachers' metaphors revealed that teachers have a strong personal identification within their profession and, according to them, the most important knowledge for a teacher is knowledge in didactics. Many teachers also acknowledged the varied nature of their professional activities and that is why their metaphors were classified as hybrids. The teachers' emotions expressed in metaphors were mainly neutral and it means either that this profession for them is just a job which has to be done or that teachers tried to suppress their emotions as a part of commonly accepted socially desirable self-representation strategy.

The self-referential metaphors as the most frequent category presented by teachers from country and provincial towns could be possibly explained by the fact that in country and provincial towns the teacher feels more important as a member of community, as a representative of entire school because in such places schools carry not only educational functions but also play an important role in social life. Teachers with Masters degree were less satisfied with their work and work conditions; probably they feel that they deserve more. The same was true for younger teachers who had the least positive feelings about their profession. Probably they had high expectations after graduating university but the reality in school proved to be different and not all theoretical knowledge is practically applicable in real teaching/learning process.

Investigating personal teaching metaphors (Bibik, 1997), health and physical education teachers (N=104) were asked to respond to the question, "A teacher is like….". Analysis of the data revealed that the dominant metaphors are teacher as a parent, protector and group leader which are quite common metaphors also for Latvian teachers. It is a difficult task to compare the results of studies about teachers' metaphors in different countries because teachers' views of their profession depend on context in which research is taking place (a teacher's role in society, government attitude towards education, etc.) (see, for instance, OECD [Organisation for Economic Cooperation and Development], 2009) and, of course, teachers of different subjects will have different views. In several studies it was shown that teachers of subjects have various views on their profession (for instance, BouJaoude, 2000).

Been invited to present and explain own metaphors would help teachers to engage into the deeper reflection about their professional practice at school. This awareness could then help to increase the effectiveness of teaching. The examination of personal metaphors could encourage a teacher to reflect on prior beliefs, assumptions and approaches

to teaching. Education should not focus solely on determining which facts or skills we need to teach but on creating learning community which will then stimulate students' development.

Among the limitations of presented research there are biased sample regarding the gender (only female participants), high level of subjectivity in the analysis of metaphors as well as the medium level of the inter-rater reliability.

In the present research we studied metaphors provided by mathematics teachers working in forms 7–9, but it would be interesting to compare metaphors presented by teachers of different subjects and working with students of different age groups.

ACKNOWLEDGEMENT

REFERENCES:

Aguirre, J., & Speer, N. M. (2000). Examining the relationship between beliefs and goals in teacher practice. *Journal of Mathematical Behaviour, 18*(3), 327–356.

Australian Research Institute in Education for Sustainability. (2009). *Education for sustainability*. Retrieved March 10, 2012, from http://www.environment.gov.au/education/publications/pubs/efs-brochure.pdf

Beijaard, D., Verloop, N., & Vermunt, J. D. (2000). Teachers' perceptions of professional identity: An exploratory study from a personal knowledge perspective. *Teaching and Teacher Education, 16*, 749–754.

Bibik, J. M. (1997). *Metaphors for teaching: How health and physical education teachers describe their roles*. Georgetown, DE: McGraw Hill.

BouJaoude, S. (2000). Conceptions of science teaching revealed by metaphors and by answering to open-ended questions. *Journal of Science Teacher Education, 11*(2), 173–186.

Briscoe, C. (1991). The dynamic interaction among beliefs, role metaphors, and teaching practices: A case study of teacher change. *Science Education, 75*, 185–199.

Bullough, R. V. Jr. (1991). Exploring personal teaching metaphors in preservice teacher education. *Journal of Teacher Education, 42*(1), 43–51.

Carter, K. (1990). Meaning and metaphor. *Theory into Practice, 29*, 109–115.

Fang, Z. (1996). A review of research on teacher beliefs and practices. *Educational Research, 38*, 47–65.

De Guerrero, M., & Villamil, O. S. (2002). Metaphorical conceptualizations of ESL teaching and learning. *Language Teaching Research, 6*(2), 95–120.

Jensen, D. F. N. (2006). Metaphors as a bridge to understanding educational and social contexts. *International Journal of Qualitative Methods, 5*(1). Retrieved January, 21, 2012, from http://www.ualberta.ca/~iiqm/backissues/5_1/pdf/jensen.pdf

Kramsch, C. (2003). Metaphor and the subjective construction of beliefs. In P. Kalaja & A. M. F. Barcelos (Eds.), *Beliefs about SLA: New research approaches* (pp. 109–128). Dordrecht: Kluwer.

Leavy, A. M., McSorley, F. A., & Bote, L. A. (2007). An examination of what metaphor construction reveals about the evolution of preservice teachers' beliefs about teaching and learning. *Teaching and Teacher Education, 23*, 1217–1233.

Löfström, E., Poom-Valickis, K., & Hannula, M. S. (2011). *Categorisation of teacher metaphors: Mannual for NorBa Project*. Retrieved January 23, 2012, form http://norbal.files.wordpress.com/2011/09/metaphor-manual.doc

McRobbie, C., & Tobin, K. (1995). Restraints to reform: The congruence of teacher and student actions in a chemistry classroom. *Journal of Research in Science Teaching, 32*, 373–385.

Ministry of Education of Latvia. (2010). *Konkursa koeficients Latvijas augstskolās* [Competition coefficient in Latvian higher education institutions]. Retrieved March, 20, 2010, from http://izm.izm.gov.lv/upload_file/Izglitiba/Augstaka_izglitiba/Konkursa_koeficients_augstskolas_2010.pdf

OECD (Organisation for Economic Cooperation and Development). (2009). *Creating effective teaching and learning environments: First results from TALIS (Executive Summary)*. Retrieved April 11, 2010, from http://www.oecd.org/edu/school/50456114.pdf

Ortony, A., & Fainsilber, L. (1989). The role of metaphors in descriptions of emotions. In Y. Wilks (Ed.), *Theoretical issues in natural language processing* (pp. 181–184). Hillsdale, NJ: Erlbaum.

Schmitt, R. (2005). Systematic metaphor analysis as a method of qualitative research. *The Qualitative Report Volume, 10*(2), 358–394.

Tobin, K., & Tippins, D. (1996). Metaphors as seeds for conceptual change and the improvement of science teaching. *Science Education, 80*, 711–730.

Yero, J. L. (2002). *Teaching in mind: How teacher thinking shapes education*. Hamilton, M.T.: Mind Flight Publishing.

Support opportunities for professional development of the novice teacher

Alīda Samuseviča

Liepāja University, Latvia

ABSTRACT

Modern society needs competent and creative teachers. Teachers' work is performed in several meta-systems that consist of interdependent subsystems. Complexity of the structure and content of education demands high-level professional performance. Furthermore, the teacher's professional development depends on various objective and subjective factors that influence pedagogical activities. In the context of social development in Latvia, the promotion of competitiveness among teachers is vital in optimising the education system. The problem addressed in this study is the management of challenges to novice teachers' professional adaptation. The implication of the research problem and social significance is confirmed by noteworthy controversies: inconsistencies in the implementation of changes in Latvian national education policy; decreasing prestige of teacher's profession in society, especially among youth; the ageing of teachers; poor motivation among young professionals to choose pedagogical career. Difficulties of training novice teachers in ways to develop their adaptability and professional identity eventually affect the performance of learners. A productive start to a novice teacher's pedagogical career anticipates targeted activities and their systemic interaction for professional support in order to satisfy the needs of all parties involved in the education process – teachers, learners and parents.

Key words: adaptation, support, novice teacher, professional development

INTRODUCTION

Competent and creative teachers are of vital importance for the wellbeing and successful functioning of society. Teachers' work is performed in several meta-systems that consist of interdependent subsystems. The complexity of structure and content in educational sphere demands high teacher professionalism. Furthermore, their professional development and adaptation skills depend on various objective and subjective factors which affect educational work at school. In the context of social development in Latvia, promotion of competitiveness among teachers is essential in optimising the education system.

For a novice teacher's career to start successfully and efficiently, appropriate, interrelated and targeted activities for professional support should be provided, resulting in the satisfaction of the needs of all parties involved in the education process – teachers, learners and parents. Besides, it is the teacher who plays the leading role in the provision of quality formal and informal education as well as in promoting lifelong learning and self-education in society.

This study addresses the problem of overcoming the challenges to novice teachers' professional adaptation. It aims to investigate what support is required to increase a novice teacher's professional efficiency in an educational institution and to formulate new recommendations for a teacher support system which targets equipping teachers with the skills that they need to remain in this profession. Thus, the research subject explored in this study is the support that novice teachers need to perform their work and increase their pedagogical competence. The study is grounded in the following research questions: (1) What help is necessary to improve novice teacher's work? and (2) Which support opportunities encourage teacher's pedagogical growth?

The research was designed as a qualitative study with a focus on identifying the challenges encountered by novice teachers in their work and on seeking appropriate solutions. In addition to such methods as structured interview and survey, the study involved content analysis of relevant pedagogical and psychological literature in order to obtain justification for the need to support teachers in their career development as well as an examination of germane normative documents, research studies performed in the Latvian context, conference reports and media materials.

The general sample of the study are teachers from Liepaja, Aizpute, Grobina, Priekule, Durbe and Pavilosta regions of Latvia; the sample is created according to work experience criteria. Novice teachers are educators whose work experience does not exceed three years. The selection of novice teachers was random. Meanwhile, more experienced teachers, hereinafter, experts, were selected more deliberately to be interviewed with a view to exploring best practices since one of the main objectives of the study was to formulate methodological recommendations for novice teachers which would be aimed at developing their skills of retaining permanent employment at school and increasing their educational competence.

TOPICALITY OF THE STUDY

With the integration of Latvia into the European higher education area, the teaching profession faces increasingly diversified demands. The rapidly changing society requires high-quality work from educators. Issues pertaining to teacher career development and novice teacher motivation are important not only in Latvia, but also throughout the European Union (EU).

Organisation for Economic Cooperation and Development (OECD) anticipates that within the next 5–10 years more teachers will enter schools than over the previous 20 years. Therefore, there is a high potential risk that the quality of school and education will deteriorate if the teaching profession becomes unattractive to novice teachers.

In December 2009, the Faculty of Education and Psychology at the University of Latvia raised a discussion about poor provision of quality educational services to novice teachers in Latvia in the period between their graduation from university and career launch. Lack of career guidance for young professionals means that novice teachers are not able to identify with generalised recommendations in the reality of educational institutions. Consequently, they work by simply remembering how their own teachers did and copying them.

So far in Latvia attraction of novice teachers to the profession is seen as a problem related to inadequate remuneration. This is a myopic perspective which does not propose adequate solutions to the burning issue.

Each school needs to form an inspiring culture for favourable career development, focusing on the specific role of novice teacher support system for successful application of acquired knowledge and skills. Furthermore, learners' needs in primary and secondary school should be met. Support system for career development subsumes enhancement of those skills which encourage teachers' long-term stay in the chosen profession or occupation since acquisition of higher education not always warrants success at work or forecasts a good performance of one's job. Moreover, continuous development and successful achievements of teacher competence are of great importance.

One of the reasons for the decreasing quality of education is poor process of novice teachers' adaptation at the workplace. This can be improved through a quality and meaningful systemic approach which intends purposeful activities with a view to satisfying teachers', learners' and parents' needs and ensuring successful adaptation of novice teachers by creating a support system for continuous career development.

Data from the Latvian National Employment Agency confirm that a great number of teachers are unemployed and a lot of these young professionals do not even attempt to look for work in educational institutions. Rather, they seek alternative occupation opportunities in the labour market, because they are deterred by the difficulties and responsibilities of the school and the educational process. Another trend is young professionals leaving their job at school after a short period of time. These professionals admit to not having received the necessary support from colleagues, which would have been crucial for a successful beginning of career in the educational institution.

SYSTEMATIC APPROACH AND CAREER DEVELOPMENT

Teacher's work is an essential component of the education system. A system is a whole of interacting objects distributed in a certain environment. Any system exists in unity within a specific environment (Broks, 2000).

Each theoretical model of a system includes:

1. its place in a higher hierarchical level – metasystem;
2. determined optimal set of components and their properties which ensure effective functioning and development of the system;
3. detection of mutual coherence among the components (Леднев, 1991).

Like all other sectors of human activity, the education system is dynamic; its development process, however, is closely related to the educational policy pursued by the state. If the political and economic system experiences global change, with time, these changes also hit other systems of the state, including education system, its functioning and activity. In view of the complexity of teacher education, systematic approach as an entity must be implemented in three perspectives: subject, functional and historic.

The public education system should be viewed as a complex social system, which in circumstances of change is not a priority, because political and economic issues are always in the centre of attention. Yet it is only natural that the neglected sector – education – also faces change which progresses and transforms, from a certain degree of disorder, into a new order, because such is the law of eternity.

Globalisation features in the 21st century set new demands for the educational content as much as the form. This yet again confirms the significance of a complex view: theoretical knowledge and practical activity. As regards the solution to the problem of support to teachers' career development, systemic approach is of vital importance since the collective of teachers is in its art a metasystem which contains separate interdependent systems. One of them is teachers' career development whose growth is initially seen as a process of novice teachers' adaptation to the educational institution. Its tenor is impacted by a set of positive and negative relationships, thereby contributing to or, on the contrary, discouraging professional development of skills necessary for remaining at work and continuously pursuing one's career.

Opportunities for career development are analysed as important and relevant in various career development and career support theories. Career development theories deal with individual's career development stages throughout their lives. One example is the Donald Super life-span theory (Super, 1957) which looks at an individual's career development from early childhood to retirement. A career centre helps learners identify and achieve their occupational goals (Nilson, 2010).

Teachers should be provided with wider opportunities for career development throughout their professional lives. Career development and its opportunities must be known by novice teachers so that, when making choices, they would consciously and responsibly search for not only vertical, but also horizontal growth opportunities in an organisation, industry or profession throughout their lives. The author of the paper believes that teachers, regardless of their theoretical knowledge and practical experience, need systematic professional support to help them recognise and make use of career development opportunities in their profession.

In terms of modern career development support, it must be pointed out that it is not just an aid in choosing one's profession but can be considered as a programme to deal with emotional or behavioural problems implicit in career choice. Considering the rapid development of modern life, career guidance should be regarded as a continuous process (Herr, Cramer, & Niles, 2004).

In defining the concept of career counselling, Jigau (2009) involves contemporary ideas about the characteristic features of an individual and their work environment, information, counselling and objectives in career guidance, and advice throughout their lives. Elements relating to decision-making and career planning are emphasised: career counselling is a process to ensure maximum compatibility between the resources, requirements, aspirations or interests and the real offer in education, training, social and professional integration. Career counselling is a social service, initiating a holistic, continuous, flexible approach from individual's side at all stages of his life and all other important aspects of life and roles. Thus, basic elements of coherent career counselling are well-trained personnel, institutional information, advice and career guidance networks, ethical practices, quality standards as well as methods and kits tailored to the target audience (Jigau, 2009).

Finding solutions to career education issues is becoming an increasingly more creative and specific process. Consequently, in view of the demands of the 21st century, in teacher career creation and development process one must think about help not only in determining the professional suitability and in job seeking, but also about assistance to employees in advancement within their profession.

Thus, a question comes to the fore – how to promote teachers' career development by ensuring attraction of new staff and retention of experienced teachers in educational institutions?

TEACHER CAREER MODELS IN THE BALTIC STATES

During the second half of the first decade of the new millennium, an ESF project "Development of methodological network for continuing teacher education" (2006–2008) served as a framework for the creation and subsequent implementation of a career development model for Latvian teachers. The author of this paper participated in this project and contributed to the drafting of the "Model of teachers' professional career development". The project team deliberated important methodological issues – which key pedagogical areas and which indicators and prime criteria of the quality of teacher's work build an optimal framework to promote teachers' career development?

During a study of teachers' career development experiences across EU member states, relevant education policy was identified in neighbouring countries – Lithuania and Estonia. Both Lithuanian and Estonian teachers have warranted opportunities to develop their career within the chosen profession. In both these countries, the professional status of teachers and the requirements for achieving it are regulated by the Ministry of Education and Science. In order to get a category of professional qualification, a teacher must undergo certification whose basic objective is to increase teachers' participation in teaching and upbringing work as well as in the improvement of their professional competence.

In both countries, the system of teacher certification is closely related with existing opportunities for career development and salary increase. Any teacher may voluntarily apply for a certain level of qualification according to national procedures and, provided the required conditions are met, receive a relevant qualification category.

Regulations of teacher certification in Lithuania and Estonia stipulate that in order to qualify for any of the professional statuses (Table 1), teachers must meet the requirements of the three main factors that influence career development:

1. teacher's education;
2. teacher's work experience;
3. teacher's level of professional competence in accordance with the set evaluation criteria which include a variety of pedagogical competence indicators: practical work in the classroom, continuing education, methodological work, experience, scientific degree, regulatory documents, creation of the learning environment, analysis and evaluation of the teaching process.

Table 1. Teachers' professional status and experience of teaching the subject

Country	Professional status	Experience of teaching the subject
Lithuania	Teacher	2 years
	Senior teacher	4 years
	Teacher-methodologist	6 years
	Teacher-expert	6 years
Estonia	Novice teacher	No pedagogical experience
	Teacher	1 year
	Senior teacher	3 years
	Teacher-methodologist	3 years

In evaluating the quality of teacher performance, heavy emphasis is laid on self-analysis which means that teachers themselves assess their professional strengths and performance as well as identify necessary improvements.

Evaluation of teacher career development opportunities contained in the EU career development models suggests that in the new EU member states, including Lithuania and Estonia, careful attention is given to opportunities for teachers' professional growth. Growth patterns are outlined and the indicators defined that would facilitate attraction of novice teachers to educational institutions and promote the growth of experienced professionals.

A review of the factors which influence teacher remuneration in Latvia indicates that opportunities for career development in the teaching profession are closed or very limited. Moreover, they are possible only at the administrative level (Figure 1, Baumanis, 2009). Consequently, there is no question of growth in the sense of a process where all teachers are able to shape their careers systematically and equitably.
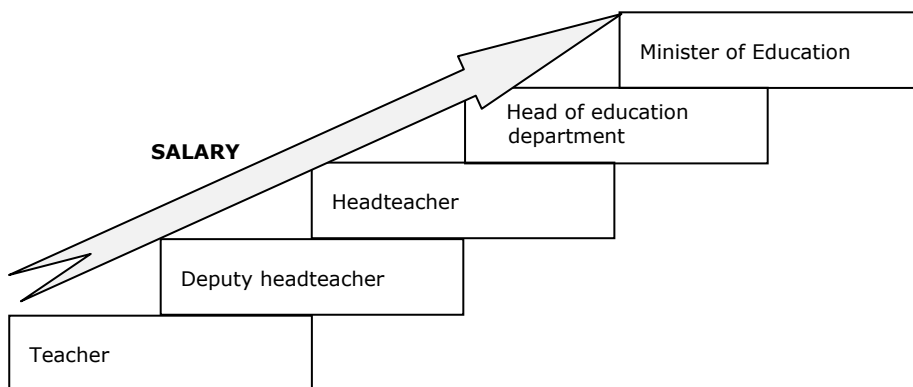
Figure 1. Teacher's administrative career model (Baumanis, 2009)

Evaluation of Latvian national normative documents that stipulate teacher salaries suggests that a burning issue in Latvian education policy is diversification of teachers' salaries and securing of opportunities for career development in accordance with traditions of international practice.

The model of teacher career development implemented in Latvia (2006–2008) grants to teachers five professional statuses, thereby promoting self-initiative in their professional advancement and a taking on of responsibility for their professional performance and results. The model connects three elements that promote teacher career development:

1. teacher professional quality assurance system;
2. continuing teacher education system;
3. teacher remuneration system.

This model evaluates the quality of teacher performance and includes comprehensive self-analysis of their work as well as external evaluation in five core areas of educational work (Figure 2). It features evaluation of teacher's strengths, motivation to assume responsibility for professional performance results and stimulation of willingness to gain moral and material appreciation.
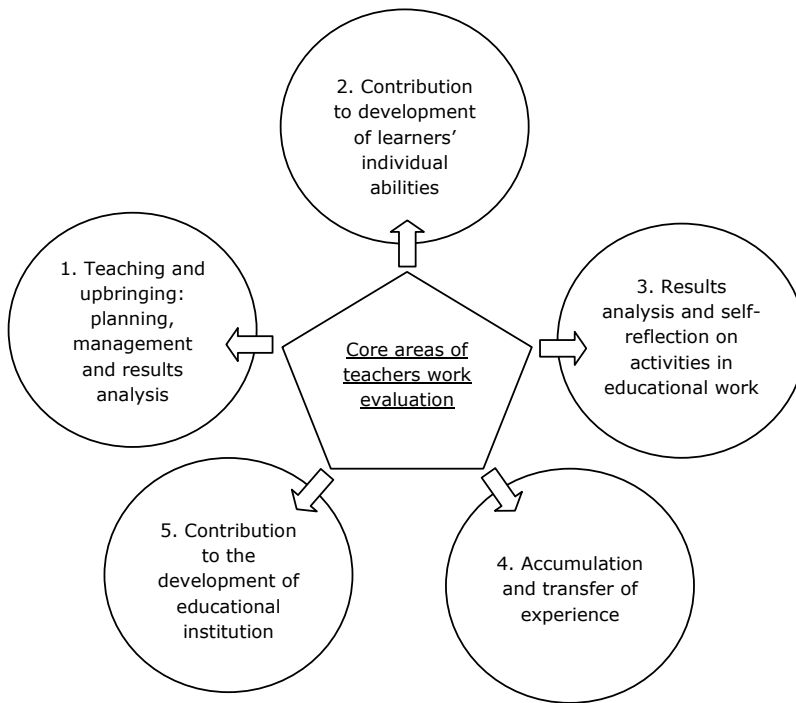
Figure 2. Core areas of teachers work evaluation

The model of career development opens opportunities for novice teachers to advance their career following the first year of work in the profession, because then it is possible to find evidence of their professional qualities. Potential for growth encourages positive professional motivation in novice teachers which sustains their development and enhances professional skills and competences.

The quality of teaching is measured in a professional quality score which characterises teacher's level of professional activity. Professionalism forecasts continuous professional development throughout teaching career. 'Development' is used here in the sense of understanding, analysis and evaluation of one's activity where previously known and newly acquired knowledge about development processes is synthesised.

METHODOLOGY

The sample of the study contains teachers from Liepaja, Aizpute, Grobina, Priekule, Durbe and Pavilosta regions of Latvia; the sample is created according to professional experience criteria – novice teachers whose work experience does not exceed three years and expert teachers whose experience includes work in the capacity of deputy head or methodologist. The selection of novice teachers was random. Meanwhile, experts to be interviewed were chosen more deliberately in order to explore their unique cases of methodological practice. The study involved 162 teachers, including 147 novices and 15 experts.

In order to fulfil research objectives, both quantitative (survey) and qualitative (interview) data collection methods were applied. Survey was used to obtain novice teachers' opinions. This method was chosen with consideration to economy of financial resources as well as to securing respondents' anonymity which permitted to attract more respondents and procure more open and credible answers. In order to avoid a frequently recorded problem of some research participants' not answering the questions or failing to return the filled out questionnaire forms, some additional measures were taken. Since the questionnaires were filled out in close cooperation with educational methodologists, deputy heads and even some headteachers from Liepaja, Aizpute, Grobina, Priekule, Durbe and Pavilosta areas, the number of completed and returned questionnaire forms was comparatively great. With individual support of these officials, questioning proceeded successfully, not least because it was determined in advance how many novice teachers work in particular schools. Ultimately, virtually all of them were involved in the survey.

Age analysis of the sample of 147 novice teachers suggests that the teaching profession is neither the first nor the only one in their careers. Majority of the respondents (72%) are in the age group from 25 till 35 years. Distribution of gender in the sample confirms the prevailing trend in the education field – perceptibly fewer males than females in the teaching profession (18% and 82% respectively).

Description of novice teachers' sample in terms of education indicates that the majority (71%) have higher pedagogical education while 16% have higher education in another discipline, which implies that the beginning of their career was not related to education. 13% of the respondents chose a different variant to describe their education.

Analysis of teachers' workload reveals that their workday is quite busy and stressful (48% of the respondents select this response). However, for 11% of the respondents the workload does not exceed half a rate, and only 34% of the respondents claim to have an optimal workload. The findings also suggest that novice teachers occupy a wide range of posts. Thus, the majority (78%) hold a teacher's position; relatively few respondents, however, are employed in different posts: 9% are housemasters/-mistresses, 5% are deputy heads, 4% are social pedagogues and 2% special education teachers or teachers who provide extended day services.

Teacher split by the held position reveals that not all novice teachers teach any of the subjects in the curriculum. Others, however, in line with the common practice at schools, teach several subjects, which usually belong to the same curricular area.

The sample of experienced teacher experts was specified because their experiences of cooperation with novice teachers were considered of utmost importance for the present research. Deputy heads for studies were chosen as experienced teachers since their everyday practice is closely related to novice teachers' integration into school life. In order to appraise the experts' experience, a qualitative method of data gathering (interviewing) was applied.

The method of interview was chosen to gather profound information about the process under study. Such factors as time-efficiency and financial costs determined the choice of geographical location for expert interviews; for this reason, the deputy heads in the vicinity of Liepaja city were selected. To increase the objectivity of the gathered information, a semi-structured interview design was preferred.

The deputy heads who participated in the study can be placed in a number of groups. Nearly half (47%) fall into the age group from 46 till 55 years and one third (33%) into the 36–45 years group. 7% of the expert respondents are aged 25–35, but almost twice as much (13%) are older than 56. None of the deputy heads in Liepaja city and the nearest schools in the region is male, which means that all of the expert participants are women. They all have extensive pedagogical experience, because none of them has worked in school for less than ten years. Thus, 13% have worked for more than 10 years, 67% for more than 20 years and 20% have schoolwork experience of more than 30 years. More than half (60%) of deputy heads have held this post for over 10 years and 13% for over 20 years, which explicitly attests to their great experience of working with novice teachers.

FINDINGS: PROFESSIONAL ADAPTATION RESEARCH

The respondents (147 novice teachers and 15 experts) were asked to characterise the adaptation process in their respective educational institutions. Novice teachers (52%) reported a prevailingly positive experience, which was motivated by different objective and subjective reasons. Most frequently mentioned was experienced and supportive school management that provides theoretical knowledge, integrates the newcomer in the school processes, helps in difficult situations and supports with methodological material and practical advice. Other popular answers praised responsive colleagues who provide support and advice on ambiguous issues, a friendly school team and a familiar environment as well as noted the importance of good communication skills in novice teachers along with their honesty, punctuality, determination and ability to seek help when needed. These factors contribute to a quick and easy settling in the school environment, rendering the adaptation phase smooth and successful.

16% of the respondents did not answer the question "Describe the process of your adaptation at school", which may imply that they either failed to understand the nature of the question or were unwilling to share their experiences.

Some novice teachers (9%) admitted that their adaptation had been difficult; the reported reasons were their inability to select appropriate teaching methods for learners or create a positive learning motivation. In two instances the new employee claimed to have had had difficulties to find their way into the teaching staff and to understand their duties, but the school administration appears to have helped to overcome these challenges. In one instance, adaptation fell hard due to lack of previous practice.

The dominant trend in responses to the question "What were the toughest challenges to overcome during the adaptation phase?" suggests that key difficulties seem to have been related to performing form teacher's duties – preparation and delivery of lessons as well as dealing with truancy. Novice teachers claim that this subject is not taught in higher education institutions; this complicates their practice because teachers are unprepared for such difficulties and do not know how best to react.

The second prevailing set of problems that novice teachers appear to have faced are behavioural problems among learners – keeping discipline and managing conflict situations in class. One respondent writes in the questionnaire: "In my first year at school I experienced different conflicts with learners, but in the course of time I have come to understand learners better and solve the encountered problems in a more peaceful way".

Several responses highlight that evaluation of student achievements was found to be problematic by many. Remaining objective was seen as the greatest challenge, which can be related to lack of practical skills among novice teachers. Other reasons for problematic adaptation are managing school documentation, including the keeping of class register, poor learner motivation and their disinterestedness to acquire new knowledge, as well as work with students with learning disabilities. Social problems, establishment of contacts with colleagues and integration into the school team were also exposed as challenges.

Furthermore, novice teachers emphasise problems related to cooperation with parents, especially as regards organisation of parents' evenings or individual meetings, pointing out that these skills were not developed at university.

All experts, in describing the process of adaptation in their educational institutions, acknowledge that initially it is related to provision of general information about the school. In terms of direct support providers, in most cases it is recognised that these are heads of school methodological commissions for teaching different subjects. Many respondents describe them as poorly capable of showing the ropes to novice teachers. In quite a few instances, however, these support providers are characterised as experienced subject teachers who advise novices if necessary. Yet, regrettably, only one case confirmed the presence of an assigned mentor or work trainer who helps newcomers to the teaching staff prepare lessons and conduct pedagogical process.

One expert notes that the monitoring of the adaptation process at school administration level is important; during the first few months, indirect observations and feedback, such as teacher- student- and parent comments, are of fundamental consequence.

Only two interviews characterise support for novices as team work that involves support staff: "School psychologist invites the new teacher to participate in a supervision group, though it depends on the educator whether to attend these studies or not".

The period of novice teacher adaptation is considered as very individual in regards to long-term or short-term duration. It is more dependent on teacher background, professional and social skills, as well as personality traits, including such commonly referred to qualities as courage and initiative.

Thus, the beginning of young professional's work at the educational institution emerges as a process of professional adaptation which only ends when the novice teacher feels satisfaction about the job. Development of this process depends on both psychological and methodological organisation of support system in the educational institution and the suitability of the young professional's personality to the selected occupation. Supportive school culture oriented to career development is an essential prerequisite for successful adaptation of novice teachers.

ABILITIES THAT FACILITATE ADAPTATION PROCESS

The survey of novice teachers surfaced several capabilities that facilitate adaptation process. Given the manifold choices in the questionnaire form, each respondent could specify the characteristics which fit themselves best as well as mark other important skills which they consider suitable to their individuality. 88% of the respondents alleged that these are communication skills, thereby recognising these capabilities as the major contributor to the skills of remaining at work. The second most frequently mentioned ability is taking

on responsibility (80%). Meanwhile, ability to ask for help and advice is ranked as third in terms of importance (75%). A substantial number of novice teachers (73%) stated that their persistence at work is supported by ability to acquire new knowledge and skills. Ability to plan one's time and tasks was mentioned as facilitator for persistence at work by 67% of the respondents. It is a considerable number which, however, suggests that this ability is not regarded as primary. In addition, the respondents mention other abilities conductive to professional adaptation such as intuition, empathy, peace, strength and attractiveness.

Novice teachers were also questioned on which of the individual traits of their personalities have endorsed their skills for continuing work at school. 75% of the young professionals named independence, 70% – patience, and 67% – determination and scrupulosity. Somewhat less affirmative responses were given for susceptibility (56%), self-initiative and daring (50%), which implies that these individual features have not prevailed to facilitate the young professionals' skills of perseverance at work. Respondents also added such characteristics as love for children, emotionality and self-discipline.

The findings from expert interviews about novice teachers' skills that help them remain in the profession reveal that the most significant skills of teachers at the dawn of their teaching career are those that involve mutual interaction – cooperation, relationship development and communication skills as well as ability to listen and hear, and to work in a team.

The experts also emphasise young professionals' creativity, which is related to their sustaining their own interest in their subject and exciting that of the learners. Young professionals should exhibit precision in filling out relevant documents, keep their promises as well as show determination and patience to be able to overcome obstacles rather than quit at the first sign of difficulty. Moreover, what really matters is "ability to care for themselves and to constantly improve, and ability to care for others, inspiring them to heights of achievement".

As regards the question "Which of the skills for remaining at work can be acquired or developed during adaptation period?", the experts are unanimous that new teachers can learn new knowledge and skills while doing methodological work, planning ahead for the academic year, preparing and managing lessons, and resolving conflicts, which involves obtaining specific professional skills that are key to success at all stages of career development, including the adaptation period.

However, as pointed out in the expert interviews "...one cannot obtain or develop something which is not given by nature – ability to communicate with and love children", one "cannot change the character", "...if the teacher does not possess self-discipline, precision, conformity of the said and done, it cannot be acquired either at university or while working at school". Now the research comes to a point which the interviewees framed as complicated, although their observations from practice are persuasive. Teacher's talent or professional gift is very closely associated with professional suitability for pedagogical career. Quotes from the interviews support this claim:

- "Often, practice shows that the teacher is knowledgeable and wise but does not know how to pass this knowledge on";
- "The bedrock of teacher's talent is the gift to teach and to be sure the learner has learnt";
- "In my opinion, professional suitability is a talent given by nature";
- "It is a perfect case when learners attend the lessons taught by a personality rather than merely by a mathematics teacher".

Expert assessment highlights that an individual's self-knowledge, conscious awareness of their abilities and application of the latter are essential in choosing the profession. This finding implicitly confirms availability of professional counselling services. In fact, the findings suggest an important conclusion that late identification of professional suitability leads to some novice teachers' leaving school after a short period or even purposefully avoiding ever taking employment in their profession. Young professionals do not seek employment at school for several reasons:

- students can gain competitive education, teacher education programmes feature places funded from the state budget and possibilities of getting a scholarship;
- financial considerations, because a teacher's salary is lower than in the private sector;
- low prestige of the profession in society;
- duties and responsibilities learned during practice placement – excessive workload, irregular working hours, ceaseless communication, stress;
- students discover during placement that their individuality does not suit the teacher's profession – failure to find contact with children or adapt to the pace of work at school.

The interviewed experts admit to having observed cases when novice teachers leave school after a short while. The following were named as the main reasons for this unfortunate occurrence:

- material considerations, poor remuneration;
- great stress, emotional tension, busy schedules, heavy workload;
- work turns out more difficult than expected;
- realisation that one is not adequate for the profession due to character, temper, communication skills;
- problem of competition;
- possibility to assert oneself in a related profession or get a different education.

Novice teachers who chose to remain at school need support to ensure that their adaptation process is successful. Support providers, by developing a professional support system for career guidance, can create conditions which advance the skills that novice teachers need to continue working at school.

REQUIRED SUPPORT FOR CAREER GUIDANCE OF NOVICE TEACHERS

Career guidance is understood within this study as a process that helps teachers in obtaining the skills and experience that are relevant and necessary for their occupation. During the study, both novice teachers and experts had to answer a question on what kind of support young professionals need in order to start their work in an educational institution.

84% of novice teachers and 92% of experts replied that the necessary support is methodological in nature, which implies the two groups of respondents' consensus on this issue. As regards psychological support, the experts (92%) overwhelmingly believe that

it must be provided in combination with methodological support. Meanwhile, 54% of novice teachers also approved the necessity for psychological support. This strongly suggests that they feel the need for methodological support to a much greater extent than for psychological support.

The findings indicate that psychological support is important for novice teachers, even though it is approved by considerably fewer respondents. Survey data confirm novice teachers' need for psychological comfort and support in the school environment:

- "The most important thing for a teacher to be able to adapt and develop their abilities is the school environment, positive attitude from colleagues, support and understanding. Favourable climate creates a desire to learn, develop and achieve even better results".
- "In the first years of school work, teachers should be criticised carefully, so as not to kill their willingness and motivation to work at school".
- "Teachers should be offered courses where to analyse a variety of social problems and their solutions".
- "Recommendation and request to appoint to each young professional an experienced teacher-mentor, who would help in their work".

Given other forms of support, new teachers emphasised that they need information, organisational, educational, collegial and practical support.

Support providers were identified by surveying and interviewing the respondents (Table 2).

Table 2. Support providers for novice teachers (answers in %)

Support providers	Novice teachers	Experts
Experienced colleague	64%	39%
Head of methodology dept.	30%	53%
Deputy head	79%	62%

The experts shared their experiences in interviews on what forms of cooperation are practiced between novice teachers and support providers. It was pointed out that the basic form is individual work, which is timely scheduled but generally occurs only if needed. Supporters work individually with the young teachers on the following substantive issues:

1. exploring and completion of relevant documentation (mentioned in 67% of responses);
2. preparation of the lesson plan (60%);
3. observation and analysis of lessons (60%);
4. creation of thematic plans (47%);
5. analysis of pedagogical work (53%);
6. planning of work (33%);
7. informing (33%);
8. learner self-evaluation (13%);
9. organisation of cooperation with parents (7%).

The survey data imply that the novice teacher and support provider's collaboration does not cover all core areas of pedagogical work in which novice teachers who start work in an educational institution must perform their professional activities.

Interview data suggest that in 20% of cases the support for novice teachers is planned and systematic, in just as many cases (20%) it is fragmented and unfocused whereas in other cases the systematic approach appears to depend on the attitude and interest of the new colleague.

RECOMMENDATIONS FOR THE ESTABLISHMENT OF NOVICE TEACHER SUPPORT SYSTEM AT SCHOOL

1. Quality assurance for adaptation process in the school environment subsumes the following:
    - Availability of comprehensive types of support and professional communication;
    - Work of a professional and motivated team of support providers;
    - Regular self-analysis and self-reflection of adequacy by the novice teacher in their professional activity.
    - Purposeful methodological support to novice teachers in all of the necessary areas of educational work.
2. In order to provide comprehensive support to the novice teacher in career development, support providers must choose the most appropriate types of support (Figure 3) according to the psychological and methodological readiness of the young professional.
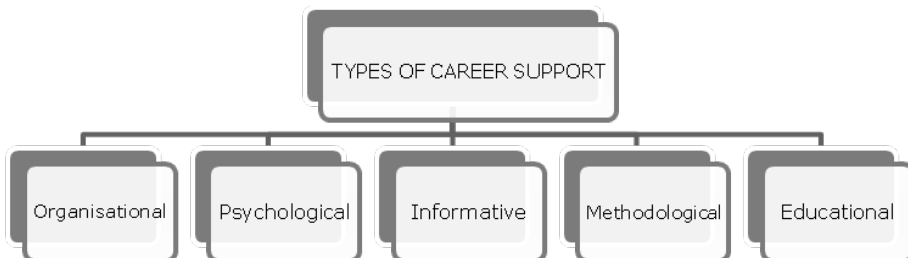
Figure 3. Types of support to novice teachers in career development

3. Forms of cooperation and support between novice teachers and support providers include individual counselling, methodological association seminars, courses in continuing education, mutual observation of class lessons, teachers' council meetings and management committee meetings. Thus, in support provision, cooperation among novice teachers and support providers can take a variety of forms whose selection is determined by planned and targeted work in developing novice teacher's abilities of remaining at work, timely and regular self-analysis of the novice teacher's professional adequacy, and professional methodological support in all the necessary areas of pedagogical activity.

CONCLUSION

The analysis of findings from the study suggests that the novice teacher adaptation process depends on both psychological and methodological support provided by organisational systems in an educational institution as well as on the professional suitability of the young professional for the selected occupation. Successful adaptation process is endorsed by a uniform style of school work and systemic reinforcement, which is provided by a team of professionals.

An important component of career guidance for novice teachers is the skills for remaining at work. At the beginning of a novice teacher's career, significant skills for remaining at work include adjustment, effective communication and ability to work in a team. Gradually, the young professional should develop a whole range of other specific professional skills which underpin the teacher's success at all career stages – new knowledge and skills in methodological work, in the planning of the academic year, in lesson preparation and management, and in conflict resolution.

The study evidences that the most significant professional adaptation abilities, in the view of the novice teachers just beginning work at educational institutions, are those that promote successful mutual communication, cooperation and relationship creation as well ability to listen to others and to work in a team.

In the opinion of experts, the most significant features for an easy adaptation process of the novice teacher are creativity, self-initiative and excitement of interest in students about their subject. Novice teachers have to be precise since their work concerns a lot of documentary issues and exhibit not only ambition in setting requirements, but also their maintenance, purposefulness and patience.

In this study, aspects of support opportunities for developing teachers' professional work were analysed by emphasising the importance of systemic approach in the unity of theory and practice for improvement of professional activity. Research indicates that novice teachers and experts' views of perfect adaptation process and its facilitation differ. To succeed, a novice teacher should apply and accept methodological support proposed by experts.

REFERENCES:

Baumanis, A. (2009). *ESF NP projekta „Pedagogu tālākizglītības metodiskā tīkla nodrošinājuma izveide" rezultāti un ietekme nākotnē. Projekta „Pedagogu tālākizglītības metodiskā tīkla nodrošinājuma izveide" noslēguma konferences materiāli* [Results and implications of the ESF NP project "Creation of methodological network for teachers' continued education". Final project conference materials]. Retrieved January 15, 2012, from http://www.viknva.gov.lv

Broks, A. (2000). *Izglītības sistemoloģija* [Systemology of education]. Rīga: RaKa.

Jigau, M. (2009). *Karjeras konsultēšanas metodes. Valsts izglītības attīstības aģentūra* [Career counselling methods. National Education Development Agency]. Retrieved January 21, 2012, from http://www.viaa.gov.lv/files/news/727/karjeraskonsmetodes.pdf

Herr, E. L., Cramer, S. H., & Niles, S. G. (2004). *Career guidance and counseling through the lifespan: Systematic approaches* (6th ed.). Boston, MA: Pearson/Allyn & Bacon.

Nilson, L. B. (2010). *Teaching at its best: A research-based resource for college instructors*. San Francisco: John Wiley & Sons, Jossey-Bass.

Super, D. E. (1957). *The psychology of careers*. New York: Harper and Row.

Леднев, В. С. (1991). *Содержание образования: Сущность, структура, перспективы* [Content of education: Essence, structure and perspectives]. Москва: Высшая школа.

Sustainable engineering education as human niche construction

Eino Sarkola

Mikkeli University of Applied Sciences, Finland

ABSTRACT

This study is a part of ongoing design-based research to develop mathematical education for engineering students. The purpose of the present paper was to explore how mathematical education for engineering students can promote sustainable development. The first part of the paper introduces the theoretical framework. Engineering is approached as a form of human niche construction and sustainable development as a cybernetic phenomenon. Using Papert's concept of emergent programming, we introduced a framework for sustainable human niche construction, which can be used in designing sustainable engineering education. In the empirical part of the study, the framework was tested by analysing one problem-solving episode using the framework.

Key words: cybernetics, engineering, human niche construction, mathematics, sustainable development

INTRODUCTION

Sustainable development has been defined in many ways. One frequently quoted definition is from *Our common future* (also known as Brundtland Report): *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"*(WCED [World Commission on Environment and Development], 1987, p. 43). The ecological crises may become more than desperately urgent if human beings cannot bring themselves, on a hitherto unprecedented scale, to learn new ways of thinking. Some researchers, like Papert (1993), have laid their hope on new technology and new ways of thinking: the same technological revolution that has been responsible for the acute need for better learning might also offer means to take effective action.

According to Berg (2008), the solution of the environmental problems requires a more experimental attitude. Science should crawl out of slumber. New environmentally friendly technologies and practices should be tested by involving and listening to people. One example towards new experiment society is the congestion charge experiment in Stockholm in years 2005 and 2006. The idea was to see if introducing congestion charges and improving public transport at the same time would cause environmental benefits and more efficient public transport. During the experiment, public transport links were added, including nearly 200 new buses and 16 bus lines and no more than a few euros congestion charge were introduced. The experiment lasted for more than half a year in Stockholm, the outer edges of the inner city (Berg, 2008). As a result of the experiment, carbon dioxide emissions fell by 14%. Also the fine particle emissions fell almost by 10% and the noise level was reduced slightly. While the experiment was still running, a comprehensive report was made focusing not only on the environment, but also on the economy, transport and views of the citizens. In the referendum, the majority of Stockholm residents voted to keep the charges and in 2007 they were approved permanently.

According to Berg (2008), Stockholm's example shows that the environment-saving experiment society should be open to new ideas, courageous to try and find out the results of the experiments diversely. Also, the means of direct democracy, such as referenda and initiatives, should be used to a greater extent. According to Berg, the great idea of experiment society is that doing is the highest form of saying. Swarming emerges when goals are concrete, and they will also be implemented. Imaginative engineers and courageous entrepreneurs dig their ideas from a drawer. Interest groups wake up wondering about these ideas from their perspective. Media become interested in meeting different perspectives. Problem solving may begin (Berg, 2008).

Inspired by the idea of experiment society, this article focuses to study the possibility of using the concept of sustainable development as a crucial instructional principle behind engineering education.

The introduction of the congestion charges and improving of public transport, or creating and using new technology in general, may also be seen as a special case of ecosystem engineering, or *niche construction* (Odling-Smee, Laland, & Feldman, 2003). Niche seems a natural concept for thinking about sustainability of various systems consisting of subsystems like nature, technology and education. People respond to novel selection pressures by niche construction.

HUMAN NICHE CONSTRUCTION

All living creatures, their metabolism, their activities and their choices, partly create and partly destroy their own niches, scales ranging from the extremely local to the global. Organisms choose habitats and resources such as nests, burrows, webs, pupal cases and the chemical milieu and frequently choose, protect and provision nursery environments (Odling-Smee et al., 2003).

Following Bock (1980), Odling-Smee et al. define that organisms are composed into arrays of fitness increasing subsystems (traits or characteristics) called *features*, and that similarly, any organism's environment can be decomposed into arrays of subsystems called *factors*. Natural selection thus describes the matching of features and factors.

Niche construction occurs when an organism modifies the *feature-factor relationship* between itself and its environment by actively changing one or more of the factors in its environment either by physically perturbing factors at its current location in space and time, or by relocating to a different space-time address, thereby exposing itself to different factors. Boyden has proposed a list for the conditions that maintain the (good-) life for human species (Boyden, 1987; Dillon, 2008).

Niche construction is called *inceptive* if organism initiates the change (Odling-Smee et al., 2003) and *counteractive* when organism opposes or cancels out an already changing factor. Some bacteria, for instance, can under conditions of stress release allelopathic agents or bacteriocins into the environment, killing or inhibiting the growth of other bacteria, and also produce an immunity protein that provides protection against their own bacteriocin, apparently as an evolutionary consequence.

Interesting examples of niche construction are provided by fungi. *Mycorrhizae,* for instance, form mutually beneficial association with the roots of woody plants. One of the types of mycozzhizae, *vesicular-arbuscular* penetrate the root tissue of plants and form full symbiotic relationships with them and benefit plants by providing them with enhanced supplies of mineral nutrients, notably phosphorus, while benefiting themselves by taking carbon from the plants.

Odling-Smee et al. (2003) include also a chapter on human niche construction dealing with the relationship between evolutionary change and cultural practices. In their theory, niche construction from all ontogenetic processes modifies human selective environments, generating a legacy of modified natural selection pressures that are bequeathed by human ancestors to their descendants. In this framework, knowledge is constituted in the interaction between the individual and his or her environment (Dillon 2008).

Human populations acquire adaptive information by three processes which interact with each other (Figure 1).
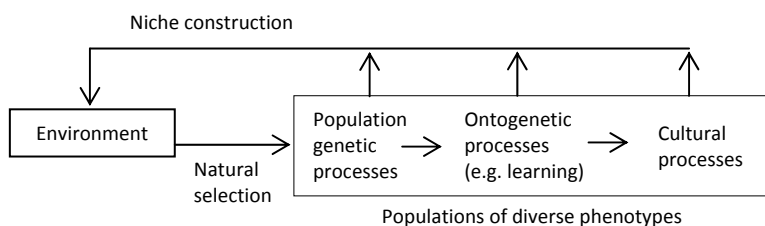
Figure 1. Information acquiring processes in human niche construction

Population-genetic processes

Genes can affect information gain on the ontogenetic level, which in turn influences information acquisition on the cultural level (Odling-Smee et al., 2003). Hence, population-genetic information is the most fundamental source of information that underpins niche construction.

Information-gaining ontogenetic processes (learning and immune system

Some factors in the environment can potentially change many times within the typical life span of the organism concerned. What Darwinian process can do is opt for supplementary processes that permit characteristics of the phenotype to adjust on a within-lifetime basis. Learning allows individuals to fine-tune their behaviour to the idiosyncrasies of their local circumstances in a manner that would be impossible on the basis of inherited genetic knowledge alone, accumulating further semantic information relative to the local environments (Odling-Smee et al., 2003). Using the *trial-and-error*-learning: individuals repeatedly generate behavioural variants, test them and eliminate the behavioural errors.

It is not clear which pathogen will confront individual during their lifetimes. The efficiency of the immune system of the vertebrate is based on technique which is analogous to *smart missiles* that learn their target during the flight.

Cultural processes

Cultural processes add a second knowledge inheritance system to the evolutionary process through which socially learned information is accrued, stored, and transmitted between individuals both within and between generations (Odling-Smee et al., 2003).

Experienced others such as parents reservoir of 'smart variants' for naive individuals to shortcut the many iterations of ontogenetic selection necessary to learn for themselves behaviour patterns appropriate to their environment, and leapfrog to the functional and already tested solutions established by others.

Information sharing can depend on several kinds of cultural inheritance (transmission): vertical (parents), horizontal (peers), oblique (unrelated older individuals), indirect (e.g. from key individuals) and frequency-dependent (e.g. from the majority). Cultural information is expressed in the production of smart behavioural variants. Adaptation of cultural variants is also affected by socially transmitted cultural values through collective experience and social history, such as rules of thumb, proverbs, conventions, moral and ethical principles and other information accrued through prior social learning. Cultural information may be propagated even when it is detrimental to individual fitness. In science or technology, niche construction is based on learned and culturally transmitted information which is expressed intentionally relative to a specific goal.

By modifying the environment, niche construction creates artefacts and other ecologically inherited resources that not only act as sources of biological selection, but also facilitate learning and perhaps mediate cultural transitions. Humans may respond to this novel selection pressure either through cultural evolution, for instance, by constructing hospitals, medicines and vaccines, or at the ontogenetic level, by developing antibodies that confer some immunity, or through biological evolution, with the selection of resistant genotypes. Since cultural niche construction typically offers a more immediate solution

to new challenges, Odling-Smee et al. anticipate that cultural niche construction will usually favour further counteractive cultural niche construction, rather than genetic change. However, where a culturally transmitted response is not possible, perhaps population lacks the requisite knowledge or technology, then a genetic response will occur.

Engeström (2008) offers a sketch to the history of the types of human production, including the corresponding dominant form of agency and learning movement. He starts from *craft*, where the agency is based on *individual actor*, dominant learning movement being peripheral participation and gradual transition towards the centre. The next historical type of production is *mass production*, where the dominant mode of agency is *team*. According to Engeström (2008), teams are excellent in cooperative problem solving. However, they run into trouble and find their limits when faced with objects that require questioning the division of labour, rules, boundaries of the team and the wider organisation – in short, reflective communication. Accordingly, teams are now increasingly replaced by the forms of fluid *knotworking*. The notion of *knot* refers to rapidly pulsating, distributed, and partially improvised orchestration of collaborative performance between otherwise loosely connected actors and activity systems. This new emerging type of agency reaches beyond and across the dividing boundaries and gaps between activity systems. According to Engeström the imperative of this new *interagency* might be formulated as "Dwell in the object; connect and reciprocate across boundaries" (Engeström, 2008, p. 225). Knotworking performs a dual job solving very complex problems and contributing to the shaping of the entire way of working, which Engeström (2008) calls *social production* or *peer production.* This way is cost effective, lying in the distributed agency and collective intentionality, and does not require "centres". Indeed, knotworking seems to model the experiment society described by Berg (2008) very well. Interestingly, Engeström (2008) uses mycorrhizae to characterise the agency of knotworking.

TOWARDS SUSTAINABLE HUMAN NICHE CONSTRUCTION

According to Berg (2008), the great idea of experiment society is that doing is the highest form of saying". Combining of the communication and acting brings us to *cybernetics* (Wiener, 1948, 1954). The name *cybernetics* comes from the Greek *kubernētēs* or *steersman*. One of the originators of cybernetics was World War II and e.g. need to enhance the precision of anti-aircraft fire based on learning and *feedback*. According to Wiener the society can only be understood as a study of messages and communication facilities which belong to it. Cybernetics has been applied to various systems of biology, physics, society, language, law, science and technology.

According to Papert (1980, 1993), cybernetic thinking should also be part of education. With his collaborators, he created a programmable *Logo* environment for controlling a turtle (creature on computer screen or robot) (Papert, 1993).

A crucial feature for experiment society is the ability to apply feedback in conducting development projects towards some concrete goal. In Logo environment, a simpler but analogous situation can be arranged by giving a child a task to circumnavigate a square box by a turtle with touch sensors. According to Papert, many beginners try to use a strategy which he calls *blueprint* or *tight programming*: measure the box and tell turtle to walk

around the box taking a precise number of exact predetermined steps. Contemplating various flaws may then lead to noticing that being precisely right may open one to the risk of being disastrously wrong. Epistemologically this approach of precision connects to logic and technologically to (weak) artificial intelligence or expert systems. The strategy, which is more in the spirit of cybernetics, is *reasoning within*, that is, putting itself in the place of the turtle and applying feedback (reports of touch sensor). Papert calls this last strategy *emergent programming*. It refers to rich semantics where the code has different interpretations in different contexts and reminds more *artificial life* than artificial intelligence. Mass production and 'cathedral model' of education, curriculum designer as a 'knowledge architect', are some of his examples of tight programming. *Little school* growing slowly in organic way is his example on emergent programming.

EXAMPLES OF SUSTAINABLE HUMAN NICHE CONSTRUCTION

Before introducing a framework for sustainable human niche construction, we give some examples.

As human beings we are all emergently programmed since our information-gaining ontogenetic processes (learning) allow us to fine-tune our behaviour in local circumstances.

Sustainable development, declared in *Our common future* (WCED, 1987), calls for emergent programming by noticing the future generations and their ability to niche constructions to meet their needs.

In projects of experiment society, emergent programming requires noticing all the actants (e.g. Latour, 1991, 2005). Stockholm's case, for instance, emerged through the co-operation of environmental friendly technologies like public transport (buses and bus lines), practices like congestion charge, feedbacks like comprehensive reports with measurement of carbon dioxide and fine particle emissions, and, of course, imaginative human niche constructors and media.

Knotworking represents a new historical mode for human niche construction, based on emergent programming, calling to dwell in the object, connect and reciprocate. Knotworking can be seen as a response to new selection pressures caused by the *runaway objects*, which have the potential to escalate and expand up to a global scale of influence like global warming. They are poorly under anybody's control and have far-reaching, unexpected side effects. They are contested objects that generate opposition and controversy. They can also be powerfully emancipatory objects that open up radically new possibilities of development and well-being, as exemplified by the Linux operating system (Engeström, 2008).

In educational planning, a quite popular framework is *design-based research* (Barab, 2006) which is organised in successive design-experiments and feedbacks.

Papert (1980) introduces three principles for designing mathematical education: *continuity principle*: the mathematics must be continuous with well-established personal knowledge from which it can inherit a sense of warmth and value as 'cognitive' competence. *Power principle*: it must empower the learner to perform personally meaningful projects that could not be done without it. *Principle of cultural resonance*: the topic must

make sense in terms of a larger social context (it has to be accepted by adults as well). All these principles can be understood as subsystems of emergently programmed educational niche construction.

FRAMEWORK FOR SUSTAINABLE HUMAN NICHE CONSTRUCTION

Figure 2 gives an overview to the dynamics of human niche construction to be used as a general framework for instructional design of sustainable engineering or engineering education: a challenging situation in the environment, for instance, runaway object, triggers the ecosystem engineering, like knotworking, or directly the creation of new technological solution, like public transport, which actively changes the factors in the environment.

It is likely that challenging situation pushes the niche construction towards emergent programming from the traditional style of tight programming. The following emergent programming styles have been proposed: Papert's *reasoning within*, Engeströms *dwelling in the object* (Engeström, 2008) and Lanier's *morphing* (Lanier, 2010).

Finally, resulting more satisfactory feature-factor relationship is likely to increase the empowerment of the subjects.
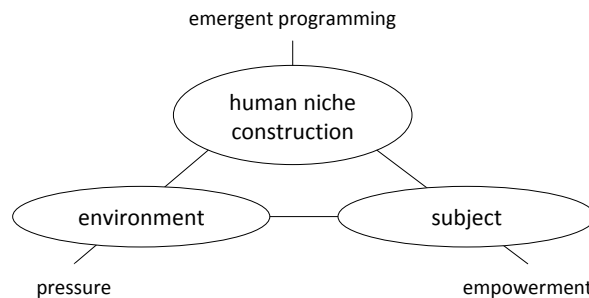
Figure 2. Framework for sustainable human niche construction

IMPLEMENTATION OF THE EMPIRICAL PART OF THE RESEARCH

The purpose of this study is to determine how mathematical education for engineering students can promote sustainable development. The research tasks addressed in this paper are the following:
- to create theoretical framework for designing of sustainable engineering education;
- to test the framework by analysing mathematical problem solving process carried out by engineering students.

The study is a part of the ongoing design-based research (see e.g. Collins, Joseph, & Bielaczyc, 2004; Barab, 2006) to develop mathematical education for students of engineering.

In the previous chapters we have already sketched the framework for the sustainable human niche construction. The created framework covers engineering education, and thus also the mathematical education for engineering students as a special case.

The context of this experiment is the study module *Mathematical modelling and analysis* of 5 cu held in autumn 2011 and partly in spring 2012 for three groups: one from environmental engineering and two from HVAC engineering study programs, both from Mikkeli University of Applied Sciences in Finland. The study module includes the following topics: the concept of mathematical model, set theory, functions, curve-fitting, numerical and symbolic differentiation, numerical and symbolic integration and solution of ordinary differential equations with applications to environmental engineering and HVAC engineering.

My meetings with the student group were held in a classroom equipped by computers including mainly working with problems, and, at the same time, when needed, familiarising with the theory and solving exercises given in the course material. The method of solving the problem was not fixed, but in practice most students needed guidance, along which problem-solving proceeded and hence solutions became quite similar.

The students worked individually or in small groups. They solved the problems and reported the results and the methods they had used. The aim of the reporting was that the colleague could understand what has been done in the problem-solving process. That was measured by allowing students to comment (feedback) each-others reports. After receiving comments students could make improvements to their reports.

Virtual learning environment in Moodle was used offering learning materials, return folders for reports and personal journal, which allowed the teacher to give personal comments. Students were asked to update their personal journal during the study module, describe and assess the learning process on different parts of the course and the role of the support they got from problems given in learning materials, exercises, computer programs, the teacher, fellow students and other possible sources. Students were also encouraged to give ideas for developing the study module (e.g. could it be possible to have common problems with some other study module to decrease the work load).

The assessment was based on exams (70%) and reports (30%). The number of problems was seven, including the personal journal.

The collected data include my observation notes and reports made by individual students or groups as part of their learning processes, personal journal being one of the reports.

ANALYSIS OF THE PROBLEM-SOLVING EPISODE USING THE THEORETICAL FRAMEWORK

The problem was described in the course material as follows: *Carbon dioxide percentage of the bedroom of day care centre*: The volume V of the bedroom of day care centre is 30 m^2 x 2.5 m = 75 m^3 = 75000 l. The air of the room changes once in 30 minutes. At the beginning of the sleep, the room had been ventilated and the CO_2- percentage y_0 of the room was the

same as outdoors. After ventilation fifteen children of the centre go to bed. Assume that one sleeping child produces 0.28 l/min carbon dioxide; the flow of the incoming air is the same as outgoing air; CO_2 is fully mixed in the air of the room. Study how CO_2- percentage changes during the two hour sleep. Assess how many children may sleep in the room so that the upper limit of satisfactory CO_2- content 1200 ppm will not be exceeded. When is the upper limit 1500 ppm given by the law exceeded?

The phases of the typical solution process were:

1) *Visualisation of the problem* as a system diagram on paper, blackboard or by using a computer program. Ms Excel, for instance, was used.

2) *Defining differential equation* by using the visualisation. A typical strategy was to think what would happen to the volume of CO_2 inside the room during one minute. This is analogous to *reasoning within*-strategy of Papert.

3) *Numerical computation* using Euler's method, that is, starting from initial value of CO_2 percentage and determining "what happens in some small time interval". This can be done using pencil and grid paper, but experimentation with a different number of children will become easier by using spreadsheets. Another useful tool is *system dynamics*, which combines all previous phases in single visual user interface (Näsäkkälä, 1999).

The solution strategy reminds closely the programming in Logo environment. Both strategies are able to use feedback and thus represent the idea of emergent programming. The symbolic formulas of traditional calculus are typically applicable only to special cases, and thus they represent the ideas of tight programming. However, for some special problems precise solutions can be very effective.

The role of the problem was crucial in this educational niche construction. It was a trigger for the niche construction made by the student (see Figure 2).

To assess the factors of niche constructions, I will use the principles given by Papert. *Continuity principle*: The given problem was understandable for the students. The solution method was grounded in going through four slightly easier problems and their solutions. The solution was not based on 'invisible' formulas. The visibility was also supported by encouraging students to apply the 'reasoning within' technique and afterwards by writing report. According to the personal journals of the students, problems were not too difficult. Students also generally thought that writing reports supported their learning.

Power principle: According to the personal journals, the students were generally motivated in solving meaningful problems of their own study program. It is interesting that even though the problem was initially relatively difficult for most students, the solution was not. The explanation may be found in educational niche, which was quite powerful containing computational tools, which students were already familiar with. The solution concept was actually more emergent (semantically richer) than was needed in solving this problem. Some 'actors', like number of children, ventilation and the CO_2 content of incoming air could have been varying quantities. Hence, the niche construction was likely to empower the students.

Principle of cultural resonance: the problem made sense in the context of environmental engineering and HVAC engineering and even larger social contexts. Some students also found connections to other courses, e.g. possible common problems.

CONCLUSION

The purpose of the present paper was to explore how mathematical education for engineering students can promote sustainable development. We approached engineering as human niche construction and sustainable development as a *cybernetic* phenomenon. Using Papert's concept of emergent programming, we introduced a framework for sustainable human niche construction.

During this study, it was interesting to find that we, humans, are not very special among other life forms. Some researchers have used biological and ecological intuitions to elucidate social phenomena. Engeström (2008), for instance, uses mycorrhizae to describe the essential features of new emerging form of agency, called knotworking. Earlier Deleuze and Guattari (1987) had used the concept of rhizome much in the same sense to highlight the importance of horizontal and multidirectional connections in human lives, in contrast to the dominant vertical, treelike images of hierarchy (Engeström, 2008).

The central actor of niche construction appeared to be *feedback*. Historically, this word seems to originate from the language of radio-engineers, who used it to describe a technique for stabilising an amplifier by 'feeding' a fraction of the output 'back' to the input (Papert, 1993). From radio-engineers the term was adopted to cybernetics by Wiener (1948). Papert appears to be the one who brought cybernetic ideas to mathematical education. He also introduced the concepts of emergent and tight programming. These concepts also seem to be generalisable to niche construction in general. Knotworking (Engeström, 2008), for instance, seems to be an example of an emergently programmed system. Papert's *reasoning within*-strategy for emergent programming has variations, like *dwelling in the object* (Engeström, 2008) and Lanier's (2010) *morphing*.

As a result of this study, we constructed a framework showing an overview of the dynamics of niche construction, which can be used as a guideline in the planning of sustainable engineering and engineering education (see Figure 2). As a conclusion, we state that the need to respond to concrete real-world problems concerning the changing environment and especially the runaway objects, is likely to push niche construction towards emergent programming, which is capable of reflective communication with all relevant actors. It is interesting that the difficulty of the problem does not necessarily lead to the difficulty in the solution. The reason for that is that the educational and technological niche can be very powerful, containing, for instance, computational tools to speed up simple numerical calculations.

As a conclusion from the empirical part of the study, we state that sustainability can be promoted in problem-based study module of engineering mathematics if the problems are challenging enough to require emergent programming. The same applies, of course, also to the rest of engineering education. However, joining sustainability with mathematics is likely to change mathematical education, giving it a more problem-centred and concrete direction.

Solving separate problems in mathematics and in professional studies represents unnecessary tight programming. We propose that a more sustainable way for educational planning would be mycorrhizae-like co-operation between teachers of different expertise, where the role of mathematician could very well be to represent theoretical perspectives to sustainability.

In the development of new curriculum for the Environmental Engineering degree programme in Mikkeli University of Applied Sciences, the leading principle has been to embed subjects like mathematics and physic more closely into the study modules of environmental engineering.

REFERENCES:

Barab, S. A. (2006). Design-based research: A methodological toolkit for the learning scientist. In R. K. Sawyer (Ed.), *The Cambridge Handbook of the Learning Sciences* (pp. 153–169). Cambridge: Cambridge University Press.

Berg, A. (2008). *Ympäristöongelmien ratkaisu vaatii enemmän kokeilumieltä* [Tackling environmental problems requires more experimental view]. (2008, July 4). Helsingin Sanomat, p. A2.

Bock, W. J. (1980). The definition and recognition of biological adaptation. *American Zoologist, 20,* 217–227.

Boyden, S. (1987). *Western civilization in biological perspective: Patterns in biohistory.* Oxford: Clarendon Press.

Collins, A., Joseph, D., & Bielaczyc, K. (2004). Design research: Theoretical and methodological Issues. *The Journal of Learning Sciences, 13,* 15–42.

Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia.* Minneapolis: University of Minnesota Press.

Dillon, P. (2008). Creativity, wisdom and trusteeship – niches of cultural production. In H. Craft, H. Gardner & G. Claxton (Eds.), *Creativity and wisdom in education* (p. 105–118). Thousand Oaks, CA: Corwin Press.

Engeström, Y. (2008). *From teams to knots. Activity-theoretical studies of collaboration and learning at work.* Cambridge: Cambridge University Press.

Lanier, J. (2010). *You are not a gadget: A manifesto.* New York: Alfred A. Knopf.

Latour, B. (1991). *We have never been modern.* Translated by C. Porter. New York & London: Harvester Wheatsheaf.

Latour, B. (2005). *Reassembling the social.* Oxford: Oxford University Press.

Näsäkkälä, E. (1999). *Introducing simulation models into chemistry classrooms. A study in a Finnish senior secondary school with an international baccalauriate section.* Unpublished doctoral dissertation. University of Helsinki, Helsinki, Finland.

Odling-Smee, F. J., Laland, K. N., & Feldman, M. W. (2003). *Niche construction: The neglected process in evolution.* Princeton, NJ: Princeton University Press.

Papert, S. (1980). *Mindstorms, children, computers and powerful ideas. All about LOGO – how it was invented and how it works.* New York: Basic Books.

Papert, S. (1993). The children's machine: Rethinking school in the age of the computer. New York: Basic Books.

Wiener, N. (1948). *Cybernetics: control and communication in the animal and the machine.* Cambridge, MA: MIT Press.

Wiener, N. (1954). *The human use of human beings: Cybernetics and society.* Boston: Houghton Mifflin.

World Commission on Environment and Development (WCED). (1987). *Our common future.* Oxford: Oxford University Press.

Beliefs of mathematics teachers in grades 7-9 about teaching and learning mathematics: The qualitative and quantitative perspectives

Aļesja Šapkova

Daugavpils University, Latvia

ABSTRACT

The aim of the present research is to determine the approach to learning (traditional, formal, or constructivist) preferred by mathematics teachers in Latvia in their beliefs on effective teaching and learning of mathematics. The present study is a part of Nordic-Baltic comparative research in mathematics education (NorBa) with participation of 390 mathematics teachers in Latvia of diverse socio-demographic groups; the research makes use of 26 statements of the quantitative part of the survey. To have a deeper interpretation of the survey results, phenomenological interviews with two respondents of the survey have been carried out. It was revealed that the beliefs of mathematics teachers about effective teaching and learning of mathematics are more tended towards constructivism, though in many cases teachers still hold strong traditional and formally tended beliefs. The research results could be useful for education policymakers, researchers, administrators who need information to improve their activities with the aim of securing the sustainability of the learning process.

Key words: teaching of mathematics, teachers' beliefs, constructivist beliefs, formal beliefs, traditional beliefs

THEORETICAL FRAMEWORK

Despite the long history of studying beliefs, they remain little investigated. There are several reasons for this: problem with defining beliefs, objective specifying of beliefs, vague notion of the process of changing beliefs, etc.

Really, according to Mansour (2009), beliefs are one of the most difficult concepts to define. So the definitions of beliefs have been varied in the literature (Bingimals & Hanrahan, 2010). In the present article, beliefs are defined as an individual's subjective knowledge of a certain object or concern for which knowledge there may not necessarily be any tenable basis in objective considerations (Pehkonen, 1994).

Problems with objective location of beliefs are caused by the fact that beliefs are hard to distinguish from emotions and knowledge. For greater objectivity, in the present research we used both quantitative research methods for locating beliefs and qualitative ones to particularise them.

The article focuses on teachers' beliefs on teaching and learning. The urgency of studying teachers' beliefs is justified by the fact that, once acquired, the beliefs are eventually reproduced in classroom instruction (Handal, 2003). Teachers' beliefs are also affected by the subject they teach. Studies of teachers' beliefs in *mathematics education* have investigated teachers' beliefs about the *nature of mathematics* (Ernest, 1989), beliefs about *teaching mathematics* (Cobb, Wood, & Yackel, 1992), beliefs about *learning mathematics* and beliefs about *students as learners* (van der Sandt, 2007).

In this article, we will focus on mathematics teachers' beliefs on effective *teaching and learning of mathematics* (BETLM) and the way mathematics teaching and learning should occur ideally.

Two key constructs on the *learning of mathematics* are as follows: viewing learning as the active construction of knowledge as a meaningful connected whole versus a passive reception of knowledge, and the development of autonomy and the learner's own interest in mathematics versus a view of the learner as submissive and compliant (van der Sandt, 2007).

At the same time, classification of mathematic teachers' beliefs on *teaching mathematics* is varied. For instance, Kuhs and Ball (1986), as cited in Thompson (1992), have identified the following views teachers hold of how mathematics should be taught: learner-focused; content-focused with an emphasis on conceptual understanding; Platonist; content-focused with an emphasis on performance; classroom-focused with mathematical teaching based on knowledge about effective classrooms.

The present article regards three perceptions of mathematics (Dionne, 1984): (1) the *traditional perception* of mathematics means calculations and following rules; (2) the *formalist perception* of mathematics stresses rigorous proof and exact use of language; and (3) the *constructivist perception* of mathematics puts learners and their needs in the first place, and therefore emphasises the use of learner-centred teaching methods.

One of the major trends of investigating teachers' beliefs is that of changing of teachers' beliefs. Ernest (1989) states that teaching reforms require changes in teachers' deeply-held beliefs about teaching and learning. Therefore, changes in teachers' beliefs may become a guarantee of sustainability of education reforms.

Teachers in Latvia at present are undergoing changes in their beliefs in line with the changing paradigm in the system of education: from providing knowledge to learner-

focused approach to skill acquisition; from learner as a passive participant of the process of learning to an active one; from teacher as a provider of knowledge to teacher as an adviser. Hence, studying Latvian teachers' beliefs may provide important information about changing beliefs and the factors affecting this process.

Accordingly, the following research questions were set: (1) *What approach to learning (traditional, formal, or constructivist) is preferred by mathematics teachers in Latvia in their BETLM? (2) Are there any relationships between Latvian mathematics teachers' constructivist, traditional and formal BETLM? (3) How do teachers account for the trends of changing beliefs in their BETLM?*

METHOD

Instrument

The present study is a part of Nordic-Baltic comparative research in mathematics education (NorBa). The research makes use of 26 statements of the quantitative part of the survey within NorBa project (part E). The 26 statements to be evaluated according to a 5-point Likert scale were grouped in three groups according to Dionne (1984): traditional (8), formalist (8) and constructivist (10) statements.

To assess the reliability of the scale, Cronbach Alpha coefficient was calculated for each of three groups of items: traditional (0.51), formal (0.69), and constructivist (0.72) items. Thus, it may be concluded that reliability level of part E of the questionnaire is average and each part may be used in the research, though the results will not have the highest degree of probability yet.

To provide a deeper interpretation of the survey results, semi-structured phenomenological interviews have been carried out. They were aimed at specifying mathematics teachers' beliefs on teaching mathematics, the construct of teachers' beliefs on teaching mathematics as well as interpreting the results of the survey. The interviews were based on the results of the survey and consisted of the following parts:

1. Introduction: changes in mathematics education and the role of mathematics in interviewee's life;
2. Teachers' beliefs on (1) traditional and constructivist approach to teaching; (2) efficient teaching and learning and (3) efficient teaching and learning of mathematics (BETLM);
3. Teachers' routine work in class;
4. Conclusion.

Each part of interview consisted of 5 to 12 questions. According to the research questions, the present study is based on part 2 (3) of the interview, though some topics, e.g. change of beliefs, were raised in other parts as well.

Sample and procedure

The sample of mathematics teachers in grades 7–9 included 390 mathematics teachers from different regions of Latvia: Latgale (24%), Vidzeme (16%), Kurzeme (12%), Zemgale (9%) and Riga (39%). From all participants, 377 (97%) were female, 294 (75%) worked in

schools of general education, and 96 (25%) worked in school of ethnic minorities, 165 (42%) of all participants lived in big towns, and 225 (58%) lived in a small town or countryside.

By Chi-square tests no statistically significant differences were found between the sample and the investigated population.

The sample consisted of teachers of diverse age (from 25 to 74, M=47, the dominant age group from 40 to 49 years of age), different education (the majority of respondents held a bachelor or Masters degree) and varying duration of teaching experience (from 1 to 51 years, M=23, the biggest group from 26 to 30 years of teaching experience).

The data collecting process was divided in two stages: (1) respondents filled in questionnaires electronically and sent them to the appointed e-mail address (October – December, 2010), (2) 2 respondents were interviewed (May – October, 2011).

Both interviewees were 38-year-old women residing in a city, mathematics teachers holding Masters degree, with work experience of 15 and 17 years. During the interview (1 to 1.5 hours), interviewees had maximum opportunity to tell their own story on the topics raised. Interviews were audiotaped and transcribed.

Data analysis

The following methods of statistical analysis were used for data processing: Kolmogorov-Smirnov test to assess the distribution of data, Descriptive Statistics, Frequencies, Mann-Whitney criterion, Wilcoxon criterion, Correlations as well as Cronbach Alpha to assess the reliability. Interview data were analysed by continuous comparative analysis (Goulding, 2002).

RESULTS

According to Kolmogorov-Smirnov criterion, the data on all items significantly differed from normal distribution, therefore the statistical analysis of differences in items was conducted using non-parametrical criterions of data analysis.

Teachers' traditional, formal and constructivist BETLM

The descriptive statistics characterising the teachers' traditional, formal and constructivist BETLM are summarised in Table 1.

Table 1. Descriptive statistics on Latvian mathematics teachers' traditional, formal and constructivist BETLM

Groups	Items	Mean ±SD	Disagree (%)	Middle (%)	Agree (%)	Median	Mode
Traditional	E2. In a mathematics lesson, there should be more emphasis on the practising phase.	3.48±0.93	12.8	34.9	52.3	4	4
	E6. In mathematics teaching, one has to practice much above all.	3.93±0.95	6.9	24.6	68.5	4	4
	E13. The learning of central computing techniques must be stressed.	4.14±0.81	20.8	0.3	78.9	4	4
	E14. Pupils should get the right answer when solving tasks.	2.72±1.04	43.6	31.3	24.9	3	2
	E16. A pupil need not necessarily understand each reasoning and procedure.	2.26±1.11	63.2	20.6	16.2	2	2
	E17. Routine tasks should be solved where the use of the known procedure will surely lead to the result.	2.93±0.98	32.3	39.9	27.8	3	3
	E19. Mathematical knowledge, such as facts and results, should be taught.	2.51±0.98	51.4	33.2	15.5	2	2
	E23. In assessment, the presented solutions of the tasks should be taken into account.	3.75±1.01	10.8	26.8	62.4	4	4
	Average	**3.22±0.98**	**30.2**	**26.5**	**43.3**		
Formal	E1. One has to pay attention to the exact use of language.	4.43±0.84	2.9	11.8	85.3	5	5
	E4. Working with exact proof forms an essential objective of mathematics teaching.	3.31±1.04	23.3	33.1	43.6	3	3
	E7. The proof of the Pythagorean theorem has to be worked in a mathematics lesson.	3.51±1.06	18.6	28.1	53.3	4	4
	E8. The irrationality of the number $\sqrt{2}$ has to be proved.	2.62±1.13	48.5	29.5	22.0	3	2
	E11. In particular, the use of mathematical symbols should be practised.	3.42±0.95	17.5	34.9	47.6	3	4
	E12. In teaching, one should proceed systematically above all.	4.54±0.64	6.4	32.6	61.0	5	5
	E18. Abstraction practice should be stressed in mathematics.	2.89±0.86	31.2	45.9	22.9	2	2
	E20. Mathematics teaching should emphasise logical reasoning.	4.56±0.67	1.3	4.9	93.8	5	5
	Average	**3.66±0.97**	**18.7**	**27.6**	**53.7**		
Constructivist	E3. Mathematics has to be taught as an open system that will develop via hypotheses and cul-de-sacs.	3.57±0.93	12.1	32.7	55.2	4	4
	E5. Sometimes teaching should be realised as project-oriented, and prerequisites for it should be created.	4.06±0.93	6.9	18.5	74.6	4	5
	E9. In mathematics teaching, learning games should be used.	4.05±0.87	4.4	20.0	75.6	4	4
	E10. As often as possible, pupils should work using concrete materials.	4.17±0.83	3.8	15.9	80.3	4	5
	E15. The teacher should try to get pupils involved in an intensive teaching discussion.	3.95±0.86	5.2	22.8	72.0	4	4
	E21. Pupils should develop as many different ways as possible of finding solutions, and in teaching they should be discussed.	4.32±0.80	3.6	8.7	87.7	4	5
	E22. Pupils should formulate tasks and questions themselves, and then work on them.	3.98±0.88	4.4	23.9	71.7	4	4
	E24. The teacher should deal with tasks in which pupils have to think first and for which it is not enough to merely use calculation procedures.	4.23±0.75	2.1	11.8	86.1	4	4
	E25. Pupils should learn how the mathematics can be used in everyday life.	4.17±0.88	4.6	14.9	80.5	4	5
	E26. Students don't need to drill mathematical routines that can be done by computer	3.03±1.22	34.7	28.0	37.3	3	3
	Average	**3.95 ±1.06**	**8.2**	**19.7**	**72.1**		

The group of constructivist beliefs has the biggest mean value (*3.95 ±1.06*). More than 70% of respondents agreed to each statement of the group of constructivist beliefs except for E26 (*Students don't need to drill mathematical routines that can be done by computer*) and E3 (*Mathematics has to be taught as an open system that will develop via hypotheses and cul-de-sacs*). The highest mean value *(4.32±0.80)* not only in the group of constructivist beliefs but in all groups belongs to the statement E21 (*Pupils should develop as many different ways as possible of finding solutions, and in teaching they should be discussed*). In the group of constructivist beliefs, mode and median, except for question E26, is no less than 4.

The smallest mean belongs to the group of traditional beliefs (*3.22±0.98*), while for all groups question E16 (*A pupil need not necessarily understand each reasoning and procedure*) has the smallest mean (*2.26±1.11*). In traditional beliefs group, mode and median values are from 2 to 4.

However, many questions reveal strong traditional and formal beliefs, e.g. 78.9% respondents believe that *learning of central computing techniques must be stressed* (E13), 85.3% respondents agree that *one has to pay attention to the exact use of language* (E1), and 93.8% believe that *mathematics teaching should emphasise logical reasoning* (E20). The mode and median of these questions are the highest reaching the maximum value 5. Mode and median values of other questions are from 2 to 4.

The relationships between Latvian mathematics teachers' constructivist, traditional and formal BETLM

To specify the relationships between Latvian mathematics teachers' constructivist, traditional and formal BETLM, first of all, the replies in each part were summed up for each respondent. Thus, three new aggregate indicators were gained: constructivist BETLM (CB), formal BETLM (FB) and traditional BETLM (TB). Analysis of correlation between these three indicators shows that CB correlate (r=0.38, p<0.01) with FB and FB correlate (r=0.34, p<0.01) with TB. Wilcoxon criterion also shows that there exists coherence between CB and FB, and between FB and TB (p<0.01) that are based on a positive rank (see Table 2).

Table 2. Coherence between Latvian mathematics teachers' constructivist, traditional and formal BETLM

		N	Mean Rank	Sum of Ranks
CB – FB	Negative Ranks	5[a]	34.50	172.50
	Positive Ranks	**363[b]**	**186.57**	**67723.50**
	Ties	2[c]		
	Total	370		
FB – TB	Negative Ranks	65[d]	113.51	7378.00
	Positive Ranks	**289[e]**	**191.89**	**55457.00**
	Ties	22[f]		
	Total	376		

a. CB < FB, b. CB > FB, c. CB = FB, d. FB < TB, e. FB > TB, f. FB = TB

Interviews

In the present article, interviews with teachers were used to find out the way teachers explain the trend for changing beliefs. Data analysis proceeded in the following stages: (1) Search for topics and combining topics; after combining topics only those of changing beliefs were used for further analysis; (2) It was found out which questions raised the respective topics; (3) Replies of two respondents to these questions were compared followed by open and axial coding of topics.

Replies to the specific interview questions were analysed:

1. How has teaching mathematics changed since your school days until the present day? What has remained unchanged? Why? (1st part of the interview)
2. Do you easily accept the new trends in teaching mathematics? What are the reasons for that? (part 1)
3. What is the difference between the teacher of mathematics and teachers of other subjects? Why? (part 2(3))
4. What has mostly influenced contemporary teaching of mathematics in Latvia? Name positive and negative factors. (part 2(3))
5. Teaching mathematics at school, studies in pedagogical university, practice, further education courses, teacher experience exchange. Which of these stages of teacher's professional growth has the major impact on teacher's decision-making in their routine work? Which are the most important? (part 2(3))
6. In 2011 an experiment was conducted. In Siauliai, mathematics competition was simultaneously held for learners and teachers of mathematics. Participation of mathematics teachers was voluntary and only five teachers participated. Why was the number of participants so small? Would you participate in this competition? (part 4)

Open coding of the respondents' replies showed that both respondents agree that since their school days teaching mathematics had seriously changed: new forms and methods of teaching have appeared and new technologies introduced. This has also resulted in the diversity of teaching materials and teachers' further education courses. Each respondent mentioned the necessity of individual approach in teaching:

I1: Previously everything was standardised. You knew what to expect from a class. But now teacher tries to find new approaches to make the process more exciting.

I2: Now, of course, you wish to show something bright, more exciting, so that children get interested. Because children nowadays are free-minded and they say: „Why so? Why not otherwise?"

Therefore, changes in teaching and learning mathematics are conditioned by the fact that the whole process of teaching and learning mathematics is focused on learners' needs, not on the teacher or the content of the subject. Accordingly, the forms, methods, and teachers' beliefs must be changed.

At the same time, teaching and learning mathematics have an unchanging constant – mathematics (I1) or the content of the subject (I2). This fact affects the change of teachers' beliefs.

I1: Our science [mathematics] is such. It is classical. And new discoveries do not happen each year. For instance, chemistry is rapidly developing and the subject dictates the need of constant change, changing one's beliefs. But we are more conservative.

Both respondents also admitted that they find it hard to accept new changes (I2) or must overcome obstacles in accepting them (I1), e.g. exhaustion, overburden that are caused by high professional demands on teachers.

> I1: We are exhausted by learning, we learned at school, at the university, we took Masters studies. We take lots and lots of various courses. We are constantly learning. ... When I got the second degree of primary school teacher, when the exams had been passed, I decided never to learn again. Never.

Secondly, teachers are ashamed of their ignorance. Hence, in her reply to question about the mathematics competition, the respondent replied as follows:

> I2: I would have come, done sums and then who knows whether I would have passed or not... I would have been ashamed that I could fail and the results would be on the internet. They would be available not only to everyone in the town but over Latvia and the world....

On the other hand, there are not only factors slowing down the acceptance of new beliefs but also those that accelerate it. The respondents consider that accepting new beliefs was made possible by the development of personal traits (influenced by project work):

> I1: That project taught me to communicate with everybody... I started expressing my beliefs openly. I learned to accept other people's beliefs and respect them. This did change me greatly and gave me impetus. The rest was just adding up.

Besides, social environment has a great significance in accepting or rejecting the novelty:

> I1: This may be improved by school staff, most probably. ... I used to think that administration did not have a great impact on teacher's development, their work. With each year I become more and more certain that they do and it is not control but support, advising. And I think that my task as an administrator is to give hope, give an opportunity to understand: you may always rely on me.

DISCUSSION AND CONCLUSION

Teachers of mathematics in Latvia prefer constructivist approach in their BETLM, though in many cases teachers hold strong traditional and formally-oriented beliefs. These conclusions correspond with prior research which showed that the beliefs of Latvian teachers of mathematics on *efficient teaching and on effective teaching and learning* are more inclined towards a constructivist approach as well (Šapkova, 2011). Moreover, in most European countries endorsement of constructivist beliefs is stronger than that of traditional beliefs (OECD [Organisation for Economic Cooperation and Development], 2009).

Strong traditional and formal trends in some Latvian teachers' BETML may be the consequences of the fifty years long period of Soviet occupation when mathematics education in Latvia was isolated from the global context and was determined by the scientific doctrine of Russia. This conclusion is justified also by Finnish and Estonian research of mathematics teachers' BETLM (1987–1990) (Pehkonen & Lepmann, 1994). However, the comparison of the research results proves that, despite the 20 years that have passed since the end of the Occupation, mathematics teachers in Latvia still hold stronger traditional

(items E2, E6, E13 and E23) and formal (items E1, E11, E18 and EE0) beliefs as compared to their Estonian colleagues in the Soviet period (1987–1990). It is possible that these differences in mathematics teachers' BETLM can clarify differences in Estonian and Latvian students' achievements in PISA tests as well: Estonia had higher average scores than Latvia (512 and 482) (Geske, Grīnfelds, Kangro, & Kiseļova, 2010).

Teachers' formal BETSM affect their traditional BETLM: the more teachers are tended to formalism in their beliefs, the less they are tended towards the traditional approach. Besides, the teachers' constructivist BETLM in this research affects teachers' formal BETLM: the more teachers are tended in their beliefs towards constructivism, the less they are tended towards formalism. Constructivism is learner-focused, while formalism focuses on the content of the subject and teacher's central role in learning. Hence, formalism is minimally concerned with learner's needs, and focusing on learner's needs reduces focusing on content and the teacher.

Relatedness of formal beliefs to other beliefs may be accounted for by the conservative and formal character of the science of mathematics leading some teachers to the conclusion that even admitting the need to change, the best traditions in teaching mathematics must be preserved. Often preservation of traditional or formal beliefs and acceptance of new beliefs lead to the formation of a rather contradictory system of beliefs that, in turn, suggests that most teachers accept or reject new beliefs instead of constructing them.

Yet, if teachers' beliefs remain traditional, the issue of how to help teachers change their beliefs becomes especially urgent, in other words, the problem is how to encourage teachers to *construct* their new beliefs instead of just accepting or rejecting them.

What concerns the process of constructing beliefs, it is based on the process of knowledge construction in constructivism (Brooks & Brooks, 1993): (1) gaining and understanding knowledge based on constructivist beliefs on teaching and learning mathematics; (2) discovering new knowledge in teachers' independent work; (3) expanding the limits of the gained knowledge by applying it in routine class work; (4) critical assessment of the gained experience, searching for possible alternative solutions of the problem.

It is important to locate the constituent parts and peculiarities of the above-mentioned stage as well as to realise what happens to teachers' beliefs if some stages are missing in their formation (from 1 to 4) and what could be done to avoid such drawbacks.

In further studies, there will be an opportunity to compare the obtained results on BETLM of Latvian mathematics teachers with BETLM of teachers in Baltic and Nordic countries within NorBa project. Research on teachers' beliefs in different countries will allow for identifying both the known and the so far unknown aspects.

The research results could be useful for education policymakers, researchers, administrators who need information to improve their activities to secure the sustainability of the process of learning.

ACKNOWLEDGEMENT

REFERENCES:

Bingimals, K., & Hanrahan, M. (2010). The relationship between teachers' beliefs and their practice: How the literature can inform science education reformer and researchers. In M. F. Tasar & G. Cakmakci (Eds.), *Contemporary Science Education Research: International perspectives* (pp. 415–422). Ankara: Pegem Akademy.

Brooks, J. G., & Brooks, M. G. (1993). *In search of understanding: The case for constructivist classrooms.* Alexandria, VA: Association of Supervision and Curriculum Development.

Cobb, P., Wood, T., & Yackel, E. (1992). A constructivist approach to second grade mathematics. In E. Von Glasersfeld (Ed.), *Radical Constructivism in Mathematics Education*. Dordrecht: Kluwer.

Dionne, J. (1984). The perception of mathematics among elementary school teachers. In J. Moser (Ed.), *Proceedings of the 6th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 223–228). Madison, WI: University of Wisconsin.

Ernest, P. (1989). The knowledge, beliefs and attitudes of the mathematics teacher: A model. *Journal of Education for Teaching, 15*, 13–34.

Geske, A., Grīnfelds, A., Kangro, A., & Kiseļova, R. (2010). *Ko skolēni zina un prot – kompetence lasīšanā, matemātikā un dabaszinātnēs. Latvija OECD valstu Starptautiskajā skolēnu novērtēšanas programmā 2009* [What students know and can do – competence in reading, mathematics and natural science. Latvia in the OECD programme for international student assessment, 2009]. Riga: LU Akadēmiskais apgāds.

Goulding, C. (2002). *Grounded theory.* London: Sage Publication Ltd.

Handal, B. (2003). Teachers' mathematical beliefs: A review. *The Mathematics Educator, 13*(2), 47–57.

Mansour, N. (2009). Science teachers' beliefs and practices: Issues, implications and research agenda. *International Journal of Environmental & Science Education, 4*(1), 25–48.

OECD (Organisation for Economic Cooperation and Development). (2009). *Creating effective teaching and learning environments: First results from TALIS.* Paris: OECD Publishing.

Pehkonen, E. (1994). Teachers' and pupils' beliefs in focus – consequence of constructivism. In M. Ahtee & E. Pehkonen (Eds.), *Constructivist viewpoints for school teaching and learning in mathematics and science* (pp. 27–33). Helsinki: University of Helsinki.

Pehkonen, E., & Lepmann, L. (1994). Teachers' conceptions about mathematics teaching in comparison (Estonia – Finland). In M. Ahtee & E. Pehkonen (Eds.), *Constructivist viewpoints for school teaching and learning in mathematics and science* (pp. 105–110). Helsinki: University of Helsinki.

van der Sandt, S. (2007). Research framework on mathematics teacher behaviour: Koehler and Grouws' framework revisited. *Eurasia Journal of Mathematics, Science & Technology Education, 3*(4), 343–350.

Šapkova, A. (2011). Constructivist beliefs of Latvian mathematics teachers: Looking into future. *Journal of Teacher Education for Sustainability, 13*(1), 99–112.

Thompson, A. G. (1992). Teachers' beliefs and conceptions: A synthesis of the research. In D. A. Grouws (Ed.), *Handbook of research on mathematics teaching and learning: A project of the National Council of Teachers of Mathematics* (pp. 147–164). New York: Macmillan.

Sustainable ICT in education

'Children as agents for social change': A technology-supported pedagogical framework

Amit Roy

University of Eastern Finland, Finland

Jarkko Suhonen

University of Eastern Finland, Finland

Mikko Vesisenaho

University of Jyväskylä, Finland

ABSTRACT

Social problems in a society exist in background to most educational setups. Though some text-based learning about pressing social problems may take place in regular education, quality learning about these problems is vital for sustainability as well as healthy development of the society. Quality learning about authentic problems may need deep knowledge, ability to think critically about the problem and the skills to come up with possible solutions. Quality learning about social problems is not achieved in many countries because of a shortage teachers and/or expertise among available teachers about these issues. Inadequate education may lead to maintenance and even aggravation of the problems. Non-western cultures may also have authentic latchkeys to solve their own problems. Driven by un-wholistic economic foundations of the global economy, which is Western in nature, many ICT driven projects happen to disrespect the diversity of cultures and local adaptability of solutions, and promote cultural imperialism. Working-level local experts in problem domains are knowledgeable resources who understand the acute social problems at local level. In this paper, we propose a pedagogical framework, Children as Agents for Social Change (CASC), that combines information and communication technologies (ICTs) with constructivist educational practices in order to promote quality learning about social issues among middle and high school children. The framework connects learners to an authentic issue coming from their local context, which is explained

by the working-level experts in their local language. Learning about the social problem is also supported through multimedia technologies in order to explain complex issues in simpler ways. The CASC framework can be largely independent of the kind of problem being explained. Assisted by supporting technology, CASC pedagogy can make students more responsible in their behaviour towards social problems in their own community, and ultimately will lead to a better quality of life in a community. In this paper, we will also briefly share some of the first results of applying the CASC framework in Tanzania in order to promote learning about authentic problems related to forest fires.

Key words: CASC framework, CASC pedagogy, ICT4E, ICT4D, transformative education, role of technology in transformative education

INTRODUCTION

Stephen Sterling (Sterling, 2011) suggests that any educational system tends to have at least four main functions that affect its policy, theory and practice: the socialisation function, the vocational function, the liberal function and the transformative function. The latter, the transformative education, is concerned with inculcating and encouraging change towards a fairer society and a better world. Sterling mentions that first two of these four functions – the socialisation and vocational ones – tend to emphasise instrumental values, i.e. they suggest education as a means to an end. They stress on vocations and economic competitiveness of the future work force in the global economy. The latter two of these functions which may also be labelled under liberal humanist view of education tend to emphasise intrinsic values, i.e. education as a good in itself with inherent value and meaning.

For a balanced growth of society, both instrumental and intrinsic views are to be given equal importance. However, in practice, the four functions keep struggling and competing against each other. In recent times, when most governments around the world are trying to adjust to the demands of global markets and enhance international competitiveness, liberal and transformative functions of education often get neglected. Education in most countries is highly concentrated on achievement of academic excellence, while other important aims of education such as educating students properly about the problems in their own society and local community are often ignored (see Gyekye, 1997; Sutinen & Vesisenaho 2006; Pulkkinen, 2007; Vesisenaho, 2009). Ignoring the need for a wholesome education not only promotes the factory model of education; it also promotes one's alienation from living issues of social, ecological and cultural concerns as well as ethical responsibilities that we must have for one another and the world around us. Quality education for social responsibility must promote knowledge, ability to think critically and skills to act through democratic and participative ways. Though often verbalised as important it is nevertheless a generally ignored educational objective of the development models. In this article, we propose a Children as Agents of Social Change (CASC) framework which combines information and communication technologies (ICT) with constructivist learning practices to promote transformative education in a culturally sensitive way. The aim of the article is to introduce the CASC framework and discuss the first results of using the framework in real-life learning settings. The objectives of this study can be summed

into the following questions: (1) *How can ICT be used to connect expertise of a relevant social problem to middle and high school children?* and (2) *How can ICT and contemporary educational practices be used to support transformative education among middle and high school children?*

The article is constructed as follows: first, we discuss the challenges and possibilities of transformative education in developing countries; second, we describe the CASC framework, including its components and pedagogical solutions; then, we discuss the first experiments of applying the CASC framework; finally, we conclude with the results of the study.

CHALLENGES AND POSSIBILITIES OF TRANSFORMATIVE EDUCATION

Transformative view of education has been endorsed by philosophers (such as Jiddu Krishnamurti, Paulo Frerie and John Dewey) and psychologists (such as Howard Gardner) who refer it to as 'the institution designed to change minds' (Dewey, 1916; Freire, 2000; Krishnamurti, 2002; Gardner, 2006). Nobel Prize winner economist James Heckmann suggests that investment in childhood development is a sensible way to reduce costs and create economic growth (Heckman, 2008). We agree that education is a powerful solution to promote change for the better world.

In practice, however, philosophies are set aside and the chief objective of most educational systems is mainly concentrated on hitting the bulls-eyes of academic test performance. Most of the other aims of education, including the principles of transformative education, are secondary in nature. This is especially true in most developing countries. In addition, the challenges in the field of education, particularly in developing countries, are multidimensional, ranging from improvements in PISA scores to preparing the students to meet the challenges that exist within the society. In a developing country, any serious educational policy maker's ability to bring transformative education to schools is seriously obstructed by two problems: (1) there are not enough teachers and (2) the available teachers often do not have knowledge, expertise or interest to teach about the pressing social problems in their society (Tooley, 2009). In both cases, school education ends up neglecting quality education about issues of actual social importance.

This creates a serious gap as it leaves the child with unclear ideas about the problems existing within their own societies, as well as prevents the children from a deeper understanding of real and pressing social problems. Since the aim of education is to prepare the children for life, this situation is problematic. It would be reasonable to deduce that lack of quality transformative education contributes to sustaining and maintaining the problems in the society and, hence, impeding actual development.

Though there is a systematic lack of support to quality transformative education, educators around the world, have been waiting for some opportunity to connect the children to the society in different ways. In addition, various international organisations such as United Nations Educational Scientific and Cultural Organisation (UNESCO), non government organisations (NGOs) or individuals working in such a critical field may want to promote transformative awareness in their own respective field through education. This assumption can be verified in the success of transformative pedagogical models

like Design for Change (DfC). DfC claims to be the largest global movement designed to give children an opportunity to express their own ideas for a better world and put them into action. The concept of DfC was formulated by Kiran Bir Sethi, a teacher and social-entrepreneur based in Ahemadabad, Gujarat in India. DfC sees itself as a process that gives "children an opportunity to express their own ideas for a better world and put them into action" (Design for Change, 2013, para. 1) and aims to train students in the Gandhian principle of "be the change you want to see" (Drenttel, 2010, image 3: M. K. Gandhi, motto for Design for Change Contest, 2009). Sethi's DfC is an implementation of Howard Gardner's Disciplinary Thinking and gives the participants an opportunity to find a task for social good. DfC approach can be concentrated into four key aspects: "Feel (find a problem), Imagine (imagine a solution), Do (act out the solution) and Share (share it with others)" (DfC Concept Note, 2013, para. 3). Though DfC started in India, in 2011, it reached 33 countries and over 300,000 schools inspiring hundreds of thousands of children, their teachers and parents (Drenttel, 2010; Design for Change, 2012). In our opinion, the model is well designed and follows contemporary social-constructivist learning principles. However, we argue that DfC is too open to absorb any kind of social issue and that it is not focused on any single problem while in the CASC framework the purpose is to put emphasis on one well-defined social problem in a local context.

One or more social problems are predominant in almost all countries. If an educational system, an educational institution or members of the society want to provide quality education about any such problems to their youngsters – so that they understand the patterns of behaviour aggravating the problem and the implications of these problems well – they may want to organise the learning experience based on one central problem or 'theme'. An example of 'theme based' education can be UNESCO Decade of Education (DoE) programme; the theme for the DoE programme from 2005–2014 is Education for Sustainable Development (Decade of Education for Sustainable Development [DESD], 2012). We think that technology supported initiatives using the basic DfC guidelines can be used for theme based education and may help put a laser like sharp focus on a single social problem across a region. This approach may ensure an intense effect and can reach far and wide.

'CHILDREN AS AGENTS OF SOCIAL CHANGE' FRAMEWORK: COMBINING ICTS AND AUTHENTIC SOCIAL PROBLEMS FROM LOCAL CONTEXT

The basic hypothesis-on-probation of CASC posits that a pedagogical framework that combines ICTs with problem-based pedagogical approach promotes awareness and critical thinking skills among middle and high school children (Kozma, 2005). The framework can be largely independent of the kind of problem to be explained to the children. We are aware that several ICT based initiatives have not been very successful in social domains, but our focus is to find an ICT solution that is relevant and meaningful in a given learning setting (Kozma, 2005; Day & Greenwood, 2009). We also argue that quality transformative education provides expert knowledge to the students, encouraging them to think critically and learn by doing some action. The main principles of the CASC framework are summarised in the following points:

1. Social problems exist as a background to any educational setup. Quality learning about social problems is vital for advancement of the society. Programmes like Decade of Education from UNESCO identify that learning about issues of social importance is an important educational objective.
2. Shortage of teachers and lack of expertise among teachers. There is a huge need for teachers in developing countries (Olson, Codde, deMaagd, Tarkelson, Sinclair, Yook, & Egidio, 2011). On the other hand, teachers are mostly busy with meeting academic goals and may lack time, interest, capability or hands-on experiences when it comes to dealing with actual issues of social importance.
3. Focus on authentic local problems. Models like Design for Change present strong evidence that children feel connected to their local context. In the long run, understanding the underlying principles that lead to a social problem is an essential part of learning. Therefore, CASC combines contemporary constructivist pedagogical practices like project-based learning with ICT. Previous research has identified that PBL can equip students with skills in critical thinking, collaboration, communication and problem solving (Gibson, O'Reilly, & Hughes, 2002; Chung & Chow, 2004; Chang & Lee, 2010; Hogue, Kapralos, & Desjardins, 2011).
4. Emphasising responsibility. Achieving educational objectives can make people (current and future citizens) more responsible in their behaviour towards local social problems, leading to a better quality of life in a community.

CASC pedagogical approach

The pedagogical approach in the CASC framework is based contemporary educational principles, such as problem-based learning (PBL) or inquiry learning, which emphasise the following pedagogical solutions (Hung, 2006; Scardamalia & Bereiter, 2006; Resta & Leferrier, 2007):

1. students complete real-life exercises and solve challenging problems together with their peers (Lam, Cheng, & Choy, 2010);
2. teacher's role is to coach and model the thinking processes;
3. various information sources are used in multiple ways;
4. scientific, question driven inquiry strategies are applied;
5. a concrete product/artefact may be produced as an output of the work; and
6. opportunities are given for reflection on experience.

In the CASC framework, a local social problem forms the basis for the PBL process, where students learn about the knowledge that resolves around the problem and the contextual knowledge, as well as develop problem solving skills (Hung, 2006). During the CASC PBL process, students' pursue solutions by asking questions, debating ideas, making, collecting and analysing data, proposing solutions, drawing conclusions, and communicating their findings to others.

Design principles of the CASC Media Artefact

A crucial part of the CASC framework is the Media Artefact, which is supported by meaningful pedagogical practices described above. The core design principles of the CASC media artefact are the following:

- *CASC Media Artefact Guideline 1: Versatile use of media.* Most of the CASC initial intervention artefacts are video based. The term video in this study is defined to include all media with moving pictures and sound used for communication and learning. Videos have been used in classrooms since the early days of filmstrips to the current trend of digital video to support student learning in all branches of education (Fill & Ottevill, 2006; Mitra, Lewin-Jones, Barrett, & Williamson, 2010). According to Choi and Johnson (2007), video is an ideal solution for supporting learning of complex skills, because it can expose learners to problems, equipment and events that cannot be easily demonstrated and understood verbally. In addition, Fill and Ottewill (2006) have shown that video can be used to gain students' attention, create anticipation among students, and increase memorised content among other potential outcomes.

- *CASC Media Artefact Guideline 2: Local knowledge and wisdom.* The grassroot level knowledge and expertise should be incorporated into the content of CASC media artefacts. William Easterly suggests that the working-level experts in aid agencies and NGOs are often very good resources to understand any social issues and have a lot of knowledge about the problems at local level (Esterley, 2006). These experts know the problem domains, but often they are not connected to the schools. So despite the fact that there is knowledge within the communities to effectively deal with social issues, this may not be the common knowledge in the community.

- *CASC Media Artefact Guideline 3: Cultural sensitivity.* According to Selinger (2009), ICT solutions in developing countries are often designed and implemented from a 'western perspective' including technically deterministic linguistic codes, cultural assumptions, social images and Western/European notions. Although CASC uses ICTs to support transformative education, it stays culturally sensitive throughout. The framework ensures that there are no cultural gaps among those imparting knowledge via technology and those receiving it by using experts available within the community itself. As both sides share the same culture and language, the chances of misunderstandings are reduced and chances of establishing communication on shared worldviews are highly increased.

- *CASC Media Artefact Guideline 4: Local language.* Language is an essential key for effective communication and participant inclusion. Several ICT based solutions fail to make an impact because of unrealistic assumptions about cognitive abilities of the children to understand a non-native language. UNESCO (2012) study on languages states: "Recognizing the primary importance that people place on their own language fosters the kind of true participation in development that achieves lasting results" (p. 6). It is argued that children understand a problem more easily when the issue is discussed in their local language (UNESCO, 2012).

- *CASC Media Artefact Guideline 5: Infrastructure sensitivity.* ICT infrastructures in different schools within the same region can be very different, so 'one size fits all' approach is not an option. Depending on the ICT infrastructure available at the schools, various combinations of ICT devices can be used to connect the experts to the school students. However, not all the schools lack infrastructure. Some schools may have projectors or even broadband Internet connections for students, which need to be carefully taken in consideration during the design process.

- *CASC Media Artefact Guideline 6: Two-way communication.* ICTs are a powerful tool of sharing knowledge and information, but it must be emphasised that all genuine communication is two-way communication, i.e. it facilitates questions and responses from its participants to experts. This is very important to keep the CASC artefact authentic and free of bias. Depending on the case of each individual school and the ICT infrastructure available, some form of ICT based communication – synchronous or asynchronous – should be used to provide for a two-way communication channel. Such communication channel may use any media in a language of communication that is easily understandable to both parties. Different channels varying from video based face to face communication channels to collaborative webs for posting questions in text to SMS or mobile calls can be used to establish contact with social workers/experts at a specific time. It must be noted that an intentional lack of a two-way communication may lead to a misuse of this model for purposes of indoctrination.

Table 1 gives a concrete example of how the CASC media artefact guidelines can be applied in practice.

Table 1: Examples of CASC media artefact guidelines

Guideline	Examples
Versatile use of media	Video interviews of working-level expert interviews related to the social problem Use of animations to explain complex phenomena with clarity Use of actual images related to problems
Local knowledge and wisdom	Clippings from local newspapers about the problem at hand. Images from the problem spreading and affected areas related to the theme from student's local surroundings Traditional understanding of the problem and investigation of this understanding in light of scientific findings
Local language	Use of local language makes the topic easily understandable to the child
Cultural sensitivity	Adaptation of the material so that it is culturally sensitive towards the audience, for instance, use of local images and images depicting local surroundings so that the audience can identify themselves with the context; use of a symbol of Swastika may mean something positive in parts of India, while its use may not be culturally appropriate in Europe where it is related to Nazism. Other design issues related to the learning community, environment, local pedagogical practices and country's educational context (Tedre, Apiola, & Cronje, 2011)
Infrastructure sensitivity	If the school does not have proper ICT infrastructure, the team working on such project should be prepared to physically transport the required hardware
Two-way communication	Providing a technology based channel (with or without teachers) to facilitate questioning among children, teachers and experts

CASC implementation principles: Combining pedagogy and media in a meaningful way

The CASC implementation is based on two main phases: preparation phase and the intervention.

1. Preparation Phase

The preparation phase usually consists of the following interrelated tasks that can also be performed simultaneously:

Task 1: Exploring the educational traditions and ICT infrastructure in the target schools. Most schools in developing countries follow textbook-based and teacher-centric teaching traditions. One of the aims of using the CASC framework is to introduce a different way of learning in the selected schools. The design team should survey beforehand if the students are already familiar with PBL. During the visits to the schools, most commonly used teaching-learning methodologies should be observed. At least one teacher should be nominated by the head of the school to participate in the intervention phase of the CASC implementation. These visits are also a chance to survey the ICT infrastructure available at the chosen schools.

Task 2: Identification of experts and local knowledge. Since local experts have an important role in the implementation of the CASC framework, it is crucial to identify suitable experts who are willing to contribute and collaborate with the schools.

Task 3: Meeting and conducting interviews with the local experts. After identifying the experts, the CASC team should arrange a preliminary meeting for introducing the purpose of the CASC intervention. In addition, appointments can be made with the officials in order to record interviews with them.

Task 4: Creation of the CASC media artefact. The CASC Media artefact is designed by following the CASC design principles presented above.

2. Intervention Phase

The second phase in the CASC implementation is the intervention phase, which typically consists of the following activities.

Activity 1: Logistics and introducing of the social problem. During this step, the students are introduced to the social problem by using the CASC media artefact. In the case of video recording, the content of the videos could be shown to the students. The minimum setting for this purpose is a room with electricity, computer, audio speaker for sound reproduction and projector for visual display. If the target schools have access to a multimedia room (a room with electricity, computer, speakers for audio and projector for visual display) along with the Internet and bandwidth to watch a video online, then such a video can be uploaded onto free video channels, such as YouTube. If the school has basic ICT infrastructure, for instance, a multimedia room but no Internet or Internet with slow/low bandwidth then a digital storage device such as DVD or pen/flash drive can be used to send them. If there is no ICT infrastructure available in the school, the CASC team should take the responsibility of arranging the required equipment.

Activity 2: Discussion. The aim of the discussion activity is to foster a deeper understanding of the problem, collaboration and creativity. Students should think to enhance their ability to analyse the problem and synthesise some solution. For the discussion,

students should be divided into groups. The students should be suggested to self-organise themselves into groups based on gender and class level balance, to allow learning and participation in the PBL activities. Generally, the group size should be about 6 students and about 30 minutes should be given to the students to discuss the issue in their groups and to come up with one project which they would want to do to solve the problem at hand. Through discussions with their team members, students can identify projects to be completed by their groups.

Activity 3: Project execution. In the project execution activity, students learn to reflect on the problem more deeply by doing something to solve the problem. This activity gives students a chance to reflect, act, work together with their group members as a team, investigate further, make decisions and take necessary action. After students have identified project based learning activities, they should be given one week for working on their group projects. They should complete their projects along with their regular classes.

The teachers play the role of the facilitator, but they should be aware of the students' choices of projects. The teachers should give instructions or guidance to the students if the latter ask for help; however, the teachers should not do any task for the students. In addition, the students should have some access to the social experts via ICT channels so that they can ask their questions. These synchronous/asynchronous communication channels can be created and/or maintained by organisers/researchers.

Activity 4: Project presentation. For the final stage of the PBL process, the students should be asked to make presentations. Such an exercise will need students to articulate about the problem context, summarise their understanding of the problem as well as the potential solutions from experts and their own understanding about the problem. The students should work in the same teams to create and deliver their presentations.

RESEARCH DESIGN

We conducted the first experiment in real-life settings in Morogoro region along the slopes of Uluguru Mountains in Tanzania. We identified two villages and four secondary schools for an experiment where CASC intervention was tested in practice. We used video CASC media artefact to connect the expertise of local environmental officers to Tanzania's Secondary School students who absorbed the expert information, worked in teams to discuss the local social problem related to forest fires and carried out projects in order to find a solution to the identified social problem (Kihoza, 2011). In the study, Morogoro and Kingo secondary schools comprising 97 participants were used as a control group, while Kayenzi and Kauzeni secondary schools constituting 79 participants were used as an experimental group. The experimental group followed the CASC implementation, while the control group followed the traditional teaching approach.

In the experimental group, three videos based on the CASC media artefact design principles were shown to the students. Video 1: Edited version of interviews with local forest officials. Video 2: Raging forest fire in California. Video 3: Project based learning explained. After the videos were watched, the students participated in group discussions in order deepen their understanding of the social problem. The students were suggested

to self-organise themselves into groups of 9–11 students based on gender and class level balance. Time of about 30 minutes was given to the groups to discuss the issue, and to come up with a concrete project which they would want to do to solve the problem at hand, for instance, problems caused by forest fires. After the groups had identified the topic for their project, they were given one week to work with their projects (Kihoza, 2011). The groups had to complete the projects along with their regular classes. The groups produced a theoretical document and showed in practice that the knowledge of environmental conservation has been well understood. In the final stages of their work, the students were asked to make presentations of their projects. The aim was to articulate about the problem context, summarise their understanding of the problem and discuss the potential solutions.

Various qualitative as well as quantitative techniques such as teacher's interviews, observations, student's self-assessment, pre-test and post-test of both experimental and control groups were used to collect data. Comparison of pre-tests with post-tests of experimental schools as well as comparative analysis of pre-tests and post-tests between experimental and control groups were used to analyse the data. We wanted to know if students had learnt about the problem from the experts' understanding in addition to what they previously knew about the issue; if the students were able to connect to the real problem and if the intervention helped the students to find more about their personal strengths and prompted them to use these strengths in order to solve the issue at hand.

RESULTS

We noticed that the project itself focused into four main aspects in order to solve the problem of forest fires: prevention, avoidance, detection of most affected areas and recovery by planting trees (Kihoza, Roy, Suhonen, Tukiainen, & Vesisenaho, 2012). The students identified education though community visits, discussion with relevant groups of people and direct participation as concrete methods to solve the forest fire problem on local level.

The research results showed that the participants ranked the CASC media artefact to be an effective solution for environmental education (Kihoza, 2011). We measured the effectiveness of knowledge from the quantitative data in the post-tests conducted with the experimental group. The effects of the intervention video to the experimental group when compared to the control group indicate that the use of video can provide benefits in three main ways: (1) integrate creativity and supporting explanatory capabilities to students' understanding; (2) offer good understanding and different knowledge for different viewers and (3) allow participants opportunity for discussion.

When comparing the opinions of the control group with the experimental group, we noticed that the students in the experimental group expressed more diverse ways of solving the forest fire problem than the control group. The majority of students in the control group mentioned community education as their prime activity of interests, while the students in the experimental group had several preferences. Thus, the project work carried out during the study empowered students to learn about the causes of forest fires and, more importantly, of how to tackle the problem in the future. Finally,

we also analysed the quality of learning by evaluating the students' self-assessments which were mainly positive and supportive towards the CASC solution. The teacher in the first school observed that, through using video and project-based-learning, forestry topic was well understood within a short time span as compared to the time generally used in the classroom, and that the school had gained success by seeing students voluntarily planting trees with no teacher instructions. The teacher from the second school mentioned that the students had been missing a big part of education when they learned without study tours and project based activities and that their school now planned to integrate forest tours. The teachers wished that they could have had more projects like CASC so that they could learn to face more challenges for improving environmental conservation efforts (Kihoza et al., 2012).

DISCUSSION

CASC aims to promote expert knowledge about an authentic local problem in local settings of the students. As the experts are working level stakeholders in the problem domains, they know the domain and are generally happy to assist such work. We did not pay any money to the forest officials in Tanzania to be a part of our project. It was a win-win situation. Once these experts have invested time in giving interviews, the same media artefact can be used at several schools and the expert knowledge gets transported and transferred to community at large. CASC cashed on the strengths existing within a community and there were no gaps of worldviews or cultural imperialism as the experts spoke in local language and about a local issue. CASC does not promote technology for the sake of technology and hence it is not technologically or culturally deterministic.

For a balanced society, the liberal and transformative functions should be in balance with the socialisation and the vocational functions. However, as discussed above in the paper, such balance is hard to achieve in developing countries because of a shortage of teachers and lack of expertise among teachers. We posit that it is not lack of text based knowledge that prevents people from acting in the right way to solve the problems existing in their society; rather, it is lack of critical thinking and hands-on practice in skills to solve these problems that causes lack in faith in one's ability to make a difference. Models like CASC give students a chance to learn about the problem, think critically about it and do something to change it. This strategy to empower students may assist them towards liberation.

Shortage of teachers and lack expertise among teachers are some of the biggest obstacles in providing quality learning about social problems. Agencies like UNESCO or any NGOs can use CASC to promote local expert knowledge and understanding to cover for teacher's expertise gap in problem domains in a locally sensitive way among the next generation. We began with the assumption that technology could replace teachers adequately; however, in the process, we have ended up realising that, though technology was a useful tool in spreading the detailed thinking of the experts, which covers up for lack of such expertise among teachers, teachers play a very important role in supporting students learning even in CASC framework.

CONCLUSION AND IMPLICATIONS

Enculturation is the process through which a currently established culture teaches an individual the accepted norms and values of the culture or society where the individual lives. Societies may live in social problem creating and/or maintaining patterns for generations, when these problem patterns are not well understood. Through enculturation, prevailing habits and attitudes of society are replicated by its youth. Such replication creates an environment that allows a social problem to survive and grow. Healthy development of a society is an aim for which any society agrees to comply with its own structures like government offices and their rules. These institutions must emphasise provision of adequately education to their young about solving the problems existing within a society. Schools are important social and cultural institutions and can play an important role in bring new awareness into a society, at least among its youth. We posit that if children are given quality education about a social issue, this may stop the vicious circle which continues generation after generation. Also, young brains of schoolchildren can more readily open to question a society's prevailing attitude about a social problem as compared to adults.

A sustainable world needs sustainable thinking. It is not infrequent that attempts to solve social problems through education are made by different agencies, for instance, through aid and/or programmes such as UNESCO Decade of Education for Sustainable Development. Though well-intentioned, such programmes may also have inherent thinking conflicts, for instance, 'development' from the western point of view may not always be 'sustainable'. Quite often, such educational programmes are rooted in underlying mistaken unsustainable and un-wholistic economic paradigms. Such foundations compromise scientific rigour and cultural understanding while keeping the false assumptions of unlimited growth intact. It is but obvious that such root-level conflicts would promote less effective, inauthentic and unrealistic learning among students and would effectively not solve much. Models like CASC draw on authentic social issues to help the child relate to the actual local setting and use the child's local language and local world view to promote better understanding about the problem. Local people knowingly or unknowingly happen to play a role in maintaining local problems, and this can be changed at local levels only.

Using ICTs brings efficiency to most processes and yet ICTs are not a miracle cure for educational problems. One-size-fits-all approach works out for many ICT products. Many educational aid based projects invite ICT experts from very different social, cultural and national backgrounds to a host country to contribute towards solving local problems. These experts may be experts in technical domains. However, ironically, many times such experts do not have a good understanding the local culture and/or the local worldviews. As a result, many of the ICT driven projects when seen from a point of relevance in local contexts may be based on unrealistic world view assumptions, cultural insensitivity and cultural imperialism. Such ICT driven projects stir doubts among many decision makers who have their fears and insecurities about costly ICT based projects, especially as returns on investment are unsure. We argue that ICTs can contribute towards locally contextualised, child-centric learning and there is a dire need to use technology in these ways. However, using ICT in a ruthless, centralised and efficiency-focused fashion may

not be the suitable way to promote understanding about social issues among school students. Combining ICTs with well understood pedagogical practices, along with having sensitive and dedicated teachers, can help an education system steer in the right direction.

Though CASC is supported by the ICTs, the costs for using CASC approach are not high. It may not be essential to buy new electronic gadgets because cameras and projectors can be used on a sharable basis between organisations or be arranged on a rental basis. The aim of CASC is not to promote technology-for-the-sake-of-technology, which is an opportunistic agenda being pushed by the market forces, but to use technology in meaningful ways to intervene in the learning process. CASC framework is largely open to considering any kind of social issue. Assisted by supporting technology, CASC pedagogy can make students more responsible in their behaviour towards social problems in their own community and aim for a better quality of life with in a community.

CASC is built on a knowledge base provided by local, impartial, working-level problem experts, needs local understanding in preparing CASC based intervention (in this way it is respectful to the local culture), uses local language as the medium of communication and keeps the whole process of learning about the social problem very real, grounded and close to the child's real world. CASC is build on top of learning which is a broader principle than formal education, which unfortunately is becoming more and more test oriented, and leaves little room for creative problem solving by students. The qualitative and quantitative results from the first CASC exploratory study in Tanzania show that CASC pedagogical approach promoted a better understanding about the environmental issues and enabled the students to come up with creative solution to real life problems.

As a framework, CASC may evolve as we conduct more experiments. However, most probably, the basic structure will remain along similar lines. We do not endorse the use of ICT to replace human teachers because an important function of school is the enculturation of the young. The CASC methodology is culturally inclusive and keeps the ideas very child centric. It gives a chance for students to make a small positive difference into a social problem by doing something about it, which is a potent seed for the young fertile minds. Better understanding and an initiative for changing the local problematic circumstances may help students become responsible local citizens which in turn helps us have responsible global citizens who can think clearly about the problem issues and believe in taking initiative to reverse the problematic patterns in their surroundings. Since understanding the local culture is an integral aspect of this approach, we believe that incorporating ethnography can be very useful in the process of creating CASC media artefacts. Finally, mass media plays an important role in today's globalised world. Media educates the masses without using the literal symbols, which have so far been considered the standards of literacy. People learn new behaviours and values from the media without deeply understanding the media messages. We are also investigating the role of media in creating and maintaining social problems. This investigation may result in some changes to the CASC model to incorporate a component of media literacy.

REFERENCES:

Chang, L., & Lee, G. (2010). A team-teaching model for practicing project-based learning in high school: Collaboration between computer and subject teachers. *Computers and Education, 55*(3), 961–969.

Choi, H. J., & Johnson, S. D. (2007). The effect of problem-based video instruction on learner satisfaction, comprehension and retention in college courses. *British Journal of Educational Technology, 38*(5), 885–895.

Chung, C., & Chow, S. (2004). Promoting student learning through a student-centred problem-based learning subject curriculum. *Innovations in Education and Teaching International, 41*(2), 157–168.

Day, B., & Greenwood, P. (2009). Information and Communication Technologies for rural development. In T. Unwin (Ed.), *ICT for Development* (pp. 206–248). Cambridge: Cambridge University Press.

Decade of Education for Sustainable Development (DESD). (2012). *Decade of education for sustainable development*. Retrieved March 7, 2013, from http://www.desd.org/

Design for Change. (2012). *Every child can!* Retrieved March 7, 2013, from http://www.dfcworld.com/

Design for Change. (2013). *Design for change curriculum.* Retrieved April 7, 2013, from http://www.designforchange.us/dfcusa/files/Design%20for%20Change%20USA%20-%20Curriculum.pdf

DfC Concept Note. (2013). Retrieved April 7, 2013, from http://www.dfcworld.com/dfc/images/INDIA/file/2012/DFC_Concept%20Note.pdf

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education.* New York: Macmillan.

Drenttel, W. (2010). *Design for change contest.* Retrieved March 7, 2013, from http://changeobserver.designobserver.com/feature/design-for-change-contest/13508/

Easterly, W. (2006). *The white man's burden: Why the West's efforts to aid the rest have done so much ill and so little good.* New York: Oxford University Press.

Fill, F., & Ottewill, R. (2006). Sink or swim: Taking advantage of developments in video streaming. *Innovations in Education and Teaching International, 43*(4), 397–408.

Freire, P. (2000). *Pedagogy of the oppressed.* New York: Continuum.

Gardner, H. (2006). *Changing minds: The art and science of changing our own and other people's minds.* Boston: Harvard Business School Publishing.

Gibson, I., O'Reilly, C., & Hughes, M. (2002). Integration of ICT within a project-based learning environment. *European Journal of Engineering Education, 27*(1), 21–30.

Gyekye, K. (1997). Philosophy, culture, and technology in the postcolonial. In E. C. Eze (Ed.), *Postcolonial African philosophy: A critical reader* (pp. 25–44). Cambridge: Blackwell Publishers.

Heckman, J. (2008). Schools, skills, and synapses. *Economic Inquiry, 46*(3), 289–324.

Hogue, A., Kapralos, B., & Desjardins, F. (2011). The role of project based learning in IT: A case study in a game development and entrepreneurship program. *Interactive Technology and Smart Education, 8*(2), 120–134.

Hung, W. (2006). The 3C3R model: A conceptual framework for designing problems in PBL. *Interdisciplinary Journal of Problem Based Learning, 1*(1), 55–77.

Kihoza, P. (2011). *Using ICT based media to promote problem-based learning for sustainable environmental conservation education: A case study of four Morogoro Region Secondary Schools in Tanzania.* Unpublished Master's thesis, University of Eastern Finland, Savonlinna, Finland.

Kihoza, P., Roy, A., Suhonen, J., Tukiainen, M., & Vesisenaho, M. (2012). *Promoting transformative education for sustainable development: The study of ICT enhanced problem based learning in a developing country.* Manuscript submitted for publication.

Kozma, R. (2005). National policies that connect ICT-based education reform to economic and social development. *Human Technology, 1,* 117–156.

Krishnamurti, J. (2002). *Why are you being educated? : Talks at Indian Universities.* Chennai: Krishnamurti Foundation Trust, Ltd.

Lam, S., Cheng, R., & Choy, H. (2010). School support and teacher motivation to implement project-based learning. *Learning and Instruction, 20*(6), 487–497.

Mitra, B., Lewin-Jones, J., Barrett, H., & Williamson, S. (2010). The use of video to enable deep learning. *Research in Post-Compulsory Education, 15*(4), 405–414.

Olson, J., Codde, J., deMaagd, K., Tarkelson, E., Sinclair J., Yook, S., & Egidio, R. (2011). *An analysis of e-Learning impacts & best practices in developing countries – with reference to secondary school education in Tanzania.* Michigan State University, College of Communication Arts & Sciences. Retrieved March 7, 2013, from http://tc.msu.edu/sites/default/files/pdf/E-Learning-White%20 Paper_oct-2011.pdf

Pulkkinen, J. (2007). Cultural globalization and integration of ICT education. In K. Kumpulainen (Ed.), *Educational technology: Opportunities and challenges* (pp. 13–23). Oulu: Oulu University Press.

Resta, P., & Leferrier, T. (2007). Technology in support of collaborative learning. *Educational Psychology Review, 19*(1), 65–83.

Scardamalia, M., & Bereiter, C. (2006). Knowledge building: Theory, pedagogy, and technology. In K. Sawyer (Ed.), *Cambridge handbook of the learning sciences* (pp. 97–118). New York: Cambridge University Press.

Selinger, M. (2009). ICT in education: Catalyst for development. In T. Unwin (Ed.), *ICT for Development* (pp. 206–248). Cambridge: Cambridge University Press.

Sterling, S. (2011). *Sustainable education: Re-visioning learning and change.* Devon: Schumacher Briefings, Green Books, Ltd.

Sutinen, E., & Vesisenaho, M. (2006). Ethnocomputing in Tanzania: Design and analysis of a contextualized ICT course. Re*search and Practice in Technology Enhanced Learning, 1*(3), 239–267.

Tedre, M., Apiola, M., & Cronje, J. C. (2011). Towards a systemic view of educational technology in developing regions. In *Proceedings of IEEE Africon 2011 Conference at Livingstone, Zambia*, September 13–15 2011 (pp. 1–8). Published by IEEE.

Tooley, J. (2009). *The beautiful tree: A personal journey into how the world's poorest people are education themselves.* New Delhi: Penguin; Washington, DC: Cato Institute.

UNESCO (United Nations Educational, Scientific and Cultural Organisation). (2012). *Why language matters for the Millenium Development Goals.* Retrieved March 7, 2013, from http://unesdoc. unesco.org/images/0021/002152/215296E.pdf

Vesisenaho, M. (2009). *Developing contextualized ICT education. Case Tumaini University, Tanzania.* Köln: Lap Lambert Academic Publishing.

Factors predicting e-inclusion in a blended learning course delivery context

Ieva Vītoliņa and Atis Kapenieks

Riga Technical University, Latvia

ABSTRACT

The authors' purpose was to measure the extent to which the blended e-learning course "Improvement of ICT skills" that the authors' taught could increase the level of e-inclusion and predict learning carryover after the course was complete. The course was divided into clearly identified subtopics that were later used to analyse the extent to which carry-over had been realised. We applied a practical use probability model to perform the analysis that identified the following factors: the degree to which the instructor was willing and able to share knowledge; the degree to which the students were interested and had the capacity to learn; and the degree to which the sponsoring organisation supported and promoted learning. The study was based on evaluating a group of five hundred vocational teachers who were the learners. We found it practical to limit our study to the factors of the instructor's willingness to share, the quality of the learning materials and the usability of the e-learning environment. Our results indicated that the quality of e-learning materials and the e-learning environment were significant factors that predicted learning carry-over and promoted e-inclusion; whereas, the instructor's role as knowledge sharer was statistically insignificant.

Key words: e-inclusion, e-learning, digital skills, digital skills gap, usage gap

INTRODUCTION

This study aims to address the e-inclusion problem that was outlined in the EU Declaration of 2006 that relates to the inclusion of as many individuals as possible to enjoy the benefits of information and communication technology (ICT) (European Commission, 2006). This study refers to the delay that the e-inclusion process has encountered. The progress report of the EU Digital Agenda states that there still exists a sharp divide in digital use and competence in Europe that may be identified between nations as well as along socio-economic lines although improvements are being made (European Commission, 2011). Lack of digital skills and advanced usage of digital skills are a particularly important issue in a number of countries. There is a gap between knowing to do and practical usage of digital skills. Learning a new skill and using it are two separate steps (Lerchner, Camera, & Richmond, 2007). According to Eurostat, 28% of individuals in the EU have no Internet skills; only 56% of individuals use the Internet for finding information about goods and services, 40% of individuals use the Internet for reading/downloading online newspapers/news magazines, 5% of individuals use the Internet for doing an online course (European Commission, 2012). Lack of digital skills is also an obstacle in the learning process of new digital skills involving technologies. In the ideal state the number of actual users of a certain technology or service converges towards the number of all its potential users (Becker, Niehaves, Bergener, & Räckers, 2008).

Previous research of e-inclusion focused on providing access to ICT (Selwyn, 2004; Rapaport, 2009). Deursen and Dijk (2009) evaluated citizens' skills to use e-services and have concluded that not all citizens with access to Internet have the skills to use e-services. Nowadays the digital divide goes beyond the issue of access to technology. Focus has shifted from access to ICT to digital skills and the meaningful use of ICT (Hargittai, 2000; McLean, 2006; Zhao, & Elesh, 2006). The 2010 OECD report stated that a second digital divide separates those with the competencies and skills that benefit from computer use from those without these advantages (OECD [Organisation for Economic Cooperation and Development], 2010).

The second digital divide is an issue for different population groups, also for teachers (Uzunboylu & Tuncay, 2010; European Economic and Social Committee, 2011; Reinhart, Thomas, & Toriskie, 2011). Cort, Härkönen and Volmari (2004) pointed in their report that vocational teachers are increasingly expected to use ICT as a teaching and administration tool. Eshet (2007) noted that digital literacy has become a 'survival skill' for teachers. United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2005) guided to use ICT in teacher education to address sustainability while Abrantes, Seabra and Lages (2007) pointed that teachers have low self-confidence in using technology for teaching. Cort et al. (2004) explored the best ways to provide teachers with the technical skills they need to take advantage of ICT opportunities.

This study addresses the issues of the second digital divide. There is little research to determine how to prevent the second digital divide (Deursen & Dijk, 2010). This study contributes to research of the factors influencing meaningful ICT use in blended learning context.

KNOWING/DOING GAP

We used the theory of knowledge management to conceptualise e-inclusion process in the context of the meaningful use of digital skills. Knowledge management theory uses terms 'knowing' and 'doing' to address issue of turning knowledge about something into action consistent with that knowledge (Pfeffer & Sutton, 1999). In the context of our study, 'knowing' means digital skills or ability to apply knowledge to complete tasks related to ICT; while 'doing' means the meaningful use of digital skills for business or private needs. Doing or meaningful ICT use indicates that the person is e-included.

Knowing-doing gap is analysed in many fields; for instance, industrial management (Wortman, 2005), clinical medicine (Cochrane, Olson, Murray, Dupuis, Tooman, & Hayes, 2007), biology (Knight, Cowling, Rouget, Balmford, Lombard, & Campbell, 2008), chemical engineering (Steeneveldt, Berger, & Torp, 2006). Minimal research attention has been directed towards overcoming the knowing-doing gap in the area of e-inclusion. According to Nissen (2006), knowing-doing gap can stem from problems with knowledge flows.

KNOWLEDGE FLOWS AND THE E-INCLUSION MODEL

A knowledge flow has three crucial attributes: direction (sender and receiver), carrier (medium) and content (shareable) (Zhuge, 2004). In the context of the e-inclusion process, the knowledge sender is the instructor or the expert of digital skills; the receiver is the student whose digital skills are improved by this means.

Development of ICT has enhanced the importance of technology within the learning process. Nowadays traditional forms of teaching and learning are often substituted by e-learning to achieve better learning outcomes (Rosenberg, 2007; Mason, & Rennie, 2008). The carrier can be the e-learning environment and the Internet. Oye, Salleh and Iahad (2011) emphasise the role of e-learning environments in knowledge transfer; e-learning environment not only helps students to make sense of content, it also enables on-going communication between students and instructors.

Nissen (2006) stated that for knowledge to flow to occur at the individual level, the instructor or expert must be willing and able to share; the student must be willing and able to learn; and the organisation must be willing and able to help them do so.

We proposed a model to analyse the probability of practical use for the skills learned in a blended e-learning course by identifying the following factors:

(F1) the degree to which instructor was willing and able to share knowledge;

(F2) the degree to which the students were willing to learn; and the learning capacity of the students;

(F3) the degree to which the organisation supported learning development; the degree to which the organisation promoted learning.

Factor 1: Instructor's willingness and ability to share knowledge
The instructor's willingness to share knowledge is understood in this paper as support given to students to facilitate learners' needs.

We limited our research to the blended e-learning process. If students use an e-learning environment, the role of instructor in sharing knowledge changes accordingly.

Students learn not only in classroom seminars but also anywhere an Internet connection is available. Knowledge acquisition depends upon the quality of the content, i.e. learning materials, and the usability of the e-learning environment for convenient use of content and communication with the instructor. In our model we proposed that knowledge flow is related to the quality of learning course materials and the usability of e-learning environment.

Factor 2: Student's willingness and ability to learn

There are no fully understood research methods for measuring a student's willingness to learn. We proposed that the willingness to learn is expressed by a student's show of interest. Interests have been identified as an important motivational construct that influences achievement in learning (Abrantes et al., 2007; Subramaniam, 2009). According to Dewey (1913) learning outcomes depend on a student's interests. In our model we determined student willingness to learn digital skills by four types of interests: social, intellectual, professional and private.

We described students' ability to learn as the students' previous experience, which was reflected by their knowledge level. A student's previous experience plays an important role in the model. In constructionist theory, each student constructs new knowledge from his or her experiences (Powell & Kalina, 2009; Vedins, 2011). During the learning process the knowledge level of the student can increase. We proposed that an increase in the students' knowledge level (in terms of percentage) as a result of the course indicated the students' ability to learn.

Factor 3: Organisational support and promotion of learning development

As indicated above, we limited our study to the teaching and learning of an e-course. We expected that the interested organisation had secured an e-learning environment that was equally accessible to all interested students; that the organisation was impartial and actively supported all students without bias; and that all students had an equal opportunity to complete the e-learning course for digital skills improvement.

SCOPE OF THE STUDY AND THE RESEARCH QUESTIONS ADDRESSED

We limited the present study to addressing Factor 1. We felt it was the most significant factor because we were interested in predicting vocational teachers' continued usage of digital skills learned in the e-course after its completion. Our purpose was to use the instructor's willingness, quality level of learning materials and usability of e-learning environment to predict practical use of digital skills for vocational teachers after completing the blended learning course "Improvement of ICT skills".

For this purpose, we identified the following variables as the most relevant: the instructor's willingness to share knowledge; usability of the e-learning environment; quality of e-learning materials. Next we calculated correlations between these three variables and the probability of practical use to determine their effectiveness.

We felt the following research questions would give us the clearest indicators for this outcome:

1. Does the instructor's willingness to share knowledge predict practical use of digital skills for vocational teachers?
2. Does the quality of e-learning materials predict practical use of digital skills for vocational teachers?
3. Does satisfaction with the e-learning environment predict practical use of digital skills for vocational teachers?

METHOD

Participants

The participants included 500 students. They were teachers of vocational schools in Latvia. The sample covered 80% of students in the blended e-learning course "Improvement of ICT skills".

Based on vocational teachers' inquiry the blended e-learning course contained most important topics for teachers to develop digital competence (Ala-Mutka, 2011). The topics of the course related to the improvement of instrumental knowledge and skills for tool and media usage, advanced skills and knowledge for communications, information management, and continued learning and meaningful participation in a knowledge society. We analysed ten topics: "Setup of peripherals", "Image scanning", "Web page design", "PDF files", "Computer security", "MS Access", "Video processing", "E-learning materials", "Social networks", and "E-mail". Each topic included theoretical material in video and text format and tests for knowledge assessment. In addition, we assigned practical exercise to apply the knowledge gained (Roskelly, 2005).

Measures

We designed three types of questionnaires to assess different aspects of the practical use of digital skills. These questionnaires were piloted at the end of 2010 in a group of 12 vocational teachers and following an analysis of the results a final version of the questionnaire was developed.

(I) The students completed the first questionnaire prior to entering the course. This questionnaire contained 10 items used in our study: 8 questions using a Likert-type scale (ranged from 1 – strongly disagree to 5 – strongly agree); 2 multiple-choice questions. The questionnaire collects information about age and gender, and students' interests to participate in an e-learning course for digital skills improvement.

(II) The next ten questionnaires were given at the end of each topic. They also contained Likert-type questions (ranged from 1 – strongly disagree to 5 – strongly agree). Five items to assess e-learning materials related to the topic were used in the present study.

(III) The last questionnaire was administered at the end of the course. We used 14 Likert-type questions on a scale from 1 – strongly disagree to 5 – strongly agree. Ten questions related to prediction about the usage of digital skills for private or business needs. Three questions assessed the e-learning environment, and the last question evaluated instructor willingness to share knowledge.

Additionally, we designed a telephone survey to obtain data about the practical usage of digital skills after completing the e-learning course. It contained 10 items. There was one closed question for each course topic. For each topic the students were classed in the following categories:

(a) Those that did not practically use the digital skills after completing the course. For instance, if the student did not use social networks after the e-learning course, the respondent indicated on the survey that he or she did not use the course topic Social networks.

(b) Those that used digital skills after completing the course but did not practically use the skills learned during the course. For instance, a student had skills before learning Social network topics such as how to create a Twitter account and how to use Twitter. During the course the student learned how to create a Facebook account and how to use Facebook. If we observed that the student used Twitter but not Facebook (newly acquired skills) after the course, then the student indicated on the survey that he or she did not use newly acquired skills for this topic.

(c) Those that used newly acquired digital skills after completing the course. For instance, a student acquired Facebook skills in the course, but had not used this social medium before. After completing the course student used Facebook. Then the respondent indicated on the survey that he or she used newly acquired skills.

The telephone survey was piloted similarly as questionnaires at the end of 2010 in the same group of 12 vocational teachers and a final version was developed.

Predictor. The predictor was instructor's willingness and ability to share knowledge during e-learning course for the improvement of digital skills. This was measured by three independent variables: (I) students' evaluation of instructor support in classroom seminars and in the e-learning environment; (II) student's evaluation of e-learning materials in the course; (III) student's evaluation of e-learning environment.

Criterion Variables. Probability of practical use was the criterion. It was determined by three variables: (I) students' prediction of the practical use of digital skills (by means of questionnaire), (II) observed use of digital skills (by means of telephone surveys) and (III) combination of predicted and observed use. As we observed students no longer than twelve weeks after they completed the course, we determined that practical use of digital skills could be explained by taking into consideration the observed use as well as the predicted use.

Procedure

Data collection. We collected the data from the students by means of questionnaires administered from January to April 2012. The questionnaires were administered in the course and could be accessed through Moodle. Moreover, we conducted surveys by phone from March to May 2012 to determine to what extent practical usage of learned digital skills was applied four to twelve weeks after the course. The number of respondents for each topic differed because the completion of questionnaires was voluntary. It varied from 57 to 86 (see Table 1).

Data analysis. We employed correlation calculations with the SPSS for Windows (version 15.0) for analysis.

RESULTS

The primary question in the study focused on students' satisfaction with instructor's support, e-learning materials and environment as factors for predicting the possibility of practical usage of learned digital skills for vocational teachers.

Means and standard deviations of predictor and criterion variables

Table 1 illustrates descriptive statistics of predictor measures. It presents means (M) and standard deviations (SD) of three predictor variables: (I) students' evaluation of instructor's support in classroom seminars and in the e-learning environment (IWS); (II) student's evaluation of e-learning materials of the course (eLM); (III) student's evaluation of e-learning environment (eLE). Predictor variables were measured on a Likert-type scale (ranged from 1 – very strongly disagree to 5 – very strongly agree) for each topic.

Table 1. Means and standard deviations of predictor variables.

Topic	Number of respondents	IWS		eLM		eLE	
		M	SD	M	SD	M	SD
Setup of peripherals	86	4.58	0.89	3.99	0.92	3.66	0.90
Image scanning	74	4.57	0.85	3.92	0.72	3.60	0.92
E-mail	73	4.60	0.83	4.14	0.92	3.71	0.91
Video processing	73	4.63	0.79	4.06	0.86	3.72	0.89
PDF files	71	4.59	0.79	4.08	0.87	3.67	0.94
Social networks	71	4.58	0.91	4.02	0.94	3.65	0.95
E-learning materials	70	4.63	0.80	3.99	0.98	3.70	0.93
Computer security	66	4.58	0.92	3.75	0.70	3.72	0.89
MS Access	65	4.60	0.84	3.85	0.97	3.60	0.93
Web page design	62	4.66	0.79	3.87	0.95	3.68	0.95

Means for students' evaluation of instructor's support in classroom seminars and in the e-learning environment ranged from 4.57 to 4.66. Means represent that students evaluate their instructor's performance very high and the evaluation is very similar for all topic (difference between the highest and the lowest value is 0.09).

Means for student's evaluation of e-learning materials in the course range from 3.75 to 4.14. The topic "Computer security" has the lowest score while the topic "E-mail" – the highest. The difference between the highest and the lowest value is quite small – 0.35. The means scores show that vocational teachers assessed fairly highly the e-learning materials of the course "Improvement of ICT skills". However, compared with the evaluations of instructor's support, the e-learning material assessment is lower.

The third mean score is for student's evaluation of e-learning environment. This score ranges from 3.60 to 3.72. The topics "Computer security" and "Video processing" have the highest scores whereas the topics "Image scanning" and "MS Access" – the lowest. The difference between the highest and the lowest value is small – 0.12. Moodle e-learning environment of the course "Improvement of ICT skills" is evaluated as average. Of the three predictor variables the lowest evaluation is given to the e-learning environment.

Means of criterion variables

Figure 1 presents comparisons of predicted and observed usage means on a five-point scale. The dark line is students' self-prediction about practical usage of learned skills. The actual score of predicted usage ranged from 3.3 to 4.4. The topic "Web page design" scored the lowest in predicted usage while "E-mail" topics scored the highest. The average score of predicted usage is quit high. It means that after completing blended learning course "Improvement of ICT skills" vocational teachers are interested in the practical use of the learned skills for personal or professional purposes.

The second line in Figure 1 shows average score for the observed use of learned skills. The actual score of observed use was less than that of predicted use – from 1.8 to 3.4. Such topics as "Web page design" and "MS Access" have lowest scores for observed usage. It is possible that these topics are more complicated for students and not required in their private life or business.
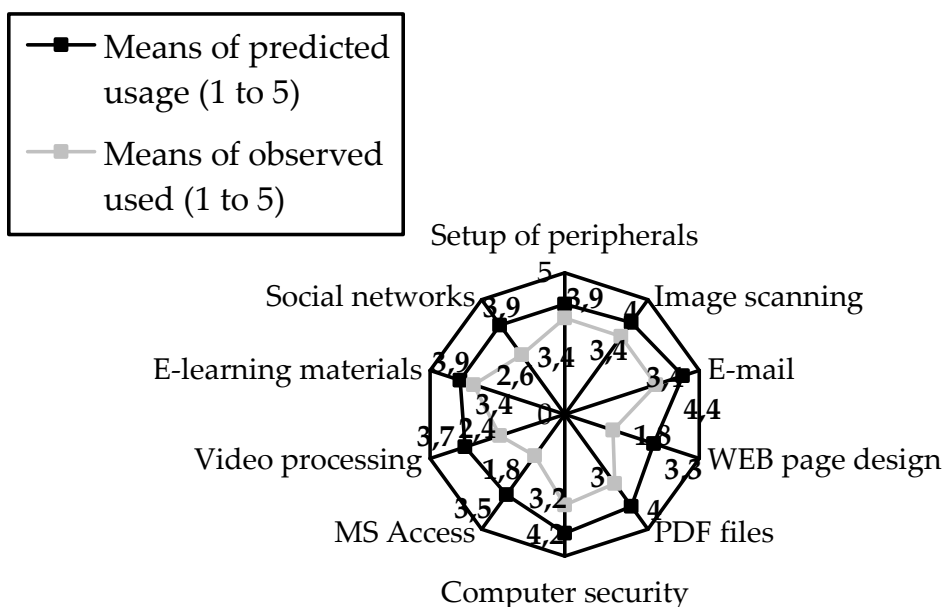
Figure 1. Means of predicted and observed use

RQ1: Does instructor's willingness to share knowledge predict practical usage of digital skills for vocational teachers?

To answer RQ1, we analysed the correlation between the student's evaluation of instructor's support in classroom seminars and in the e-learning environment, and the probability of practical usage.

Column 2 and 3 of Table 2 present a correlation between the student's evaluation of instructor's support and criterion variables: predicted use and combination of predicted and observed use of digital skills. Instructor's willingness to share knowledge has no significant correlations or has weak correlations with all criterion variables for most of the topics.

Table 2. Correlation between predictor variables and probability of practical use.

Topic 1	IWS		eLM		eLE	
	PU 2	PU&OU 3	PU 4	PU&OU 5	PU 6	PU&OU 7
Setup of peripherals	.38**	.36**	.56**	.54**	.64**	.56**
Image scanning	.34**	.22	.37**	.39**	.53**	.48**
E-mail	.41**	.38**	.60**	.59**	.63**	.60**
Video processing	.33**	.18	.38**	.32**	.40**	.41**
PDF files	.31**	.26*	.47**	.41**	.49**	.45**
Social networks	.09	.13	.54**	.58**	.34**	.35**
E-learning materials	.32**	.31**	.59**	.60**	.38**	.38**
Computer security	.18	.29*	.48**	.43**	.35**	.29*
MS Access	.28*	.22	.49**	.45**	.54**	.49**
Web page design	.24	.21	.44**	.29*	.36**	.26*

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
PU – Predicted usage; OU – Observed usage; IWS – Instructor's willingness to share knowledge; eLM – e-Learning materials; eLE – e-Learning environment

In this study it was found that for vocational teachers the instructor's willingness to share knowledge is not an important predictor of the practical use of digital skills (Figure 2).

RQ2: Does satisfaction of e-learning materials predict practical usage of digital skills for vocational teachers?

Further we calculated the correlation between evaluation of e-learning materials and possibility of practical usage to answer RQ2.

Column 4 and 5 of Table 2 suggest that for all topics predicted usage and combination of predicted and observed usage had statistically significant correlations. The topics have medium correlation in range from .37(**) to .60(**) for predicted usage. The highest correlations are identified in the topic "E-mail".

Most topics have medium strength correlations in range from .29(*) to .60(**) for combination of predicted and observed usage. The highest correlation is for the topic "E-learning materials".

We observed that the strength of correlation for predicted usage is higher than for combination of predicted and observed usage for most topics.

Statistical calculations indicated that evaluation of e-learning materials is a predictor for practical usage of digital skills in our study of vocational teachers (Figure 2).

RQ3: Does satisfaction with e-learning environment predict practical usage of digital skills for vocational teachers?

To answer RQ3, we analysed the correlation between the students' evaluation of e-learning environment and their practical usage of the learned digital skills.

Column 6 and 7 of Table 2 demonstrate that the correlation between the evaluation of the e-learning environment and predicted usage, and the combination of predicted and observed usages are statistically significant. Our observation showed that correlations are medium for most of the topics and range from .29(*) to .64(**). The topic "Peripheral setup" had the highest coefficient .64(**).

It was found that vocational teachers' evaluation of e-learning environment was a predictor for practical usage of digital skills (Figure 2).

Instructor's willingness to share knowledge

E-learning materials

Does not

Predicts

Predicted usage (PU)
Predicted and observed usage

Predict

E-learning environment
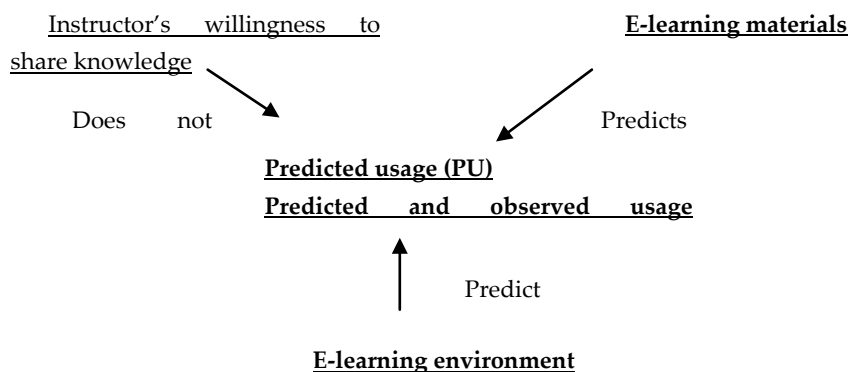
Figure 2. Predictors for possibility of practical use

We observed that the correlations for various topics differ. Topics with higher correlations, such as "Setup of peripheral", "E-mail", "E-learning materials", are more useful for predictions.

DISCUSSION

The purpose of the study was to investigate whether the instructor's support, e-learning materials and the e-environment have an impact on the practical use of newly learned digital skills for vocational teachers.

First, we observed that the degree of student satisfaction with e-learning materials predicts the use of newly acquired digital skills. It means the higher degree of satisfaction with e-learning materials among vocational teachers, the greater the likelihood that these materials will be applied after the course is finished. Second, our evidence indicates that vocational teachers' degree of satisfaction with the e-learning environment has a significant impact on the use of the newly acquired digital skills. Third, and somewhat surprisingly, we found that the instructor's support did not affect the practical use of the newly acquired skills.

Our findings contribute to the current understanding of Nissen's knowledge management theory of knowledge flows as demonstrated by our blended e-learning course for digital skills improvement. Our results match the finding of learning effectiveness studies that claim: if learners felt better about the quality of received training (learning materials, environment), they acquire more knowledge and apply learned skills to their professional and practical lives (Sulčič & Lesjak, 2009; Yun-Tsan, Shui-Chuan, & Hsiang-Ta, 2011). Moreover, our findings correspond to the findings of 'transfer of training' researchers and demonstrate that learners' satisfaction is significantly related to the

level of training transfer (Faerman & Ban, 1993). Our findings present factors connecting classroom training to business and address the need for education to promote sustainable economic development (Second Nature, 2012).

The unexpected result was that the instructor's willingness to share knowledge was not an important indicator of the practical use of digital skills. This result came about because almost all vocational teachers gave a positive evaluation of the instructor's willingness to share knowledge regardless of the learning outcome for each individual. The reason for the high score for instructor's evaluation could be explained by the well established procedure of instructor's selection for blended learning course "Improvement of ICT skills". A possible reason why the instructor was rated so highly may be that she was selected through a highly competitive process. Moreover, it is possible that the role of the instructor is insignificant because this e-learning course has well designed e-learning materials available in video format.

Since ICT continuously evolves, acquisition of new digital skills is a continuous process. Sustainability of the acquisition of new skills is an important factor for e-inclusion. The results indicated the importance of the way in which ICT is provided to learners. ICT usage alone does not indicate successful e-learning acquisition or educational sustainability (Purg, 2006, 2011). In our study significant factors emerged such as quality of e-learning materials and a usable e-learning environment. These have an impact on a learner's e-inclusion and sustainable ICT usage in the future.

A few methodological limitations should be noted. The sample used in the current study included only vocational teachers and the sample size for specific course topics was relatively small. Further study with larger samples is needed to examine the validity of the current findings.

Our observations of real-life situations suggest that the score for observed usage was lower than the score for predicted usage for all topics. A possible reason for this outcome may be that the evaluation was administrated too soon after the course was finished. To obtain more comprehensive and realistic data about the practical use of learned digital skills, it is necessary to prolong the period of vocational teachers' observation from three to six months after completion of training (Kirkpatrick, 1959).

CONCLUSION

Our results identified factors that promote e-inclusion. We concluded that the quality of e-learning materials and the e-learning environment are important factors that facilitate e-inclusion of vocational teachers. Moreover, appropriate use of ICT is a precondition for a sustainable future. The results confirmed the importance of designing quality e-learning materials and a virtual environment to reach a high number of e-excluded individuals. The implications of this study should encourage organisations and enterprises that are responsible for e-course design to take account of these factors.

Furthermore, the results indicate the need to further study possibility of practical use. This study analysed only one factor mentioned in the e-inclusion model which is based on the knowledge management theory of Nissen. Further research is required to analyse others factors of the e-inclusion model. According to the prevailing educational paradigm,

learning/teaching is more student-centred than instructor-centred. Further research is planned to evaluate the significance of student's interest and capacity as factors in continued use of newly acquired skills after the e-learning course is finished. Calculations of multiple regressions are recommended that can study the relationship between several instructor and student variables to design a model of practical usage probability.

Our study identified several factors for predicting future use of acquired ICT skills after the e-course is finished. The continued use of acquired skills enables individuals to become more active e-included participants both professionally and socially and furthers the goal of the EU e-inclusion policy. The study particularly addressed the issues concerned with the second digital divide in assisting vocational teachers to meet the challenges of the digital technology requirements of their professions. Moreover, we identified a model of practical usage probability as well as other factors that can be applied to future research.

ACKNOWLEDGEMENT

REFERENCES:

Abrantes, J., Seabra, C., & Lages, L. (2007). Pedagogical affect, student interest, and learning performance. *Journal of Business Research, 60*(9), 960–964. DOI:10.1016/j.jbusres.2006.10.026.

Ala-Mutka, K. (2011). *Mapping digital competence: Towards a conceptual understanding*. Retrieved March 15, 2012, from ftp.jrc.es/EURdoc/JRC67075_TN.pdf

Becker, J., Niehaves, B., Bergener B., & Räckers, M. (2008). Digital divide in eGovernment: The eInclusion gap model. *EGOV 2008, LNCS 5184*, 231–242.

Cochrane, L. J., Olson, C. A., Murray, S., Dupuis, M., Tooman, T., & Hayes, S. (2007). Gaps between knowing and doing: Understanding and assessing the barriers to optimal health care. *Journal of Continuing Education in the Health Professions, 27*(2), 94–102. DOI:10.1002/chp.106.

Cort, P., Härkönen, A., & Volmari, K. (2004). *PROFF – Professionalisation of VET teachers for the future*. Luxembourg: Office for Official Publications of the European Communities.

Dewey, J. (1913). *Interest and effort in education*. Retrieved March 15, 2012, from http://openlibrary.org/books/OL7141097M/Interest_and_effort_in_education

Eshet, Y. (2007). Teaching online: Survival skills for the effective teacher. *ACM SIGCSE Bulletin, 39*(2), 16–18.

European Commission. (2006). *Ministerial declaration on e-inclusion*. Retrieved January 10, 2012, from http://ec.europa.eu/information_society/events/ict_riga_2006/doc/declaration_riga.pdf

European Commission. (2011). *Digital agenda scoreboard 2011*. Retrieved March 15, 2012, from http://ec.europa.eu/information_society/digital-agenda/scoreboard/library/index_en.htm

European Commission. (2012). *Eurostat*. Retrieved March 15, 2012, from http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

European Economic and Social Committee. (2011). *TEN/453 Enhancing digital literacy, e-skills and e-inclusion*. Retrieved March 10, 2012, from https://toad.eesc.europa.eu

Faerman, S., & Ban, C. (1993). Trainees satisfaction and training impact: Issues in training evaluation. *Public Productivity Management Review, 16*, 299–314.

Deursen, A. J. A. M. V., & Dijk, J. A. G. M. V. (2009). Improving digital skills for the use of online public information and services. *Government Information Quarterly, 26*, 333–340.

Deursen, A. J. A. M. V., & Dijk, J. A. G. M. V. (2010). Internet skills and digital divide. *New media & Society, 13*(6), 893–911.

Hargittai, E. (2000). *Second-level digital divide: Differences in people's online*. Retrieved January 18, 2012, from Skillsschnm.gmu.edu/digitalhistory/links/pdf/introduction/0.26c.pdf

Knight, A. T., Cowling, R. M., Rouget, M., Balmford, A., Lombard, A. T., & Campbell, B. M. (2008). Knowing but not doing: Selecting priority conservation areas and the research-implementation gap. *Conservation Biology, 22*(3), 610–617.

Lerchner, A., Camera, G. L., & Richmond, B. (2007). *Knowing without doing. Nature Neuroscience, 10*(1), 15–17. Retrieved March 20, 2012, from http://ebookbrowse.com/2007-lerchner-etal-knowing-without-doing-pdf-d78454237

Kirkpatrick, D. L. (1959). Techniques for evaluating training programs. *Journal of American Society of Training Directors, 13*(3), 21–26.

Mason, R., & Rennie, F. (2008). *e-Learning and social networking handbook: Resources for higher education*. Madison Ave, NY: Routledge.

McLean, R. (2006). A tale of two e-citizens: A consideration of engagement in the e-society in two contexts. In J. Ljungberg & M. Andersson (Eds.), *Proceedings of the 14th European Conference on Information Systems*, 12–14 May 2006 (pp. 2013–2016). ECIS: Goteborg.

Nissen, M. E. (2006). *Harnessing knowledge dynamics: Principled organizational knowing & learning*. London: IRM Press.

OECD (Organisation for Economic Cooperation and Development). (2010). *Are the new millennium learners making the grade*? Retrieved March 23, 2012, from http://www.oecd.org/dataoecd/6/56/45000441.pdf

Oye, N. D., Salleh, M. M., & Iahad, N. A. (2011). E-Learning barriers and solutions to knowledge management and transfer. *Information Management & Business Review, 3*(6), 366–372.

Pfeffer, J., & Sutton R. I. (1999). Knowing "what" to do is not enough: Turning knowledge into action. *California Management Review, 42*(1), 83–108.

Purg, P. (2006). An ecological approach to multimedia in teaching and training. In *Proceedings of Management International Conference Advancing Business and Management in Knowledge-Based Society*, 23–25 November 2006 (pp. 1509–1514). Portoroţ, Slovenia: Faculty of Management.

Purg, P. (2011). Open versus closed forms of knowledge assessment in a blended learning ecosystem. *Journal of Teacher Education for Sustainability, 13*(1), 19–28. DOI: 10.2478/v10099-011-0002-4.

Powell, K. C., & Kalina, C. J. (2009). Cognitive and social constructivism: Developing tools for an effective classroom. *Education, 130*(2), 241–250.

Rapaport, R. (2009). *The new literacy: Scenes from the digital divide 2.0*. Retrieved February 18, 2012, from http://www.edutopia.org/digital-generation-divide-literacy

Reinhart, J. M., Thomas, E., & Toriskie, J. M. (2011). K-12 teachers: Technology use and the second level digital divide. *Journal of Instructional Psychology, 38*(3/4), 181–193.

Rosenberg, M. (2007). *The eLearning guild's handbook of e-learning strategy*. Retrieved March 20, 2012, from http://www.elearningguild.com/content.cfm?selection=doc.817

Roskelly, H. (2005). Still bridges to build: English education's pragmatics agenda. *English Education, 37*(4), 288–295.

Second Nature. (2012). *Education for sustainability*. Retrieved January 15, 2012, from http://www.sec-ondnature.org/

Selwyn, N. (2004). Reconsidering political and popular understandings of the digital divide. *New Media & Society, 6*(3), 341–362.

Sulčič, V., & Lesjak, D. (2009). E-learning and study effectiveness. *Journal of Computer Information Systems, 49*(3), 40–47.

Steeneveldt, R., Berger, B., & Torp, T. A. (2006). CO2 capture and storage: Closing the knowing-doing gap. *Chemical Engineering Research and Design, 84*(9), 739–763.

Subramaniam, P. R. (2009). Motivational effects of interest on student engagement and learning in physical education: A review. *International Journal of Physical Education, 46*(2), 11–19.

UNESCO (United Nations Educational, Scientific and Cultural Organisation). (2005). *Guidelines and recommendations for reorienting teacher education to address sustainability*. Retrieved January 18, 2012, from http://unesdoc.unesco.org/images/0014/001433/143370E.pdf

Uzunboylu, H., & Tuncay, N. (2010). Divergence of digital world of teachers. Journal of *Educational Technology & Society, 13*(1), 186–194.

Vedins, I. (2011). *Mācīšanas māksla* [The art of learning]. Rīga: Avots.

Wortman, B. (2005). Value-changing behaviour: Getting the habit. *Journal of Business Strategy, 26*(4), 38–45. DOI: 10.1108/02756660510608549.

Yun-Tsan, L., Shui-Chuan, C., & Hsiang-Ta, C. (2011). The effect of organizational commitment on employee reactions to educational training: An evaluation using the Kirkpatrick four-level model. *International Journal of Management, 28*(3), 926–938.

Zhao, S., & Elesh, D. (2006). *The second digital divide: Unequal access to social capital in the online world*. Retrieved March 15, 2012, from http://www.allacademic.com/meta/p96480_index.html

Zhuge, H. (2004). *The knowledge grid*. Singapore: World Scientific Publishing Co.

Adult education for sustainable development

Graduates' approach to acquisition of necessary competencies required in pedagogical work during university requalification studies

Rima Bakutytė and Lidija Ušeckienė

Siauliai University, Lithuania

ABSTRACT

The objective of the research is to disclose the availability and sources of graduates' acquired pedagogical competencies. The applied research methods are analysis of documents and scientific literature, questionnaire for graduates, statistical analysis of data. The sample is constituted of 81 graduates. Factor analysis permitted to categorise the indicators of teachers' competencies into notional blocks: pedagogical knowledge, communicative skills, ability to find and solve a problem, ability to find and use necessary information, human values and general competencies. The research data on the topic disclosed that the majority of graduates emphasised the study subjects they studied are suitable for teacher's job. Further analysis revealed the graduates' main emphasis in retraining studies on the pedagogical knowledge, problem finding and solving, ability to find and use information. The graduates slightly less underscore the development of communicative skills as well communicative skills, human values and general competencies in retraining studies.

Key words: retraining studies, pedagogical competencies, university level studies, adult education

INTRODUCTION

As indicated in the *Johannesburg Plan of Implementation of Sustainable Development* (*UN Department of Economic and social Affairs,* 2002), integration is important in education systems of all levels, seeking that education becomes the main initiative of changes. Namely, efficient education requires unity of content and the process of education. Abilities and values required of an active and educated citizen, the wish and the ability to contribute to creation of a more perfect world are mostly developed in activities. Therefore, the school should turn into the workshop of the future world. It should become usual that the school is the place where problems and questions are formed, encouraging pupils to search for the answer independently, comprehensively analyse ideas and justify their opinions, discuss the meaning of subject knowledge and abilities in the context of actual life. This way education turns into a necessary condition of sustainable development and essential means of making grounded decisions and promotion of democracy. From this perspective, a particular role is given to teachers. Therefore, they have to meet particular requirements and at the same time obtain competencies necessary for acting in new conditions. Teachers should both take up education for sustainable development and ensure implementation of the strategy of sustainable development of schools in the communities of educational institutions. Lithuanian teacher-training higher education institutions should ensure that in teacher training the principles of education for sustainable development are implemented and that prospective teachers acquire such competency which would enable implementation of education for sustainable development in the teaching/education process.

In Lithuanian education strategies and practice, the transformational function of education is increasingly showing up: to initiate positive changes in the society and to create a more perfect world. The above-mentioned tendencies are also supported by favourable *Provisions for the National Education Strategy 2003–2012* (approved by the Seimas of the Republic of Lithuania on July 4, 2003). They also include the following important mission of education: to help the person to acquire professional qualification corresponding to the contemporary level of technologies, culture and personal abilities and create conditions for lifelong learning; i.e. constantly meet cognition needs, seek new competencies required for the professional career and for giving a sense to life. In the modern world of knowledge and information, the activities at work, the type of work are changing, and the decisions taken also influence the whole environment. Fast improvement of science and technologies determined frequent changes of skills of labour force. For this reason there appeared a need of continuous teaching and requalification in the society, which determined the mobility of the profession. The teacher's job is not an exception. In-service training is necessary for every teacher because absence of endeavour to improve equals to standing in the same place when the whole world is moving fast. Meanwhile requalification as one of the ways of continuous learning is a possibility of improvement and self-realisation (Jucevičienė & Lepaitė, 2003).

Alongside with the changing world, the requirements for the employees' competency are changing too. Criteria describing qualification such as education, professional readiness, experience are insufficient. The concept of competency, including combination of knowledge and skills and the ability to apply them in concrete conditions, is increasingly

employed. Competencies can be acquired only through constant learning. The ideas of constant learning or, in other words, lifelong learning are analysed by advocates of different theories (humanists, behaviourists, etc.). In Lithuania there is a *Lifelong Learning Strategy* (Lietuvos Respublikos Švietimo ir mokslo ministro įskymas [Order of the Minister of Education and Science of the Republic of Lithuania], 2008), besides, this was described by Beresnevičienė (1995; 2003), Rutkauskienė (2003) and many other authors. One of the elements of continuous learning is requalification, which is very relevant in today's society. Teachers' requalification was surveyed by Rodzevičiūtė (2008), Merkys (2004), Totoraitis, Briedis and Gudaitytė (2004), Šutinytė (2006), etc. These researches focus on the fact that teachers' requalification is becoming relevant due to demographic changes, changes in the network of education institutions and changing content of education. The teacher who has acquired two or more specialities is more flexible and safer in the changing market of pedagogical work. The problem of teachers' unemployment is turning into a systematic phenomenon and, if no corresponding actions are taken, it can complicate due to unfavourable demographic situation. Many researches demonstrated that in-service training is important both to teachers and learners. The system of in-service training is improving and becoming more diverse, it is oriented to meeting teachers' needs and implementation of priorities of state education, determining positive changes. Motivation of teachers' in-service training or requalification is sufficiently high, it is not limited to formal type requirements raised to programmes. Teachers seek to acquire new knowledge, improve their work skills, seek to acquire new competencies and comprehensively develop. Much attention to in-service training is paid both by the very teachers and authorities or the state. Much less attention is paid to teachers' requalification.

Along with reduction in the numbers of comprehensive schools and pupils, the numbers of teachers and school managers are also decreasing. Very clearly these numbers can be seen in publications *Lietuvos švietimas skaičiais* [Lithuania's Education in Numbers] (Lietuvos Respublikos Švietimo ir mokslo ministerija [The Republic of Lithuania Ministry of Education and Science], 2006, 2008, 2010). However, these publications do not yet contain a section about teachers' requalification, and this shows that in Lithuania still little attention is paid to teachers' requalification.

To sum up these researches, it can be stated that in Lithuania researches analysing this trend of constant learning in general are missing; there are particularly few in-depth researches on the aspect of practical usefulness of these studies, and there is a shortage of researches analysing whether the offered requalification studies for persons who seek to acquire teacher's qualification provide exactly those competencies which are declared in documents and researches on education.

The **aim** of the empirical **research** is to find out the opinion of graduates of requalification studies regarding what competencies and what level of competencies they acquired during their pedagogical studies as well as how useful this was in their practical activities.

The following **research methods** were applied: analysis of pedagogical research literature and analysis of documents on education; graduates' survey; descriptive statistics, correlation analysis and factor analysis.

The research was carried out in 2011 applying the survey method. The graduates' questionnaire was created by the authors of the article. Designing the research questionnaire, the following documents on education were referred to*: Lietuvos švietimo*

plėtotės strateginės nuostatos gairės. 2003–2012 metai [The *Provisions* for the National *Education Strategy 2003–2012*] *(2003) Pedagogų rengimo reglamentas* [The Regulation of Teacher Training] (Lietuvos Respublikos Švietimo ir mokslo ministras [The Republic of Lithuania Minister of Education and Science], 2010), *Pedagogų rengimo koncepcija* [Conception of Teacher Training] (Lietuvos Respublikos Švietimo ir mokslo ministras [The Republic of Lithuania Ministry of Education and Science], 2004), national scientific researches (*Projekto „Pedagogų rengimo tobulinimas“ rezultatų apibendrinimas* [Generalisation of the Results of the Project "Improvement of Teacher Training"] (2008), *Pedagogų perkvalifikavimo programų metodologija ir realizavimo metodika* [Methodology and Methods of Implementation of Teachers' Requalification Programmes] (2007), *Pedagogų rengimas Lietuvos aukštosiose mokyklose darnaus vystymosi švietimo kontekste* [Teacher Training in Lithuanian Higher Education Institutions in the Context of Sustainable Development of Education] (2006).

Seeking the research aim, 140 closed type questionnaires were distributed because this was the number of graduates of requalification studies in 2011 in one out of the six Lithuanian university type institutions of continuous studies, which implement teachers' requalification. Out of 140 sent out questionnaires 81 were received, the return quota being 57.9 %.

Research sample. Among the research participants 8.6% were males and 91.4% females. It is obvious that pedagogical requalification studies are more frequently chosen by females than by males; a similar tendency is being observed at Lithuanian schools: there are more female teachers than male teachers; therefore, it is natural that requalification studies were more often chosen by females.

The majority of persons who took part in the research are aged 31–40 (39.5%), slightly less frequently requalification studies were chosen by persons between 20 and 30 years old (28.4%) or between 41 and 50 years old (23.5%). The least share of respondents was of pre-pensionary age, i.e. between 51 and 60 (7.4%) and over 60 (1.2%). Such statistics of respondents' age is to be treated normal because namely middle-aged persons are most inclined to change their qualification.

Persons mostly resolve to change their qualification when they have already 6-15 years of service (44.4%), 16–25 years of service (27.2%) or having worked just for not more than 5 years (19.8%). Only a small share of respondents (8.6%) had worked for more than 25 years. Such tendencies like in the above case are also to be treated as normal and they are to be related to the fact that a person who has worked in a certain job for a certain time understands that yet they have chosen a profession that is either not suitable for them or is not marketable in the labour market and that is why they are changing their qualification.

More than half of the respondents have worked in their last workplace for more than 5 years (56.8%), whilst about one third (34.6%), for up to 10 years. Only 8.6% of the respondents noted that they had worked in the same workplace for 26–35 years. This demonstrates that the respondents' resolve to change their qualification could have been influenced by the change of the workplace. Their resolve to acquire teacher's qualification also could have been determined by the requirement in *The Law on Education* (2003) (*Lietuvos Respublikos Švietimo įstatymas* [Law of the Republic of Lithuania on education], edition 2009), committing persons who work as teachers in comprehensive schools and who do not have a teacher's qualification or subject training to acquire it during two

years since beginning to work as a teacher of that subject. The latter assumption is also confirmed by the fact that the absolute majority of respondents (88.9%) work in an educational institution and the majority have a steady job according to the acquired speciality (64.2%). On the other hand, it was also identified that 87.7% of graduates of requalification studies paid for studies themselves and only several respondents' (3.7%) studies were financed by the employer or another sponsor (8.6%). These results enable to assume that the respondents' requalification was mostly determined by personal interest. Having generalised these results, it can be stated that the graduates were mostly motivated to acquire teacher's qualification not that much by external as by internal factors.

CONTENT, SOURCES AND MEANINGFULNESS OF COMPETENCIES ACQUIRED BY GRADUATES DURING THEIR PEDAGOGICAL STUDIES IN PROFESSIONAL ACTIVITIES

Seeking to find out essential competencies acquired by respondents, first of all, they were distinguished on the basis of the analysis of scientific sources and then grouped on the basis of the results of factor analysis. Having applied VARIMAX rotation, six categories were distinguished, which were named according to their meaning by the researchers. Factor analysis also enabled to ascertain the reliability of these data (Cronbach alpha 0.96, Kaiser-Meyer-Olkin 0.81).

These data persuaded that during pedagogical studies graduates acquired: (1) pedagogical knowledge (speciality knowledge and the ability to envisage the essence); (2) the ability to communicate (to communicate with parents, pupils and colleagues, form an opinion and justify it); (3) abilities of envisaging and solving problems (to penetrate problems, go deep into them and solve them); (4) competencies of information search and usage (information search, analysis, systematisation, generalisation, abilities to apply knowledge at work, in other activities and while learning other subjects); (5) general human competencies (respect to people who have different opinion, respect to different cultures, sensitivity to a person, politeness, responsibility, dignity, openness); (6) general competencies (global thinking, critical thinking, flexibility, self-control, discipline, accuracy, curiosity, perceptiveness, systematic learning).

The question is what essential competencies and abilities were developed during requalification studies. Out of given 33 abilities and knowledge, employing SPSS software and carrying out factor analysis, all abilities were grouped into six blocks. According to Rodzevičiūtė (2008), competencies are constantly acquired together with new activities, sometimes they change according to importance. Acquisition of new competencies is namely the indicator of the teacher's improvement, and during requalification studies new competencies have to be developed because qualification is being changed as well. Research results demonstrate that, in the graduates' opinion, their competencies were being developed during requalification studies. First, we shall present the results about the way the respondents' knowledge was developed (Table 1).

Table 1. Graduates' approach to formation of pedagogical knowledge during studies (%), N=81

No.	Abilities/knowledge	Basically developed	Partially developed	Somewhat developed	Not developed
1.	Speciality knowledge	72.8	23.5	2.5	1.2
2.	Envisaging of the essence of knowledge	55.6	35.8	8.6	-

The respondents state that they acquired speciality knowledge because as much as 72.8% of the respondents acknowledged that their knowledge baggage basically increased, and this means that during requalification studies a lot of attention was paid to speciality knowledge and this should be the case because this is the purpose of requalification studies. The second ability attributed to the first block is envisaging of the essence of knowledge. Only slightly more than half of respondents noted that this ability was being basically developed; however there were no respondents who would state that during studies they have not formed the ability to go deeper into the essence. With regard to gender, age, years of service or work experience, no statistically significant differences were noticed. Thus, it can be assumed that respondents of both genders, of different ages and with different experience similarly acknowledged that during studies they had received knowledge and developed the ability to envisage its essence.

A slightly different situation is observed when analysing data of graduates' opinion about development of their ability to communicate (Table 2).

Table 2. Graduates' approach to development of communication abilities during studies (%), N=81

No.	Abilities/knowledge	Basically developed	Partially developed	Somewhat developed	Not developed
1.	Communicative abilities	43.3	44.4	12.3	-
2.	Formation of opinion	42.0	46.9	11.1	-
3.	Justification of opinion	46.9	39.5	12.3	1.2

It was found out that according to the respondents, all three abilities were being insufficiently developed during pedagogical studies because less than half of respondents acknowledged that these abilities were being basically developed. The ability that is being mostly basically developed is the ability to justify opinion (46.9%), and this is very important in pedagogical work. Slightly less developed is the ability to communicate with learners, their parents and colleagues. Communicative competency is also included in the *Mokytojų profesijos kompetencijos aprašas* [Description of Teacher's Professional Competences] (Lietuvos Respublikos Švietimo ir mokslo ministro įskymas [Order of the Minister of Education and Science of the Republic of Lithuania], 2007). 43.3% of respondents stated that communicative abilities during requalification studies were being basically developed and 44.4% stated that they were being partially developed. This demonstrates that during requalification studies attention should be focused not only on speciality knowledge but also on communicative abilities because, according to

Christauskas (2005), the teacher has to be able both to creatively cooperate with school authorities and have communicative abilities communicating with pupils and their parents.

Correlation analysis disclosed certain statistically significant relationships between the respondents' experience in the labour market and the competency of justification of opinion (χ2=9.70, p<0.05, df=3). It turned out that 64.1% of persons working according to the speciality stated that the competency of justification of opinion during requalification studies was being basically developed, whilst among those who worked not according to the speciality 38.5% stated so. With regard to gender, age and years of service, statistically significant differences were not noted. Thus, it is obvious that graduates of both genders, different age and with different work experience similarly evaluated acquisition of communicative abilities during pedagogical studies, but the teachers more than those who did not work according to the acquired profession acknowledged that during their studies they had improved the competency of justifying their opinion.

Analysing how graduates evaluate the abilities of envisaging and solving problems, it can be seen that these abilities are developed more compared to communicative abilities (Table 3).

Table 3. Graduates' approach to development of envisaging and solving problems during studies (%), N=81

No.	Abilities/knowledge	Basically developed	Partially developed	Somewhat developed	Not developed
1.	Envisaging problems	59.3	29.6	8.6	2.5
2.	Going deep into the problem	60.5	25.9	11.1	2.5
3.	Solving problems	59.3	27.2	13.6	-

Almost two thirds of the respondents acknowledged that during pedagogical studies they basically improved their ability to envisage problems, go deep into them and solve them. Thus, it is obvious that the graduates acknowledged that they had improved these abilities during their studies. Correlation analysis disclosed that there was a statistically significant relationship between experience in the labour market and the problem solving competency (χ2=11.3 p<0.05, df=2). It turned out that fewer persons working according to the speciality (51.9%) compared to those working not according to the speciality (71.4%) thought that the problem-solving competency during requalification studies was being basically developed. It may be that persons working according to the speciality have more experience with solving problems, they acquired it not only during their first studies but also in practice; therefore, they do not focus so much on the competency developed and do not give so much prominence to it. In other cases, no statistically significant relationships were found. Hence, it can be maintained that age, gender, acquired work experience basically do not influence the graduates' approach to the ability to envisage problems, go deep into them and solve them. The respondents' opinion was only slightly influenced by their work according to the acquired profession.

A slightly different situation was observed when analysing data about the respondents' approach to the development of competencies of information search and usage (Table 4).

Table 4. Graduates' opinion about the development of competencies of information search and usage during pedagogical studies (%), N=81

No.	Abilities	Basically developed	Partially developed	Somewhat developed	Not developed
1.	Information search	77.8	17.3	3.7	1.2
2.	Analysis of information	64.2	28.4	7.4	-
3.	Systematisation of information	69.1	19.8	11.1	-
4.	Generalisation of information	58.0	29.6	12.3	-
5.	The ability to apply knowledge of one subject while learning other subjects	44.4	37.0	17.3	1.2
6.	The ability to use knowledge at work	67.9	21.0	11.1	-
7.	The ability to use knowledge in another activity	33.3	39.5	25.9	1.2

Graduates of pedagogical studies stated that the ability that was mostly basically developed was the ability of information search (77.8%). This is understandable because studying many subjects, the learner himself/herself has to find certain information necessary to carry out various tasks. 69.1% of the respondents stated that the ability of systematising information was being basically developed and this is important in pedagogical work when the abundance of information has to be systematised and presented to learners. Only a slightly less share (two thirds or slightly less) of the respondents acknowledged that during studies the abilities of analysis, generalisation of information, application of knowledge in work environment were being developed. Thus, it is obvious that the teachers acknowledged that during studies they had self-developed the ability of information search, learned to analyse, systematise, generalise and use it in their work. However, the graduates also indicated that the ability to apply knowledge of a certain subject while learning other subjects was being less developed during studies because less than half of them indicated that this ability was being basically developed. Still less, just one third of the respondents emphasised that during their studies the abilities to use the acquired knowledge in another context were being developed. Thus, it can be concluded that although during studies the abilities to find, systematise, generalise, analyse and use knowledge acquired in one's work are being basically developed, little attention is being paid to linking knowledge of one subject to another subject and to the development of the ability to use knowledge in other activities. Such situation could have developed because teachers still have not gone deep into the content of other subjects and in their work they are mostly oriented to competencies developed in the studies of their subject.

A statistically significant relationship between the respondents' *age* and their opinion about the fact that during studies the ability to use the acquired knowledge at work was developed (χ^2=17.6, p<0.05, df=8) was noted. It was found out that the respondents aged 20–30 (78.3%) and 31–40 (71.9%) thought that the ability to use knowledge at work was being basically developed during requalification studies whilst among senior respondents the numbers of those who think so was less (aged 41–50 – 57.9%; aged 51--60 – 50.0%). This can be explained by the fact that learners of junior age have less experience and that is why they more envisage that the ability to apply knowledge in practice is being basically

developed. A statistically significant relationship was also noticed between the respondents' *gender* and the ability to use knowledge in another activity (χ^2=21.3, p<0.05, df=3). According to the results, males (85.7%) more than females (28.4%) are inclined to think that the ability to use knowledge in another activity is being basically developed. Also a statistically significant relationship was noted between *experience in the labour market* and competencies of information search (χ^2=10.7, p<0.05, df=3), information systematisation (χ^2=13.4, p<0.05, df=2) and the ability to apply knowledge at work (χ^2=11.3, p<0.05, df=2). It was found that those working not according to the speciality more emphasise that competencies of information search (92.9%), systematisation of information (92.9%) and the ability to use knowledge at work (82.1%) were being basically developed during the study process, whilst those working according to the speciality emphasised it less (correspondingly 69.2%; 55.8%; 59.6%). This leads to the assumption that anyway those persons who do not work according to the qualification acquired during studies might be insufficiently acquainted with pedagogical work practice and for this reason might think that the above-mentioned abilities are being basically developed. In addition, a statistically significant relationship was noticed between the respondents' *years of service* and the competency of analysing information (χ^2=25.7, p<0.04, df=10). The respondents with 0–5 years of service state that the competency of the analysis of information during requalification studies is being basically developed (87.5%), whilst the percentage of persons with longer years of service who state so is significantly less (from 58.3 % to 60%).

In the teacher's work it is very important to communicate and cooperate with persons of different cultures, encourage learners' communication and cooperation in the class; thus, researching how the respondents evaluate acquisition of general human competencies, the following situation was identified (Table 5).

Table 5. General human competencies (%), N=81

No.	Abilities/knowledge	Basically developed	Partially developed	Somewhat developed	Not developed
1.	Respect to people with different opinions	50.6	29.6	14.8	4.9
2.	Sensitivity to a person	37.0	30.9	25.9	6.2
3.	Respect to different cultures	44.4	32.1	18.5	4.9
4.	Politeness	40.8	32.1	22.2	4.9
5.	Responsibility	61.7	18.5	17.3	2.5
6.	Dignity	44.4	30.9	22.2	2.5
7.	Openness	38.3	37.0	22.2	2.5

Research results enable to state that slightly less than half of the respondents noted that basically responsibility (61.7%) and respect to different people (with different opinions) (50.6%) were being developed. Less developed features are sensitivity to a person, politeness and respect to other cultures, dignity and openness because only slightly more than one third of respondents stated that these value approaches were being basically developed. Having compared these results with the ones discussed above, it is obvious that the respondents are more inclined to envisage that during pedagogical studies more attention

is given not to the development of communication and general human competencies but to other competencies necessary in teacher's work. Such situation can be explained, and the results of the sample confirm, by the fact middle-aged persons, who have already formed their value approaches, are more inclined to change their qualification; therefore, in general they focus on development of value approaches less.

During the research, statistically significant relationships between *work experience* and development of such features as respect to different people (with different opinions) (χ^2=17,6, p<0.05, df=3), sensitivity to a person (χ^2=16.2, p<0.05, df=3), politeness (χ^2=21.2, p<0.05, df=3), dignity (χ^2=15.7, p<0.05, df=3) and openness (χ^2=12.3, p<0.05, df=3) were noted. It turned out that those persons who worked not according to the speciality thought that the above mentioned features (from 60.7% to 64.3%) during requalification studies were being basically developed, whilst there were less persons who thought so among those who worked according to the speciality (from 23.1% to 44.2%). This can be explained by the fact that persons who work according to the speciality have already got these features; therefore, they do not pay so much attention to when they are being developed or, having encountered the reality of the speciality, they think that these features during the studies are not being basically developed. No statistically significant relationships between gender, age, years of service were noted.

One more, the last block, which consists of 9 competencies, is called general competencies (Table 6).

Table 6. General competencies (%), N=81

No.	Abilities/knowledge	Basically developed	Partially developed	Somewhat developed	Not developed
1.	Global thinking	56.7	19.8	21.0	2.5
2.	Critical thinking	49.4	37.0	12.3	1.2
3.	Flexibility	33.3	51.9	11.1	3.7
4.	Self-control	43.2	40.7	13.6	2.5
5.	Discipline	40.7	38.3	17.3	3.7
6.	Accuracy	37.0	49.4	12.3	1.2
7.	Curiosity	42.0	37.0	18.5	2.5
8.	Observation	43.2	40.7	14.8	1.2
9.	Systematic learning	55,6	30.8	13.6	-

This block contains general competencies which are necessary both for a teacher and every personality that wants to improve. However, according to more than half of respondents, only three abilities are being basically developed: global thinking, systematic learning and critical thinking, because half of respondents or even more than half of them emphasised development of these abilities in the study process. Other abilities indicated in this block (flexibility, self-control, discipline, accuracy, curiosity, observation) according to the graduates are being less developed because only about one third or slightly more respondents stated that these features were being basically developed. Thus, to sum up, it can be stated that it might be that not only the competency of communication, general

human values but also general competencies during requalification studies are not being developed sufficiently.

Correlation analysis disclosed that there was a statistically significant relationship between *respondents' experience in the labour market* and development of the flexibility competency (χ^2=0.10, p<0.05, df=3). It was found out that people working not according to the speciality thought that this competency was being basically developed (50.0%), whilst among respondents who worked according to the speciality 25.5% thought so. Statistically significant relationships between gender, age and work have not been noticed. Because these are only general competencies which are not obligatory in the teacher's work, requalification studies do not focus a lot on their development as well. It can also be the case that they are being developed together with other competencies and respondents simply do not distinguish them studying a chosen subject.

Of course, studies have to develop as many competencies as possible, but it should not be forgotten that these are requalification studies when learners are persons who have both much experience and competencies and abilities. Some competencies are being developed during all studies, irrespective of the speciality; therefore, during requalification studies, more attention should be paid to specific competencies necessary for the teacher's professional activities. It is interesting that most of the statistically significant relationships were noticed between experience in the labour market and certain competencies. It was noticed that people working not according to the speciality more often than the ones working according to the speciality stated that certain competencies were being developed during requalification studies.

The authors wished to find out which competencies that in the respondents' opinion are important were not being developed during studies. To find out this, an open question was given which was answered only by 19.7% of the respondents. 43.7% of them state that all necessary competencies were being developed during studies. It can be assumed that those who did not answer this question also think that there were no such competencies which were not being developed. However, it cannot be stated so because those who did not answer may have not had an opinion or so. Other competencies were distributed into professional and general (considering *The Description of Teacher's Professional Competencies* (Lietuvos Respublikos Švietimo ir mokslo ministro įskymas [Order of the Minister of Education and Science of the Republic of Lithuania], 2007). The description of competencies, in addition, distinguishes a general cultural competency but the respondents have not mentioned it.

Several respondents complained that certain professional competencies (pupils' evaluation, ways of solving problems), general competencies (25%) (teamwork, curiosity, responsibility, formation of an opinion) were not being developed. Anyway, the bigger share of respondents state that all competencies that are necessary for the teacher's work are being developed.

The open question was about competencies that the teacher must self-develop. This question was answered by 64.2% of the respondents. The answers were distributed into professional and general competencies (considering *The Description of Teacher's Professional Competencies* (2007)), also a separate group was distinguished for answers which stated that all competences mentioned above were important for teachers; positive answers were given by 17.3% of respondents. Half of respondents stated that it was most important

for the teacher to self-develop professional competences (organisation of pedagogical work, knowledge of the delivered subject, creation of learning environments, planning lessons, motivation of pupils, etc.); the remaining 32.7% stated that general competencies (tolerance, responsibility, honesty, sensitivity, creativity, flexibility, curiosity, etc.) were important. To sum up, it can be stated that the teachers acknowledge that professional competencies are more important. This is quite clear because the teacher who will have many general competencies but few professional competencies will not be able to educate suitably even if they do their best. The same situation is with those who have few general competencies. In education the teacher's personality is very important; nowadays, when the teacher's role is changing and when they turns into assistants, general competencies become even more important.

It was attempted to find out where teachers had acquired most of the competences necessary for teacher's work. To do this, the teachers were asked to indicate sources of acquisition of competencies. Data are given in Figure 1.
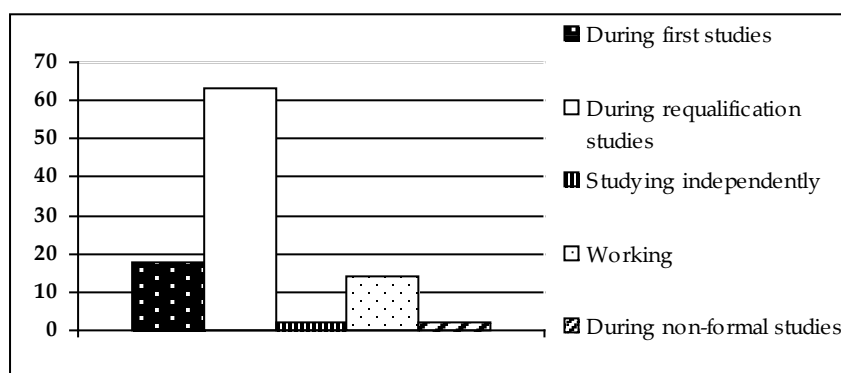
Figure 1. Sources of acquiring competencies (%), N=81

Data have proved that the majority of surveyed graduates (62.8%) indicated that they had acquired competences necessary in teacher's work during requalification studies. Only nearly one fifth indicated that they had acquired these competencies during their first studies and one sixth, directly working. Only several respondents acknowledged that they had acquired competences necessary in the teacher's work studying independently or during non-formal events.

Statistically significant relationships between the respondents' *age* (χ^2=49.5, p<0.05, df=20) *and experience in the labour market* (χ^2=34.7, p<0.05, df=5) and where competencies were acquired were noticed. It turned out that the respondents of junior and senior age more emphasised that they had acquired competences necessary in teacher's work during their first studies. This can be explained by the fact that maybe persons of junior age who have just finished basic studies have not yet forgotten competencies developed there. It is interesting that none of the persons who work not according to the speciality noted that he/she acquired necessary competencies studying independently, whilst among those working according to the speciality this share is 5.8%. This can be explained by the fact

that persons working according to the speciality are more motivated to work as teachers because this can determine their status in the society, salary, etc.; therefore, they try to develop competencies they need by learning independently. No significant differences between the respondents' *gender and years of service* and the source of acquisition of competencies were noted.

The research seeks to find out whether the competencies acquired during requalification studies are useful in teachers' professional activities. To carry out this task, several questions were formulated. First, the authors endeavoured to find out which competencies the respondents lacked before studies. If they chose requalification studies due to in-service training, it is quite clear that they had to lack certain competencies. Answers to the open questionnaire were grouped into three main categories: (1) pedagogical-psychological; (2) managerial knowledge and (3) other professional knowledge. This question was answered by 66.7% of the respondents. From this number, 70.4% stated that before studies they lacked speciality knowledge (psychological, social knowledge, the ability to organise activities, to teach in an interesting manner, the ability to plan activities in the lesson, choose suitable methods, etc.). This indicates that requalification studies were chosen by such persons who were really short of knowledge so that they could work productively and teach others. It can be that requalification studies were chosen by persons who had not worked at school before because answers included statements that they lacked knowledge of education studies or pedagogy and this knowledge is obtained by everyone who studies pedagogy. 11.1% of the respondents stated that they lacked managerial knowledge whilst the answers of remaining 16.7% were attributed to other professional knowledge (vocabulary, text perception, knowledge of grammar, language usage skills, etc.). The answers show that learners need both speciality knowledge and skills like language usage, vocabulary, etc. This means that the teachers understand that successful work requires not only speciality knowledge but also managerial knowledge.

It is important to find out what knowledge that is meaningful for the graduates they acquired during their studies. To find out this, an open question was given. It was answered by 70.4% of the respondents. Having reviewed the graduates' answers, they have also been distributed into three groups: 1) pedagogical-psychological knowledge; 2) managerial knowledge and 3) other professional knowledge. From those who answered this question, 68.4% stated that they had acquired speciality knowledge (deeper perception of the learning process, the ability to systematise pupils' knowledge, skills of writing lesson plans, the competency of lesson planning and organisation, knowledge of the most progressive methods of teaching/learning, etc.). This demonstrates that during requalification studies, really considerable attention is being paid to speciality knowledge which is most important because students are being prepared for pedagogical work. The answers of 21.1% of the respondents who answered the open question were attributed to other important knowledge because they stated that they had acquired much various knowledge and abilities in general, others emphasised that they had acquired abilities to use data bases and reflection skills. The remaining 10.5% of the respondents stated that during studies they had acquired managerial knowledge and abilities.

Having reviewed all answers, it can be noted that during requalification studies, speciality knowledge and abilities are mostly emphasised, but other knowledge that is necessary for education of a versatile personality is also not rejected.

The research aimed to find out whether the competencies that the respondents acquired during studies were useful in their professional activities. The results are shown in Figure 2.
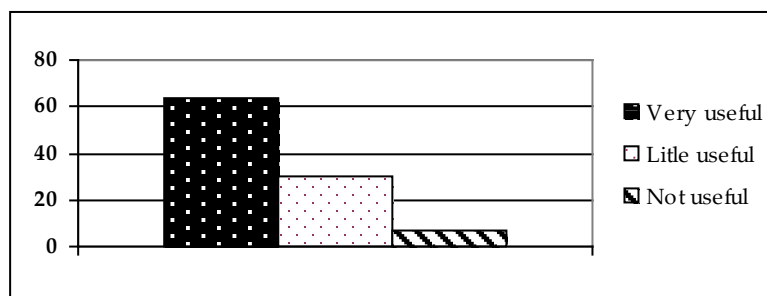
Figure 2. Usefulness of acquired competencies in professional activities (%), N=81

It is interesting that none of the respondents noted that the competencies acquired during studies were not useful. 64.2% of the respondents stated that they were very useful. A small share (6.2%) answered that the acquired competencies were little useful. This demonstrates that requalification studies are being organised considering practice, learners' activities and are not only delivered theoretically. The learners acquire necessary competencies.

Correlation analysis convinced that acknowledgement of the benefit of pedagogical studies does not depend on the respondents' gender, age, years of service, because correlating the students' approach to usefulness of acquired competencies with these demographic data, no statistically significant relationships were found. However, work according to the speciality slightly influenced the respondents' opinion about the benefit of pedagogical studies because a statistically significant relationship in this aspect was identified ($\chi2=11.16$, $p<0.005$, df=2). It appears that persons who do not work according to the acquired profession more than those who work according to it envisage the benefit of competencies acquired during studies in practical activities because the absolute majority of persons who do not work according to the speciality (81.1%) indicated that competencies acquired in practical activities were very useful; only half of persons working according to the speciality stated so (53.8%).

It was also asked if the respondents did not regret studying. An absolute majority, 96.3% of the respondents, stated that they did not regret studying and the remaining 3.7% slightly regretted. There were no respondents who regretted studying in requalification studies a lot. Hence, it can be stated that requalification studies basically met graduates' expectations. Besides, to sum up, it has to be noted that the graduates envisaged the benefit of these studies and basically they acknowledged that they had acquired competences necessary in their pedagogical work during requalification studies. On the other hand, it is to be noted that persons who do not work according to the speciality in many cases more than those who work according to the speciality emphasised acquisition of certain competencies during pedagogical studies and their benefit in pedagogical activities. This enables to think that when further organising requalification studies for teachers, the content of studies should be more differentiated according to the learners' experience.

CONCLUSION

Nowadays, in the context of sustainable development the profession of the contemporary teacher has to meet a requirement to initiate positive changes in the society. This requirement implies the necessity not to improve qualified teachers' competencies but to involve persons who have acquired subject competency but who have not acquired teacher's qualification into teacher's profession and to develop their pedagogical competencies during requalification studies.

Lithuanian documents on education, scientific sources and national researches highlight the following components of competency/competencies of persons who are changing their qualification and seeking teacher's qualification, which in this research are brought under six groups: (1) pedagogical knowledge (speciality knowledge and the ability to envisage the essence); (2) the ability to communicate (communicate with parents, pupils and colleagues, form the opinion and justify it); (3) abilities of envisaging and solution of problems (abilities of envisaging problems, going deep into them and solving them); (4) competencies of information search and usage (search, analysis, systematisation and generalisation of information, abilities to apply knowledge at work, in other activities, learning other subjects); (5) general human competencies (respect to people with different opinion, respect to different cultures, sensitivity to a person, politeness, responsibility, dignity, openness); (6) general values (global thinking, critical thinking, flexibility, self-control, discipline, accuracy, curiosity, observation, systematic learning).

Research results demonstrated that according to the graduates of both genders, different ages and with different work experience, pedagogical knowledge, abilities of envisaging and solving problems, information search and usage are being mostly developed whilst slightly less attention is being paid to development of general human abilities, general values and communication abilities. Improvement of general human abilities, general values and communication abilities during requalification studies was slightly more emphasised by persons who did not work according to the acquired profession than those who worked according to the speciality. This difference of opinions could be explained by the fact that maybe those who do not work according to the speciality do not feel insufficient development of these competencies because they cannot practically test them.

The majority of the graduates of both genders, different ages and different years of service acknowledge that they have acquired competencies necessary in pedagogical work during requalification studies, that they are useful in their practical activities and that they have basically expanded their pedagogical knowledge. Again persons who are not working according to the speciality more than the ones who are working according to the speciality more often emphasised that they had acquired competences necessary for the teacher's work during their first studies.

REFERENCES:

Beresnevičienė, D. (1995). *Nuolatinis mokymais Lietuvoje. (Psichologiniai pagrindai): Monografija* [Continuing learning in Lithuania. Psychological bacgrounds: Monograph]. Vilnius: Pedagogikos institutas.

Beresnevičienė, D. (2003). *Jauno suaugusiojo psichologija: metodinis leidinys aukštosioms mokykloms* [Psychology of young adults: Methodical publication for higher education institutions]. Vilnius: Presvika.

Christauskas, J. (2005). Investigation of the need for continuing education. In *Proceedings of the International Conference on Engineering Education: ICEE'2005*, July 25–29, 2005 (vol. 1, pp. 632–637). Gliwice, Poland: International Conference on Engineering Education "Global Education Interlink".

Jucevičienė, P., & Lepaitė, D. (2003). Evaluator as feed-back driver: European competences and contemporary training problems. Competence as derived from activity: The problem of their level. *Socialiniai mokslai* [Social sciences], 4(36), 57–63.

Lietuvos Respublikos Švietimo ir mokslo ministras [The Republic of Lithuania Ministry of Education and Science]. (2004). *Pedagogų rengimo koncepcija* [The conception of teacher training]. Retrieved March 18, 2012, from http://www.google.lt/url?sa=t&rct=j&q=&esrc= s&source=web&cd=1&ved=0CC0QFjAA&url=http%3A%2F%2Fwww.smm.lt%2Fteisine_ baze%2Fdocs%2Fisakymai%2F2004-09-16-ISAK-1441%282%29.doc&ei=jCRAUePyA8T0sgb 6zoDYBw&usg=AFQjCNG4dNLnbapARuOR-Z0YRHFYfwx0tg&bvm=bv.43287494,d.Yms

Lietuvos Respublikos Švietimo ir mokslo ministras [The Republic of Lithuania Minister of Education and Science]. (2010). *Pedagogų rengimo reglamentas* [The regulation of teacher training]. Retrieved February 27, 2012, from http://www.smm.lt/prtm/docs/mkt/Pedagogu_rengimo_reglamentas_20100108.pdf

Lietuvos Respublikos Švietimo ir mokslo ministerija [The Republic of Lithuania Ministry of Education and Science]. (2006). *Lietuvos švietimas skaičiais* [Lithuania's education in numbers]. Retrieved February 27, 2012, from http://www.smm.lt/svietimo_bukle/docs/apzvalgos/ lietuvos%20svietimas%20skaiciais.pdf

Lietuvos Respublikos Švietimo ir mokslo ministerija [The Republic of Lithuania Ministry of Education and Science]. (2008). *Lietuvos švietimas skaičiais* [Lithuania's education in numbers]. Retrieved February 27, 2012, from http://www.smm.lt/svietimo_bukle/docs/apzvalgos/ Svietimas%20regionuose%202008-web.pdf

Lietuvos Respublikos Švietimo ir mokslo ministerija [The Republic of Lithuania Ministry of Education and Science]. (2010). *Lietuvos švietimas skaičiais* [Lithuania's education in numbers]. Retrieved February 27, 2012, from http://www.smm.lt/svietimo_bukle/docs/apzvalgos/ skaiciai_Studijos%202010.pdf

Lietuvos Respublikos Švietimo ir mokslo ministro įskymas [Order of the Minister of Education and Science of the Republic of Lithuania]. (2007). *Mokytojų profesijos kompetencijos aprašas* [Description of teacher's professional competences]. Retrieved March 8, 2012, from http:// www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=291726&p_query=&p_tr2=

Lietuvos Respublikos Švietimo ir mokslo ministro įskymas [Order of the Minister of Education and Science of the Republic of Lithuania]. (2008). *Mokymosi visą gyvenimą užtikrinimo strategija*

[Lifelong learning strategy]. Retrieved March 8, 2012, from http://www.google.lt/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CC0QFjAA&url=http%3A%2F%2Fwww.suaugusiujusvietimas.lt%2F%3Fid%3D14%26did%3D28&ei=2HxAUb6aM6eM7Abg84HQBg&usg=AFQjCNGnwcb0VUc0AmGqiXQxU7lm9ZtvqA&bvm=bv.43287494,d.ZGU

Lietuvos Respublikos Švietimo įstatymas [Law of the Republic of Lithuania on education]. (2003) (edition 2009). Retrieved March 8, 2012, from http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=343430

Lietuvos Švietimo plėtotės strateginės nuostatos gairės 2003–2012 metai [Provisions of the Natioanl Education Strategy 2003–2012]. (2003). Retrieved March 11, 2012, from http://adamkus.president.lt/pdf/svietimo.gaires.pdf

Merkys, G. (2004). *Mokytojų poreikio kaita ir profesinės karjeros ypatumai, optimizuojant mokyklų tinklą* [Changes in the demand for teachers and career peculiarities, optimising school network]. Retrieved March 10, 2012, from http://www.google.lt/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CDAQFjAA&url=http%3A%2F%2Fwww.smm.lt%2Fsvietimo_bukle%2Fdocs%2FMokytoju%2520poreikis%2520ir%2520karjera%2520tyrimo%2520ataskaita.doc&ei=hihAUZbeCoWctAbP14HoBA&usg=AFQjCNEFJ7unLDTTkGjsDxxLqP3DkI2Puw&bvm=bv.43287494,d.Yms

Pedagogų perkvalifikavimo programų metodologija ir realizavimo metodika [Methodology and methods of implementation of teachers' requalification programmes]. (2007). Vilnius: Mokytojų kompetencijos centras.

Pedagogų rengimas Lietuvos aukštosiose mokyklose darnaus vystymosi švietimo kontekste [Teacher training in Lithuanian higher education institutions in the context of sustainable education]. (2006). Retrieved March 8, 2012, from http://www.smm.lt/veikla/docs/dv_svietimas/pedagogu_rengimas_DVS_kontekste.pdf

Projekto „Pedagogų rengimo tobulinimas" rezultatų apibendrinimas [Generalisation of the results of the project "Improvement of Teacher Training"]. (2007). Vilnius: Mokytoju kompetencijos centras.

Rodzevičiūtė, E. (2008). Pedagogo profesijos pasirinkimo motyvacija ir jos kaita pedagoginių studijų metu [Motivation to choose teaching as profession and its change during pedagogical studies]. *Profesinis rengimas: tyrimai ir realijos* [Vocational Education: Research and Reality], *15*, 74–85.

Rutkauskienė, D. (2003). *Nuotolinis mokymasis: mokomoji knyga* [Distance learning: Study book]. Kaunas: Technologija.

Šutinytė, R. (2006). Suaugusiųjų tęstinio mokymosi situacija: dabartis ir perspektyvos [The situation of adult education: The present and the perspectives]. *Filosofija. Sociologija* [Philosophy. Sociology], 4, 37–41.

Totoraitis, R., Briedis, M., & Gudaitytė, D. (2004). *Pedagogų rengimas Lietuvoje. Pertvarkos pastangos* [Teacher training in Lithuania. Strugles for reconstruction]. Vilnius: Danieliaus leidykla.

UN Department of Economic and social Affairs. (2002). *Johannesburg plan of implementation.* Retrieved March 11, 2012, from http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POIChapter4.htm

Empirical checking of criteria of the self-directed English acquisition readiness scale in blended e-studies for adults: Qualitative research

Ināra Bojāre

Daugavpils University, Latvia

ABSTRACT

Self-directed learning readiness scale (SDLRS) is used for general measurements. It does not include subject-matter, technological and collaborative dimensions which creates a problem of its inappropriateness for measuring adults' readiness to self-directed English acquisition in blended e-studies. After theoretical literature analysis, the criteria for a new scale, coordinated with the new model, were collected. This qualitative research aims to check empirically their usage by learners and find out additional criteria for the scale. Hypothetically, adult learners have accumulated foreign language acquisition experiences and the stories reflecting unknown learning methods could be told. Qualitative research is recognised to be appropriate for extending the self-directed learning (SDL) research map. The object of this qualitative research is the new SDEARS (self-directed English acquisition readiness scale), the subject – additional criteria for the scale. Narratives of five volunteer participants, written in the form of essays, are contextually analysed in four steps. Results of the qualitative research extend the comprehension of SDL concept and will be used for designing the scale for the quantitative research.

Key words: SDL, the integrative model, dimensions of the model, the SDEARS, the criteria of the SDEARS

INTRODUCTION

Some scholars are advocating that independence and autonomy may be cultural constructs reflective of self-directed learning (SDL) as it is practised in North America and that interdependence may be a characteristic of self-directed learners in other cultures (Nah, 2000, as cited in Ellinger, 2004). At the same time, personal development in the process of learning is topical in European countries, but the student-centred paradigm emphasises the role of s-elf, individual's activity and responsibility for the learning process and results.

So inquiry of adults' self-directed English acquisition in blended e-learning is topical from the point of view of implementing European language policy and personal development facilitated by the European Language Portfolio (ELP). Following Mezirow's (1983) critical awareness, postmodern understanding of the SDL adds transformation of personality to the construct.

The assumption of a qualitative research of narratives reflecting the language learning autobiographies is that adult learners have accumulated English learning experiences as their resources for other foreign language acquisition, personal development and transformation. The transformation is viewed in the continuum towards extending methods used for language acquisition, self-directed (SD) and SD collaborative language acquisition in group in different learning environments. But the problem is that considerable amount of adults still rely more on teachers than on themselves and are not responsible enough for the foreign language acquisition process which results in a weakened interdependence as well.

Autobiographies of teachers as learners are included in the research because, according to Brookfield (1995), their own view influences the way they teach the language. Self-reflection of their personal transformation as learners is a foundation for facilitation of learner's personal development and transformation during the language acquisition process.

Qualitative research is not so often used in SDL research, but it is recognised to be appropriate for extending the SDL research map (Brockett, 2000). A similar study is done by Donaghy (2006) who confirms that the idea of developing a history of self-directed learning is an area that has not been fully implemented in the literature (Donaghy, 2006). He studies self-directedness through the experiences of eight scholars who have contributed to the literature on this topic over the past four decades: Brockett, Brookfield, Caffarella, Guglielmino, Hiemstra, Kasworm, Long and Tough.

This article aims to provide an overview of the completed qualitative part of the research. The results are used for empirical checking of criteria and improving the content of statements of the self-directed English acquisition readiness scale (SDEARS) in blended e-studies for adults (Bojare, 2012). The design of the research includes selecting criteria from content analysis of theoretical literature and the ELP according to the perspectives and dimensions of the integrative model of self-directed English acquisition (IMSDEA) in blended e-learning for adults designed by the author of the article (2012).

The model differs from the model of distance education by holistic facilitation of SDL by learner's individual contribution, sharing of SDL experiences in group, discussions supported by the facilitator, including the appropriate module and methodological help

for SDL in the content and technological assistance of delivering the content and collaborative activities. Its novelty is including the dimensions of collaborative learning, technologies and methodological facilitation for SDL in the model of SDL. The necessity for the first and the second ones is proved by Donaghy (2006), but the third one is confidently used in the ELP.

THEORETICAL BACKGROUND: ASPECTS OF SUSTAINABILITY OF SELF-DIRECTED LEARNING

Caffarella (as cited in Tennant, 2006) points to three distinct ideas in the literature on SDL:

> *„...a self-initiated process of learning that stresses the ability of individuals to plan and manage their own learning, an attribute or characteristic of learners with personal autonomy as its hallmark, and a way of organizing instruction in formal settings that allows for greater learner control" (Caffarella, 1993, as cited in Tennant, 2006, p. 8).*

They connect the concept with non-formal, informal and formal education and in that way include it in the lifelong learning system that aims to enhance personal growth and development. Its using with *regard to the subject matter being learned* (Beitler, 2005) adds the aspect of sustainability to the development of learner's personality in the process of foreign language acquisition by personal and emotional involvement in problem-solving connected with own learning process in group.

The individual perspective of SDL, which includes self-regulated learning (SRL) and SDL dimensions of realisation of own *intellectual and emotional potential* (Knowles, 1975) by facilitator's help, is the strong side of the concept. At the same time, qualitative research by Donaghy (2006) shows two additional dimensions that are not reflected in the concept. Firstly, collaborative learning is a component of or resource necessary for SDL. Secondly, *technology and its association with the personal computer/internet is a strong catalyst for sustaining and even increasing the level of activity in SDL* (Donaghy, 2006).

Assessing the degree to which individuals perceive themselves to possess attitudes and skills associated with the term of readiness and an internal state of psychological readiness for SDL is measured by the self-directed learning readiness scale (SDLRS) (Guglielmino, 1977). Fisher, King and Tague (2001) caution that person's high level of readiness for self-direction (SD) in one situation would not be the same in a new, unfamiliar context. Although several skills and personality characteristics would be transferable to a different situation, it is concluded that measuring SDL readiness needs to be done within a specific context.

So the lack of subject-matter, technological and collaborative dimensions make the SDLRS not appropriate for measuring adults' readiness to SD English acquisition in blended e-studies. This problem creates a necessity of another scale that allows bringing nearer the readiness to SDL to the specific andragogical situation with an aim to facilitate knowing oneself for implementing the SDL as a learning and instruction method in the meaning of learner facilitation in solving their learning problems by different means. It is developed from the IMSDEA (Bojare, 2012). Each of its three perspectives consists of two dimensions reflecting the learner's individual perspective, group's and facilitator's social perspective and the perspective of subject-matter and technological context.

Individual perspective includes the cognitive SRL construct for language performance and comprehension and the SDL construct of personal development and emotional problem-solving connected with own learning process. The social perspective consists of self-determined learning, in the meaning of SDL in group or self-determined collaborative learning and communicative language acquisition, and facilitator's help at face-to-face lessons. The contextual perspective consists of technological assistance in delivering learning content and methodological materials, also about SDL, and technological assistance of virtual interactivity between individual – facilitator, individual – individual and individual – group. All together, it contributes to a sustainable essence of SDL.

From this integrative model, a new scale for measuring adult learners' readiness to SD English acquisition, the SDEARS, is derived. The blended e-learning environment gives additional opportunities for their facilitation in nowadays situation when offering of on-line language courses increases, but not all adults are ready to use these opportunities.

Criteria for the new scale are chosen, firstly, from theoretical literature about SRL, SDL and self-determined learning. Secondly, it is taken in account that the ELP adds similar value to the traditional language learning in the classroom. It encourages learners to take responsibility for their learning and helps learners to understand their individuality, and to achieve personal goals within the group (CE [Council of Europe], 2011).

The ELP for Adults (Eiropas Padome [Council of Europe], 2006), is the first one among those developed in Latvia which adds the aspect of sustainability to personal development in the process of foreign language acquisition. The record has three parts (The Language Passport, The Language Biography and the Dossier) that reflect learner's achievements in language learning and help a person to learn different languages. As a pedagogical device, it facilitates the learner's *involvement in planning, reflecting upon and assessing his or her learning process and progress* (CDCC [Committee for Cultural Cooperation], 2000), especially by filling the Language Biography.

Using the Language Biography for assessing one's language level and objectives makes it similar to Knowle's (1975) learning contracts assessing learner's needs, but using the grid for doing that, makes it useful for developing learner's language competence according to Grow's (1991) individualised Staged SDL model where instruction style and methods should be in compliance with learner's level of SDL and readiness to SDL. The ELP systematises the results of foreign language learning and sets goals for the future. It shows and facilitates the development of personality and learning skills in the continuum from one goal or language to another.

The Language Biography of the ELP more registers the present of the learning process, but narratives about personal experience of foreign language learning reflect the past of it. So they are useful for examination of the validity of criteria chosen for the SDEARS, where measuring of readiness to SD English acquisition in blended e-studies is turned in the future and may be practically used for agreement between demand and supply in offering foreign language learning courses.

QUALITATIVE RESEARCH

Qualitative research is the first step to connect the theory and practice of SDL. The purpose of the research is to collect empirical data for checking the criteria of the SDEARS. The results are used for checking the validity of the draft of the scale. The research question is: *What concepts of SDL approach of learning are used in foreign language acquisition?* It follows from the hypothesis that the stories reflecting unknown learning methods could be told through self-comprehension of adult learners' foreign language acquisition experiences.

This study consists of five written narratives given by volunteers, women aged 19–62, with different foreign language learning experiences. Two of them are English teachers who carried out the duties of mentors for two participants of the EU project. They had come from different European countries and worked at a school in Latgale region of Latvia during one year and also took part in the research.

The interest and using possibilities of foreign language acquisition was the main criteria for selecting the participants of the research. The opposite approach in foreign language acquisition is presented by the teacher of another subject who has also agreed to share her experience. Collecting of the narratives was started in 2008/2009. They were analysed in 2010. The results of the analyses were compared with the ELP in 2011.

The only question asked to the participants was to describe their personal experience of foreign language learning which resulted in a unique set of stories showing person's developmental adjustment to nowadays multilingual world.

RESULTS

The results of the research are presented in three categories: content analysis and its summary, comparing criteria of theoretically designed SDEARS with the criteria of the ELP and criteria from qualitative research findings according to the design of the research. The actual experience of foreign language learning, presented in a way of personal biographical stories, is examined by the method of content analysis in four steps: (1) dividing the text into sentences; (2) selecting of content units; (3) clarifying their meaning and (4) grouping and theoretical coding of the content units (Svence, Majors, & Majore, 2010). Theoretical coding is used for coding of the data of the research with the aim of connecting the obtained data with theoretical terms of SDL. The content units, terms and concepts identified in the participants' narratives are summarised in Table 1.

Table 1. Examples of content analysis – extracts from the research participants' narratives

Part.	Sent. nr.	Content unit	Term	Concept
1	1	for job	Need	SDL
1	1	basic skills, like to introduce myself	Goal	SDL
1	2	wrote notes with names of things	Cognitive strategy	SRL
1	3	my student's book	Resource	SDL
1	7	I try to use the new vocabulary	The use of language	SRL, skills
2	1.	foreign languages are something special, interesting	Emotions	SDL
2	2.	three foreign languages in school	Experience	SDL
2	5.	learned Swedish on my own	Process	SDL
2	5.	with exercise book and Audio-CD	Resources	SDL, technologies
2	7.	now I want to tell you	Social interaction	Self-determined learning
2	8.	I regularly repeated	Cognitive strategy	SRL
2	15.	the best way to train grammar	Metacognitive strategy	SRL
2	18.	to tell the summary to somebody	Collaboration	Self-determined learning
2	21.	you can discover something about the culture	Inter-cultural experiences	SRL
2	24.	there is a difference between learning a language	Cognitive approach	SRL
2	24.	and using the skills in real life	Communication in real situations.	Collaborative activities
etc.				

Summary of the content analysis is depicted in Table 2. Terms and concepts are grouped to count their frequency. The individual perspective in narratives mostly is presented by emotions (14 times); learning resources (13); motivation (10); learning results (9); creative learning (8) success/self-development/self-realisation and learning goals (6 times each) and is shown in the table. Other repeating terms – planning of time, interest, learning needs, using of opportunities, learning tasks, selecting of learning tasks – follow with five times each, developing subject-matter skills (4), choice, learning cycle, human resources, will-power, choice of place, using of language skills (3), intuition, independence, reflection (2), the level of the language skills, correction of the learning process, self-initiative, meaning of the choice, content, attitude, using of learning skills, creativity in acquisition of skills (1). The terms of SDL concept are mostly presented in the narratives and totally repeat 133 times.

Table 2. Frequency of terms and concepts identified in the narratives

Freq.	Terms	Concepts	Frequency
		Individual perspective	190
14	Emotions	SDL	133
13	Learning resources		
10	Motivation		
9	Results		
8	Creative learning activities		
6	Success/self-development/self-realisation		
6	Learning goals, etc.		
		Transformation	15
4	Learning methods		
2	Learning strategies, etc.		
		SRL	42
19	Rehearsal cognitive strategies		
8	Metacognitive strategies		
7	Subject-matter skills		
3	Elaborational cognitive strategies		
3	Monitoring		
2	Organisational cognitive strategies		
		Social perspective	68
9	Social interaction	Self-directed learning in group	24
7	Intercultural experience		
3	Collaboration		
3	Communicative use of language		
2	Sharing with experience		
		Educator	44
4	External motivation	Directed learning	19
3	Knowledge		
3	Teaching style		
2	External control, etc.		
		Facilitated learning	25
5	Social interactivity		
6	Strategies of facilitation		
3	Facilitation of SDL		
2	Teaching others		
2	Facilitation of acquisition of skills		
2	Experience of facilitation		
2	Success of facilitation		
1	Goal of facilitation		
1	Attitude		
1	Self-esteem		
		Assistance of technologies	12
8	Technological resources		
2	The environment of distance learning		
2	Using of language		

Apart from terms belonging to the concept of transformation and depicted in the table, the learners transform their attitude towards choice, from results to progress, readiness to change during the learning process (1 time each). They also change learning materials and resources, the way/form of learning, learning environment and social role (1 time). Totally the concept of transformation repeats 15 times. Terms of SRL repeat 32 times, but the individual perspective totally is presented 190 times.

The social perspective repeats 68 times. 24 times it is connected with SDL in group, but in 25 cases – with facilitated learning. The narratives also reflect directed learning (DL) (19). The terms repeating one time each are not included in the table. They are: educator's responsibility, actualisation of interactivity, teaching strategies, communication, content, result of learning, experience of DL. Assistance of technologies is mentioned 12 times in the context of technological learning resource as technological devices of learning, the environment and technological device for distance learning and language using.

Analytical tool of content analyses is used not only in quantitative research. Its using in qualitative research allows researchers to interpret social reality in a subjective but scientific manner. The validity of the inference is ensured by complying with a systematic coding process (Zhang & Wildemuth, 2009). The tool gets its qualitative meaning in this research from exploring the subjective meanings of messages given in the narratives. The research has produced numbers and description of an interested and experienced language learner.

Proportional comparing of frequency of terms and concepts identified in the narratives proves that the individual perspective is the most important for interested and experienced language learners, but they cannot do without the facilitator, group and technologies. Inside the individual perspective, SD foreign language acquisition is mostly presented in their narratives. It is important that they are able to transform their language learning habits according to new language learning opportunities, they show personal development and are able to change their social role according to the situation.

As directed content analysis, it is joined with coding according to the new scale and the ELP. In that way, the main criteria of the SDEARS selected from the theory and conditioned by the IMSDEA are confirmed empirically. The comparing of the theoretically chosen criteria of the SDEARS, criteria of the ELP and narratives is showed in Table 3 according to the design of the research.

Transformation of learning habits and social role are the main findings of the qualitative research that have an impact on the developing of the SDEARS. The necessity of including the methodological help for SDL and SRL is confirmed by the ELP. Communication in purposeful learning situations may broaden to *carrying out own duties, organising teamwork* as a part of collaborative learning for including in the IMSDEA in blended e-learning for adults. Additional criteria of observing mental work hygiene (light, breaks, physical activities) are not reflected in the ELP and narratives, but should be included in the scale because of easy loosing the sense of time during periods of intensive learning or using the computer.

Table 3. Comparing the main criteria of the SDEARS, ELP and narratives

SDEARS	ELP	Narratives
SDL (learning process, emotional involvement)	+	+
Transformation of self-concept	+	learning habits and social role
Initiative to organise learning activities	+	+
Developing self-experience of learning	+	Creative developing of self-experience of learning
SRL (cognitive process, intellectual involvement, learning skills)	+	+
Using metacognitive strategies	+	+
Using cognitive strategies	+	+
Subject-matter skills	+	+
_	Getting intercultural experiences	+
Facilitated, self-determined learning (collaborative learning activities)	+	+
Facilitation of learning	is possible	+
Interactive communication in SDL and SRL situations	is possible	when a learner has facilitator's role
_	Communication in real formal and non-formal situations	+
_	Carrying out own duties, organising teamwork	_
Technologies	+	+
Content	+	+
Structured/partially structured	_	+
Non-structured	+	_
_	Methodological help for SDL, SRL	_

At the same time, criteria of *communication in real formal and non-formal situations* is more appropriate for informal learning, but *getting intercultural experiences* is viewed as a part of the content of learning. As a result, investigating learners' biographical narratives reflecting their language learning and inter-cultural experiences gives information for assessing their learning needs and objectives of facilitation. Besides that, it should be mentioned, that the participant with experience of DL has not involved in SDL projects of learning other foreign languages.

The existence of creative developing of self-experience of learning is confirmed by a personal six-step self-initiated training model for foreign language acquisition practised by one participant of the research: singing songs in the target language; listening and repeating all the audio materials of the book for self-studies for acquisition of pronunciation; writing audiodictations using the same learning material and monitoring the writings with the tapescripts; listening, synchronous reading and retelling all the audio texts, including dialogues, with the tapescripts; answering the questions and doing grammar

exercises; activities of collaborative learning (also with native speakers if it is possible) for presenting monologues, speaking dialogues, answering questions about the texts, singing songs and natural speaking.

Reading books, e-correspondence, taking part in the projects, watching films, communication with foreigners in the target language may follow according to the situation. The personal model differs from traditional foreign language acquisition with intensive self-initiated acquisition of skills and not the acquisition of the programme or content of the learning materials page by page or separate modules where acquisition of different skills is mixed during one lesson or module. It shows the personal importance of collaborative learning as an important resource facilitating communicative language learning.

CONCLUSION

The aim of the research is reached and the hypothesis, that adult learners have accumulated foreign language acquisition experiences and the stories reflecting unknown learning methods could be told, is confirmed. The process of checking criteria of SDL is performed and shows that the SDEARS in blended e-studies designated for adults basing on theoretical analysis of the SDL concept have to be developed with the criteria established in the ELP and qualitative research. Results of the qualitative research extend the comprehension of the SDL concept and are useful for forming the statements corresponding to the IMSDEA and designing the scale of the quantitative research. The results show the direction of developing interested and experienced adult foreign language learners' self-experience from emotional perception and comprehension of themselves as learners, to recognising facilitator's role in social interactivity and facilitation of the learning process; developing SRL strategies; interaction and exchange with inter-cultural experience in group; transformation of learning methods, including using technological assistance as learning resource, environment and means of communication. The dominance of self-directed learning concept attests the importance of personal involvement depending on emotions; choosing learning resources and goals; motivation; monitoring learning results; creative learning; self-development and self-realisation and should be taken in account in e-learning.

REFERENCES:

Beitler, M. A. (2005). *Strategic organizational learning: A practitioner's guide for managers and consultants.* Greensboro: PPI.

Bojare, I. (2012). Self-directed English acquisition in blended e-studies for adults: Criteria of a scale. *Journal of Young Scientists, 2*(35), 4–10.

Brockett, R. G. (2000). Is it time to move on? Reflections on a research agenda for self-directed learning in the 21st century. Paper presented *at The Annual Adult Education Research Conference*, Vancouver, Canada. Retrieved October 24, 2010, from http://www.adulterc.org/Proceedings/2000/brockettr1-final.PDF

Brookfield, S. (1995). *Becoming a critically reflective teacher.* San Francisco, CA: Jossey Bass.

CDCC (Commitee for Cultural Cooperation). (2000). *CDCC, Educational Committee's recommendations, principles and guidelines for a European Language Portfolio.* Strasbourg: Council of Europe.

CE (Council of Europe). (2011). *European Language Portfolio: Education and languages.* Retrieved December 18, 2011, from http://www.coe.int/t/dg4/education/elp/elp-reg/ELP_biography_EN.asp

Donaghy, R. C. (2006). *"It permeates the whole fabric of your life": The experience of scholars who have studied self-directed learning.* Retrieved November 9, 2010, from http://www.adulterc.org/Proceedings/2006/Proceedings/Donaghy.pdf>

Eiropas Padome [Council of Europe]. (2006). *Eiropas valodu portfelis pieaugušajiem* [European Language Portfolio for adults]. Rīga: Valodu mācību centrs.

Ellinger, A. D. (2004). The concept of self-directed learning and its implications for human resource development. *Advances in Developing Human Resources, 6*(2), 158–177.

Fisher, M., King, J., & Tague, G. (2001). Development of a self-directed learning readiness scale for nursing education. *Nurse Education Today, 21*(7), 516–525.

Grow, G. O. (1991). Teaching learners to be self-directed. *Adult-Education Quarterly, 41*(3), 125–149.

Guglielmino, L. M. (1977). Development of the self-directed learning readiness scale (Doctoral dissertation, University of Georgia, 1977). *Dissertations Abstracts International, 38*, 6467A.

Knowles, M. (1975). *Self-directed learning: A guide for learners and teachers.* New York: Association Press.

Mezirow, J. (1983). *A critical theory of adult learning in adult learning and education.* London: Croom Helm.

Svence, G., Majors, M., & Majore, L. (2010). Latvijas iedzīvotāju izlases grupas priekšstatu par labizjūtu satura vienības kā pirmā Latvijas labizjūtas testa izveides pamats [Concept of well-being of the inhabitants of Latvia and the first stage of new well-being test modification in Latvian]. In M. Marnauza (Ed.), *Theory for practice in the education of contemporary society: 5th international scientific conference: Scientific articles and conference proceedings*, 25–27 March 2010 (324–330). Rīga: RPIVA.

Tennant, M. (2006). *Psychology and adult learning.* New York: Routledge Taylor and Francis Group.

Zhang, Y., & Wildemuth, B. M. (2009). Qualitative analysis of content. In B. Wildemuth (Ed.), *Applications of social research methods to questions in information and library science* (pp. 308–319). Westport, CT: Libraries Unlimited.

Arts, design and skills

Innovations in technical education

Veronika Artemeva

St. Petersburg State University of Architecture and Civil Engineering, Russia

ABSTRACT

Sustainable development of the modern society as a whole in many respects depends on every professional's readiness to adapt to the complex and rapidly changing world. Therefore, current educational systems need relevant educational technologies which would develop not only knowledge but also creative thinking. This paper describes the creation of an educational curriculum "Psychology of creativity" which is an innovation for a technical university.

Key words: innovation, components of creativity, creative position, creative expression, creative product

INTRODUCTION

Presently, Russian education system is undergoing changes. One of the actual problems is creating an innovative approach to education. In the recent decade psychological and pedagogical knowledge proved extremely popular in the contemporary society. The National Educational Standards for technical universities now include a new discipline "Psychology and pedagogy". These regulations stipulate not only the development of students' knowledge, but also targeting their independent thinking and creativity.

Accordingly, a curriculum of continuous psychological training for students (Артемьева, 2001; Artemyeva, 2004a, 2004b; Тутушкина & Артемьева, 2005) has been developed and successfully implemented at the Applied Psychology department of Saint Petersburg State University of Architecture and Civil Engineering (SPbSUACE). The curriculum includes a basic section intended for the training of all students, specialised subjects for future architects, economists and managers and optional courses.

The described system of teaching provides consistency of psycho-pedagogical education and enriches the professional training. This contributes to sustainable development of future professionals.

The Applied Psychology Department of SPbSUACE implements the following optional courses: "Organisational behaviour", "Environmental psychology", "Psychology of security", "Social psychology of management", "Psychology of creativity", etc. This paper presents an analysis of the programme "Psychology of creativity" developed by the author (Артемьева, 2001; Тутушкина & Артемьева, 2005).

Training curriculum for the development of students' potential already existed before in SPbSUACE. However, technical universities usually have one main goal – to develop technical creativity. In our opinion, this approach is too narrow; in addition, there was not enough scientific evidence of the creative potential of each student. True creativity requires a new vision, a new solution, a new approach, that is, willingness to abandon habitual patterns of behaviour, perception and thought.

RESEARCH OBJECTIVE

The main objective of this study is to create and test an educational curriculum which would tap into the innovative potential of each student through creative activities.

The study was implemented in the following stages:

1. Theoretical analysis of the concept of creative activity, differentiation of its components, selection of key component as grounds for subsequent creation of a training curriculum.
2. Comparison of students' personal characteristics, analysis of the relationship between personal characteristics and the results of creative activity.
3. Creation and testing of the curriculum "Psychology of creativity", analysis of the results of training.

METHOD

Respondents: 190 fourth-year students of SPbSUACE, aged 21-23. Main methods: Platonov's test "Creative opportunities" which studies the product of verbal creativity; test "Fitorobot" (author's creation) which studies the product of non-verbal creativity; questionnaire by Cattell, Eber & Tatsuoka (1977); correlation analysis; expert interview, methods of mathematical statistics.

RESEARCH CONTEXT, DESIGN AND FINDINGS IN THREE STAGES

First Stage

Creativity involves bringing something new to the world (Тутушкина, 2005). Creativity in its broadest sense can be seen not as an act of behaviour but as a special style of it, as a qualitatively higher level of any act of behaviour.

Analysis of relevant literature (Burt, 1962; Выготский, 1987; Guilford, 1968; Barron, 1969; Ананьев, 1980; Богоявленская, 1985; Альтшуллер & Верткин, 1990; de Bono, 1991, 1999; Тутушкина & Артемьева, 2005, etc.) suggests that the majority of research on creativity focuses on creative personality, creative abilities, stages of the creative process, and, to a lesser extent, on creativity, its mechanisms and components. The components of creative activity have not been investigated at all until the presented research.

The differentiation of creative activity in the context of the overall approach to creativity is necessary. We were interested in the distribution of the components of creative activity and in the correlation of its components with students' personal characteristics.

Creative activity is a complex systemic process. It includes such components as creative position, creative expression and creative product which determine the specific nature of the activity and play an important role in its formation. These components are defined below.

Creative position is the subject's attitude and potential readiness for creativity determined by an interaction of one's needs, interests, beliefs and ideas about oneself and the environment. Creative position includes evaluation of one's creative abilities, readiness for creativity and one's creative orientation.

Creative expression is a way of helping a creative position to be realised in daily life, a way of reaction to the environmental reality. Creative expression in both verbal and non-verbal sphere includes speed parameters (fluency), categorical flexibility, intellectual features of a person and an emotional component.

Creative product is what a person creates during the creative process, such combination of previously known things which renders them new for the person. The creative product is characterised by such parameters as being standard or non-standard, original or typical.

The components of cultural activities have the following psychological composition:
- *Creative position* includes self-assessment of creativity, willingness to be creative, creative personal orientation.
- *Creative expression* in verbal and non-verbal area includes high-speed performance (fluency), flexibility, intellectual personality and the emotional component.
- *Creative product* is characterised by indicators such as standard – originality, originality – stereotyping.

Analysis of survey and interview findings and the results of the author's creative activity set the value of each component of cultural activities. The leading role (42%) belongs to creative position. Significance of creative expression and creative product is 36% and 24%, respectively. Consequently, creative position is the key component for the development of students' creative potential.

Then we investigated the students' creative position via survey and interview. Data analysis reveals that the majority of the students (48.9%) in our sample have, in general, a pronounced creative position, 14.86% an above-average creative position, 14.82% have an averagely intense creative position, 12.6% have a creative position marked below average and 8.82% of students a weakly expressed creative position.

To practically confirm the results, we asked all students to take part in creative activities. The students came up with suggestions and drawings. Given these tests, interviews and self-reports of the students, creative position can be divided into the potential (which students merely declare) and the real (which is implemented to varying degrees in creative activities). The real position, in turn, is divided into three main levels. The real and potential creative positions are not always identical (Figure 1).
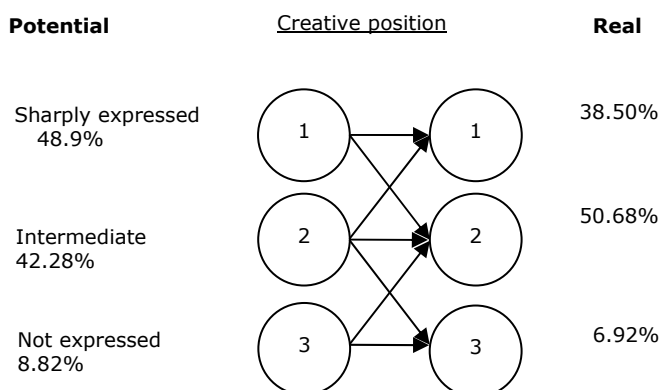
Figure 1. Levels of expression of creative positions

The majority of students in our sample (50.68%, p=0.05) have creative positions of an intermediate level. Only 6.92% students have unexpressed creative positions. Thus, we determined that the position is the main creative "development zone" of creativity. This was the key finding for creating a training programme.

Second stage

During the second research stage, we studied creative expression and creative product. For our purposes, we chose a situation of creative activity which resulted from the previously known elements, and the students created a new creative product. In this case, the methods described in the method section were used.

The method by Platonov shows the level of verbal creativity. When doing this test, students select words from the method and build and write sentences.

The method "Fitorobot" shows the level of non-verbal creativity. When doing this test, students draw unusual portraits consisting of fruits and vegetables. A classification of these drawings is outlined in the author's dissertation (Artemyeva, 2004a). According to the findings, the main indicators of the techniques used by the students are flexibility, originality and fluency. Also, the characteristics of general intelligence and intensity of emotion in the creative process of creating the product were taken into consideration.

Judging by the degree to which the students' creative problems were successfully addressed, the following groups were recognised:

- successful in all kinds of creativity (1);
- successful only in verbal creativity (2);
- successful only in non-verbal creativity (3);
- show stereotypical results (4);
- show the lowest results (5).

Table 1. The students' (n=190) results in the creative task

Groups	Girls group (%)	Boys group (%)	Total (%)
Successful in all kinds of creativity (1)	2.2	2.8	5.0
Successful only in verbal creativity (2)	4.5	5.5	10.0
Successful only in non-verbal creativity (3)	4.0	5.0	9.0
Show stereotypical results (4)	17.8	38.1	55.9
Show the lowest results (5)	7.3	12.8	20.1

As can be seen from Table 1, the majority of students (76%) showed stereotypical and low results of creative activity. Thus, the development of creative talents is the most urgent task of modern education.

Then the relationship between the components of creativity and students' personal characteristics was also analysed. We found out that success in creative activities prevents such personal characteristics as elevated levels of trait anxiety and low mood, which is a further confirmation of the importance of the emotional sphere in the process of creativity. A creative personality is characterised with the qualities of independence, prevalence of internal locus of control, mental balance, emotional and social maturity.

Thus a creative person is not indifferent, possesses a deep inner world and is persistent in achieving goals. Our sample suggests that a high level of intelligence correlates with a high level of creativity and social activity.

Third stage

On the grounds of these results, we developed the curriculum "Psychology of creativity". The curriculum was tested over a period of three years (1998–2001). After successful testing, the curriculum "Psychology of creativity" was integrated into the practice of teaching in SPbSUACE.

Sequences of learning materials, exercises and tasks are structured in accordance with the principles of the curriculum. The basic principles are:

- integrated approach;
- systems analysis;
- focus on each person;
- professional development;
- development of creative skills and creative thinking.

The main sections of the curriculum "Psychology of creativity" are the following:
- Introduction to the psychology of creativity (students learn general issues of the psychology of creativity).
- Theory of creative development (practical section of the curriculum).
- Creativity in different spheres of human life (opportunities for practical application of psychological knowledge in various spheres of activity).

While studying "Psychology of creativity", students not only learn the theory, but also to learn to solve problems, develop projects, and perform a variety of exercises that develop creativity.

CONCLUSION

The curriculum "Psychology of creativity" in a technical university is innovative because it does not focus merely on the development of technical creativity and develops complex abilities, thus facilitating greater creativity in various fields. Key components of the curriculum are established in experimental research.

The experience of teaching "Psychology of creativity" suggests that students' motivation for learning increases, they develop the need to use psychological knowledge in their professional, personal and everyday life; this way, a psychological culture begins to develop. Knowledge of psychology and creative capabilities enhance students' innovative potential. Institutional changes made by the course to the educational process contribute to the development of students' personalities and enhance their current and future professional potential.

REFERENCES:

Artemyeva, V. A. (2004a). Evaluation of a program for training in creativity in a technical university. In *Proceedings of the Conference of Strathclyde Centre for Research into Interactive Learning*, 5–7 April 2004 (p. 50). Glasgow: Glasgow LTSN Psychology.

Artemyeva, V. A. (2004b). The teaching of 'psychology of creativity'. *Australian Journal of Psychology, 56*, 157–158.

Barron, F. (1969). *Creative person and creative process*. New York: Frenk Barron.

Burt, C. (1962). The psychology of creative ability. *British Journal of Educational Psychology, 32*(3), 292–298.

Cattell, R. B., Eber, H. W., & Tatsuoka, M. M. (1977). *Handbook for the sixteen personality factor questionnaire*. Illinois: Champingn.

de Bono, E. (1991). *Handbook for the positive revolution*. London: Penguin Books.

de Bono, E. (1999). *New thinking for the new millennium*. New York: Viking Press.

Guilford, J. P. (1968). *Intelligence, creativity and their educational implication*. San Diego: Knapp.

Альтшуллер, Г. С., & Верткин, И. М. (1990). *Рабочая книга по теории развития творческой личности* [Workbook on the theory of the development of creative personality]. Кишинев: МНТЦ «Прогресс».

Ананьев, Б. Г. (1980). *Избранные психологические труды. Личность. Субъект деятельности. Индивидуальность* [Selected psychological works. Personality. Stakeholders. Individuality], 1 (с. 158–160). Москва: Педагогика.

Артемьева, В. А. (2001). *Исследование компонентов творческой деятельности студентов технического вуза: дисс. канд. психол. наук* [Research of the components of technical university students' creative activity: Candidate's thesis in psychology]. Unpublished dissertation. Saint Petersburg State University of Architecture and Civil Engineering, Saint Petersburg, Russia.

Богоявленская, Д. Б. (1985). *Интеллектуальная активность как проблема творчества* [Intellectual activity as a problem of creativity]. Ростов на Дону: Издательство Ростовского университета

Выготский, Л. С. (1987). *Психология искусства* [Psychology of art]. Москва: Педагогика

Тутушкина, М. К., & Артемьева, В. А. (2005). Становление психологического образования в техническом вузе [Formation of psychological education in a technical university]. *Вестник гражданских инженеров, 1*(2), 102–106.

Sustainability - a challenge and a design issue in the era of interior textiles

Jaana Kärnä-Behm

University of Helsinki, Finland

ABSTRACT

In this study the objective was to examine recent research, development and design projects concerning sustainability in the era of interior textiles. The data of the study consists of published research articles and is examined by means of content analysis. First, the concept of home and home-making as a remarkable interior/space of using these textiles is discussed. After that, definitions of interior textiles are introduced and a negotiation between function and aesthetics in them found. As a result, it is found out that within the era of interior textiles, considerable amount of research and development is done, for instance in new materials and interactivity. Along with this progress, sustainability is found as one essential context of recent research and development. By introducing and analysing recent research and design projects concerning interior textiles, the article concludes with some important standpoints in the relationship between textiles and their sustainable future.

Key words: textile research, textile design, interior textiles, content analysis, sustainability

HOME AND HOME-MAKING

Interior textiles are used in both domestic and public interiors. It is usually thought that, when a public space is generally open and accessible, a domestic space is more private and enclosed. It is anyway interesting that, in contemporary consumer society, home, while being the extender of self, is more and more understood as a public presentation of ourselves: home interior is determined by an idea that the dwelling and how we have decorated our home is also a message of us as consumers and choice makers (Kärnä-Behm, 2011).

Home is an ambiguous and fluid notion. It can be paradoxically approached both as a bounded space and anchor and a spatially open structure that changes over time (Johansson & Saarikangas, 2009). Home exists in relation to the public and social world, its norms and agreements, although it has been often approached as the scene of a person's private life, "one's own corner in the world" (Johansson & Saarikangas, 2009, p. 11). Home has wider meanings than a house or a building. It means as much, or even more: the social relations, memories, surrounding environment, landscape, nature, and language (Johansson & Saarikangas, 2009). Home is not an enclosed and clearly private space – although often conceptualised as such – instead it is in continuous interaction with the outside world and its cultural and shared meanings, agreements, and habits (Johansson & Saarikangas, 2009).

Houses and dwellings are transformed into homes through the acts of habitation and home-making, as well as through the sense of belonging created in these processes (Johansson & Saarikangas, 2009). Home is also connected to age, gender and economic position as well as individual fancies and choices (Vilkko, 2010). Homemaking is an ongoing spatial and temporal process; it is an active and affective work that takes time. Homes are constantly made and remade and their meanings re-negotiated; homes do not have an essential meaning, in advance of its making (Johansson & Saarikangas, 2009; Vilkko, 2010). During the lifetime one can have several homes, parallel homes or even be homeless (Vilkko, 2010). Home is also something that a person is able to lose, for instance, through blaze or divorce and, as such, is not easily replaceable (Vilkko, 2010).

DEFINITIONS AND USE OF INTERIOR TEXTILES

According to Pegler (1983, p. 192–193), textiles in interiors are "woven or unwoven materials used for upholstery, drapery, wall coverings, and so on. They are made of natural fibers (wool, silk, cotton, linen), synthetics (rayon, nylon, Dacron and so on) or in combinations of natural and synthetic fibers". The definition needs to be specified with the space in where the textile is going to be used (public or domestic), taking into account the aesthetic issues involved. According to this, an interior textile is an artefact in a public or domestic interior made of textile materials and used for functional and/or aesthetic purposes.

The term 'interior textile' is often used as an alternative to the term 'home textiles' which sounds a little bid old fashioned. However, it does not mean the same. Interior textiles include textiles of vehicles like automotives, trains and airplanes, e.g. textiles for

seating, ceiling or cover material of indoor panels. Architectural indoor textiles are also included into the term, as far as they are used indoor. Examples are acoustic damping textiles or screening fabrics for sun protection in any kind of building (Büsgen, 2012).

What functions do interior textiles have? Interior textiles humanise our interior spaces because of their pliant responsiveness to our needs. Fabrics make us more comfortable; they control light coming through windows and afford us privacy without solid walls. They insulate against extreme heat and cold, and they absorb noise. Interior design fabrics are easily removed and cleaned and serve as coverings for tables, chairs and beds as well as being upholstery pleasant to touch. Compared to other interior materials, fabrics can readily be used both in width and length. They can be folded, draped, pleated, sewn or glued together. They are also easily removed and bring a cost-friendly change in the look of the room or space (Faulkner, Faulkner, & Nissen, 1994).

Textiles in interiors are noticed because they appear in quantity through the home and can also be brightly coloured or patterned. Beyond their everyday usefulness, fabrics have two important functions. First, they make their own visual and tactile contributions to the home; second, they can be strong unifying elements within a room and between rooms (Faulkner et al., 1994).

Products made for interiors in the textiles industry go through various stages, from weaving to finishing according to the use of the product. Some textiles are specifically produced for use in private or residential interiors such as mobile homes, apartments, and other private residences. Others are specifically designed and constructed to withstand the higher levels of use in public or commercial interiors – stores and shopping centers offices, schools, hospitals, hotels and motels, restaurants, libraries, theatres and other public buildings (Yeager & Tester-Justice, 2000).

The many interior textile products may be divided into four broad categories, namely, upholstered furniture, window and wall coverings, soft floor coverings and cushions, and household and institutional textiles. Household textiles used in residential interiors include bedding, towelling and such tabletop accessories as napkins, tablecloths and runners. When such products are designed and selected for use in hospitality or care-type facilities, they are referred to as institutional textiles. Among the assortment of products included in each of these categories, there are differences in fibre content, yarn features, fabric structure, colour styling, finishes and product design (Tester-Justice & Yeager, 2000). Textiles which are addressed by both home and public interiors are carpets, curtains, furnishing textiles, tablecloths, textile tapestries, blankets, bedding products and mattress ticking (Büsgen, 2012).

Interior textiles are also made by hand at home and at clubs. When a young person establishes his/her own home, it is typical for the mother or the grandmother to give some textiles from home as a gift (Räty, 2002). It is also usual that some interior textile will be made during the handicraft lessons at school as a future contribution to one's own home (Räty, 2002).

The meaning of interior textiles changes and today it is often more focused on a technology-related viewpoint, which means that interior textiles include functionality (like resistance, E-shielding, thermal compensation or light emission) and this aspect is frequently combined with decorative purposes and design (Büsgen, 2012).

FUTURE CHALLENGES AND POSSIBILITIES IN THE DESIGN AND RESEARCH OF INTERIOR TEXTILES

Next, future challenges and possibilities in the era of interior textile are considered based on the resent research. The method used is content analysis. Content analysis is here realised as a research technique for making replicable and valid inferences from data to their context (Krippendorff, 1990). First, a look at the trends and new applications of textile design connected with digital technology is taken. The era of textiles is challenging when it comes to environmental friendly products and production. The situation with interior textiles is anyway a little more comforting than with the so-called fast fashion era. In the end, projects and research promoting sustainable development in the era of interior textiles are introduced.

New technologies bringing new functions and new design

The recent development in the field of textiles is to show how technical possibilities and their applications in fashion, architecture and interior design have redefined textiles as a uniquely multi-disciplinary field of innovation and research. As today's textiles change the way the human body is experienced and the urban environment is constructed, they reveal their capacity to transform our world dramatically (Quinn, 2009).

Some exciting exchanges are currently taking place between textiles and space. At a time when mobility, mutability and multi-functionality are becoming key considerations for urban interiors, textile designers are responding with fabrics that feature some of the most radical innovations in design today. Textiles are forging new relationships with the built environment, and the projects that result are striking showcases of the unique textures and tactilities that fibre-based forms can have (Quinn, 2009). The new breed of interior fabrics can no longer be described as just pretty patterns; they are hi-tech devices that transcend the decorative altogether. As digital technology equips fabrics with interfaces capable of transferring surface information, a whole new range of visual and structural effects begin to emerge (Quinn, 2009).

The development of smart carpet called 'SensfFloor' started already in 2001, but the commercialisation of the carpet did not happen until May 2010. SensFloor can operate mechanisms such as automatic doors, alarm devices, lights, heating or traffic counters. Automatic alarm triggering for people in hospitals, rehabilitation clinics or foster homes is one of the most attractive applications because the staff can be alarmed for help, for instance, when dementia suffers try to leave or when bedridden patients try to get up unassisted (Büsgen, 2012).

There have been a large number of projects aimed at creating luminescence of interior textiles. For instance, LED-based products of Philips in the Netherlands and the neon light wallpapers of Astrid Krogh (Büsgen, 2012). Shape weaving is a 3D method originally developed to produce seamless fibre reinforcements for composite parts, getting the required geometry directly by a special weaving procedure. Several projects transferred this to interior textile products such as automotive carpets, indoor panel covers or textile-elements-based dash boards (Büsgen, 2012). In the future, seat covers may also sense the size and weight of an occupant to adjust the airbag activation and the blow up volume individually (Büsgen, 2012).

Sustainability and the era of textiles

Consumers and professionals in many industries are becoming more conscious of environmental concerns, particularly as they relate to textiles. In developing an environmental awareness, consumers and manufacturers are voluntarily reducing the consumption of components and finished goods, reusing materials, and recycling resources. Members of various industry sectors are seeking to reduce the use of chemicals in processing in order to minimise the subsequent negative effects on indoor air quality. (Yeager & Tester-Justice, 2000).

Environmental damages caused by the textile industry occur in two stages. First, there is the raw material manufacturing stage. A notable example would be the use of harmful formaldehyde-based resins for improving the wrinkle resistance of fabric. Second, it is the post manufacturing stage. This category includes problems such as waste disposal and generating huge quantities of non-biodegradable waste (Das, 2009).

Products may carry a reference to a green standard to attract environmentally conscious consumers. Since there are no regulations concerning the labelling for environmentally friendly products or what constitutes 'green', consumers must evaluate competing products to decide the validity of manufacturers' claims (Nielson, 2007). It is also noticed that the growing demand for eco-friendly products from an ever-increasing segment of the consumer population, whether out of genuine awareness or as a result of politicised propaganda, has kicked off a booming business in "green products" (Das, 2009, p. 113).

When it comes to interior textiles, they are not subjected to rapid changes, as are textiles in the apparel markets which have to follow seasonal fashion trends to be successful (Büsgen, 2012). The interior textile market offers longer lasting products, which may be improved over time, but not changed completely several times a year. Quality standards of long lasting textiles are much higher than those of short term use textiles and this leads to high level of product value (Büsgen, 2012).

Research and design projects with the aim of sustainability in interior textiles

Textile manufacturing companies today are investigating innovative eco-friendly products and processes. Next, some projects which aim at sustainability in textile design or in their production process are introduced.

In sustainable textile design, there are designers who use recycled materials while others prefer organic fabric such as hemp, bamboo, Ingeo and raw silk. Popular inorganic choices include biodegradable textiles, recycled plastics and renewable melt-processable fibres that can be woven into fashion fabrics and made into nonwoven interior textile. Some manufacturers are developing polylactic-polymer technology that will make it possible to create fibres from renewable agricultural resources, such as corn and sugar beets (Quinn, 2010). Also raffia, aloe, abaca, nettle and kapok are plants used in sustainable textiles. The growth of these plants does not involve pesticides, but they exist in small quantities that do not permit mass consumption (Frumkin & Weiss, 2012).

Within the context of surface finishes and design, there is now AirDye technology (using air instead of water as a medium of dying), bio-degradable sulphur dyes (free of any amines, heavy metals or halogens), high-end eco-textiles (using organic dyes or oxygen-based bleaching), and recycled polyester "Repreve" manufactured from 20 per cent post-consumer and 80 per cent post-industrial polyester (Das, 2009).

Biomimicry is a science which studies animals and plants, their models, systems and procedures, nature's way are being adapted for human use. Nature's ability to provide sustainable solutions is recognised and applications are developed also in textile science. A fabric called 'Morphotex' is an example of a colourful textile made without using any dyes or pigments at all. The fabric is named after the South American morpho butterfly. Although richly coloured, the butterfly's wings do not actually contain any pigment. The insect's wings are covered by microscopic scales that reflect light in a manner similar to a photonic crystal, angling and reflecting it in a way that reflects the wavelengths found in ambient light. A Japanese fibre company has used nanotechnology to mimic the varying thickness of the butterfly's scales, and created laminated chromogenic fibres as a result. Morphotex is also completely recyclable without producing any contaminated liquid waste in the process (Quinn, 2010).

One example of using recycled material in textile design is the so-called 'Sonic Fabric'. Sonic Fabric is a textile which is composed of 50% recycled audio tape and 50% polyester. This fabric, used in a range of fashion and textile applications, emits sounds when a tape head is drawn across the surface (Frumkin & Weiss, 2012). Sustainability is also evidenced in Designtex's project Bottles to Bags. Fabric used in bags is 100% post-consumer recycled polyester produced from recycling of plastic bottles (Frumkin & Weiss, 2012).

Sustainability can also be promoted through re-thinking of the functions of textiles in interiors as it is done in IT + Textiles project. IT + Textiles is a design research programme led by the Interactive Institute and Newman Technologies in collaboration with academic and industrial partners in Sweden. In this research, new usability and the relationship between theory and practice have been sought between textile and (information) technology. One of the projects was "The Energy Curtain" which is a window shade woven from a combination of textile, solar-collection and light-emitting materials. "The Energy Curtain" functions by capturing energy converted from sunlight during the day and then activating this energy to give light at night. If the curtain is pulled all the way down during the day, then the maximum amount of energy is stored for use at night (Ernevi, Jacobs, Maze, Muller, Redström, & Worbin, 2005). Energy is saved when this curtain can produce part of the energy required lighting the room.

DISCUSSION AND CONCLUSION

In this article, recent research, development and design projects concerning sustainability in the era of interior textiles were analysed and discussed.

It is generally supposed that natural agricultural fibres (e.g. cotton, linen, jute) are the eco-friendly choice in textiles. From a sustainable perspective, the selection of natural agricultural fibres is anyway complicated by the frequent use of pesticides, chemical fertilisers or significant water consumption in the growing process (Frumkin & Weiss, 2012). It is even proposed that the whole green system economy needs a new kind of value base in designing, manufacturing, business and consumption (Niinimäki, 2011). The transition towards sustainability needs a focus change from the quantity of goods to the quality of human knowledge, creativity and self-realisation as measures of development, and furthermore, quality of life, human solidarity and ecological sensibility should guide the transition process.

The most influential ways to change the industrial system towards a sustainability path are government laws, legislation and regulations that impact producers' responsibility (Niinimäki, 2011). The situation is bipartite when sustainability issues are broadly advocated but, at the same time, for instance, cloth companies present sixteen collections a year, sustaining consumers' interest by introducing new garments at intervals of only a few weeks (ibid.). Also it is estimated that in Finland the consumption of clothing and footwear increased by 23% between 2006 and 2010 (Niinimäki 2011). So the situation is more than contradictory when, in spite of increasing green values and actions to assist sustainability issues, this fast fashion marked by its low quality as well as very short product life span is increasing its share on the market. In this article, it was however argued that when it comes to interior textiles, the situation is more comforting than in fast fashion markets: the quality standards of long lasting textiles are much higher than those of short term use textiles which also lead to higher level of product value.

Ecological thinking can have a very deep significance in interior textiles made through a craft process. In the study of design processes of bedclothes, a significant link was discovered between craft materials and ecological values combined with recycling: students who used recycled craft materials (materials from flea markets or from grandparents) wanted to sustain memories, for instance, of a relative. In the design process of a craft product there is also something more than simply using recycled materials for ecological reasons. A designer wants to personify the product with the use of signified materials (Kärnä-Behm, 2010). It is also argued in the research of home textiles that uniqueness is one of the values promoting sustainable development in textiles (Niinimäki, 2011). Textile design has the potential to connect to customer's deep emotionally meaningful memories, profound and poetic human needs for modern design. This is one way to achieve emotionally durable textile design and extend the lifetime of textiles.

REFERENCES:

Büsgen, A. (2012). New product development in interior textiles. In L. Horne (Ed.), *New product development in textiles. Innovation and production* (pp. 132–155). Cambridge: Woodhead Publishing.

Das, T. (2009). Surface design of fabrics for interior textiles. In T. Rowe (Ed.), *Interior textiles. Design and developments* (pp. 91–118). Cambridge: Woodhead Publishing; Boca Raton, FL: CRC Press.

Ernevi, A., Jacobs, M., Maze, R., Muller, C., Redström, J., & Worbin, L. (2005). The energy curtain. In J. Redström, M. Redström & R. Maze (Eds.), *IT + Textiles* (pp. 91–97). Helsinki: Edita.

Faulkner, R., Faulkner, S., & Nissen, L. (1994). *Inside today's home*. Fort Worth: Harcourt Brace.

Frumkin, S., & Weiss, A. U. (2012). Fabrics and new product development. In L. Horne, (Ed.), *New product development in textiles. Innovation and production* (pp. 65–79). Cambridge: Woodhead Publishing.

Johansson, H., & Saarikangas, K. (2009). Introduction. Ambient home. In H. Johansson & K. Saarikangas (Eds.), *Homes in transformation. Dwelling, moving, belonging* (pp. 9–38). Helsinki: Finnish Literature Society.

Krippendorff, K. (1990). *Content analysis. An introduction to its methodology*. Newbury Park: Sage Publications.

Kärnä-Behm, J. (2010). The bed as a cultural text and as a design item. In E. Ropo, H. Silfverberg & T. Soini (Eds.), *Toisensa kohtaavat ainedidaktiikat* [Subject didactics meeting each other] (pp. 179–190). Ainedidaktinen symposium, 13 February 2009. Tampereella: Tampereen yliopiston opettajankoulutuslaitoksen julkaisuja.

Kärnä-Behm, J. (2011). Preface. In J. Kärnä-Behm (Ed.), *A book of interiors. Openings in research* (p. 3). University of Helsinki. Home Economics and Craft Studies Research Reports. Helsinki: Unigrafia.

Räty, L. (2002). *Interior textiles at homes of three generations*. Unpublished Master's thesis, University of Helsinki, Helsinki, Finland.

Nielson, K. J. (2007). *Interior textiles. Fabrics, applications & historical styles*. Hoboken, NJ: John Wiley & Sons.

Niinimäki, K. (2011). *From disposable to sustainable. The complex interplay between design and consumption of textiles and clothing*. Unpublished doctoral dissertation, Aalto University School of Art and Design, Helsinki, Finland.

Pegler, M. (1983). *The Dictionary of interior design*. New York: Fairchild Publications.

Quinn, B. (2009). *Textile designers at the cutting edge*. London: Laurence King Publishing.

Quinn, B. (2010.) *Textile futures. Fashion, design and technology*. Oxford: Berg.

Vilkko, A. (2010). Kohteena koti [Home as an object]. In A. Vilkko, A. Suikkanen & J. Järvinen-Tassopoulus (Eds.), *Kotia paikantamassa* [Locating home] (pp. 11–34). Rovaniemi: Lapin yliopistokustannus.

Yeager, J., & Tester-Justice, L. (2000). *Textiles for residential and commercial interiors*. 2nd ed. New York: Fairchild Publication.

The multiple aims of arts education to support sustainable development

Kimmo Lehtonen

University of Turku, Finland

Antti Juvonen

University of Eastern Finland, Finland

Heikki Ruismäki

University of Helsinki, Finland

ABSTRACT

In this article, we focus on multiple aims of arts education through a historical overview. We explore the beginning of arts education and the social connections behind it. The suggestion for a resolution in European Parliament (n.d.) underlines the role of arts and culture education as strengtheners of national identity and teaching people to appreciate the diversity of culture in heterogeneous and multicultural societies. The suggestion for a resolution does not define arts education specifically; it rather uses the conception as if it were clear to all actors. The aims of the resolution also target the understanding of different cultures in which arts offer excellent possibilities. There is a connection to art therapy where artistic achievement strengthens self concept, identity and communality. Flexibility and ability to change are connected to creativity, which is essential to the existence of arts. We see it necessary to develop new theories for arts education, and in this article we explore the opportunities for doing it. The conception of art is hidden in its historically changing constellations which naturally resist being defined. We explore the essence of arts education as a part of sustainable life and development.

Key words: arts education, historical overview, diversity of culture, art therapy, self conception

INTRODUCTION

The roots of the arts education are related to the thoughts of the Romanticism era, which differed radically from the ideal typical to the time: intelligence and progression. During the Romanticism Arts, imagination and emotions were appreciated, but progress was slightly doubted. At that time also human tragedy was understood as it formed an opposite to the life control based on reasoning (Hilpelä, 2009). The same kinds of opposite pools still affect on the division of school subjects in the compulsory education school today, where the arts and skills are often seen as the opposite for the academic subjects. The influence of the Romanticism continued in 20th century life philosophy, represented by Friedrich Nietzsche and William Dilthey. In this philosophical ground grew psycho-analyses, reform pedagogy and pedagogy of humanities.

Arts education has strong connections to critic towards the society. When arts education was being planned in the beginning of the 20th century England, the critic pointed mainly to the industrialism focusing on the economical, cultural and educational faults in it. The mechanising of the work by industrialism had joint the workers as parts of the machine and rejected them to execute their creativity. At the same time and due to same reasons, the improvement of the working class living standards and socialistic movement were born. For these reasons it is no wonder that some social and socialistic elements can still be seen in arts education movements today (Huuhtanen, 1984; Taneli, 2012).

ARTS PROVIDE FLEXIBLE INTEGRATION

According to Tarasti (1981, p. 409) arts education has been a "blue-eyed boy" of the Finnish culture people for a long time – an enterprise in which everyone wants to be taking part, but only few realise what it should include. Arts are seen to increase well-being, which makes people often react to them positively without reservations. Many ideal targets are also connected to arts without thinking more precisely how these, in itself warmly agreeable aims and research themes, could be brought under the same roof.

Arts education as a science is a complicated filed of research which reflects the latest trends, and whose question in focus is how to integrate, standardise and harmonise this wide and heterogeneous area. Arts education must live up-to-date and keep windows open to every direction because the mere breathtaking development of information technology offers Arts unparalleled new possibilities. Art has also widened to institutions lately (for example into hospitals and nursing homes), where it didn't earlier belong. For this reason arts education has close connections also to lifelong education and learning as it covers all age groups from a baby to grandfather's age. Also development of an effective enterprise-education and integrating art as a part of the society forms an important challenge especially to the profession studies.

A suggestion for a resolution from EU parliament (2001) underlines the role of arts and culture education as strengtheners of national identity and teaching people to appreciate the diversity of culture in heterogeneous and multicultural societies. Also fast and unpredictable social changes require flexibility, creative integration and skills of innovation and communication. The resolution mentions arts- and culture education as

synonyms and underlines the togetherness of science, arts and technology. Making art is seen to require mastery of many skills, knowledge and materials which also belong to the development of science and technology. The committee unanimously discovers that arts education in the 21st century must create closer relationship with education, culture and communication technology.

Aalto University, which was built to be the flagship of the Finnish University community, has a business idea, which is made according to these guidelines and principles as it aims to provide creative economy through joining together arts, technology and economy. In this way, the relatively instrumentally understood arts education is integrated as a part of a project representing profit responsibility and economical efficacy. The thought, in itself, is not new because a German art educator Konrad Lange (1855–1921) explored aesthetics from an economical point of view analysing, among others, the ways of action which could help arts in making the best possible economical profit (Lange 1901; Taneli 2012). Also the current market-liberalism has lifted creative economy and economical interests of arts on the 'top of the temple'. No one is shamed if art sells and brings profit to the artist.

ARTS EDUCATION DEVELOPS CREATIVITY

Creativity is a psychological process bearing the linking of new ideas, thoughts and emotional pictures so that the result is more multidimensional that the sum of the original elements. Creativity includes more than mere technical skill, artistic imitation ability or ideological handwork. A creative artefact is original and unique because instead of ready thought models it shows the imperfection, deficiencies and contradictions typical to the creator (Hägglund, 1984).

The suggestion for a resolution does not define arts education specifically; it rather uses the conception as if it were clear to all actors. By the first thought this might be the feeling, although defining arts education is a complicated question where different choices lead into different consequences. As we focus on arts education, we must turn our eyes also to its close conceptions which are aesthetic education and cultural education.

There should not be any doubt about the noble aims of arts education; as we see it is clear that Finnish discussion about the task has also concentrated on forming the ideal aims for the subject. The noble aims are easy to accept, because the discussion becomes difficult when trying to solve the practical questions about arts education: how big resources, what kind of environment is it given, what does the subject focus on and what kind of teaching does quality arts education include? It is clear that arts education is not any kind of magic word which automatically increases the life qualities of the students. Quite the opposite – arts education which is not correctly executed pulls down the pupils self conception and stops the art as a hobby causing disappointments which, at their worst, may lead to permanent repulsiveness to arts. These kinds of negative, hidden effects are, sad to say, also familiar in physical education as well as in other arts and skills at school.

The aims in the resolution target also in understanding different cultures, in which arts offer excellent possibilities. There is a connection to art therapy where artistic achievement strengthens self concept, identity and communality. Flexibility and ability

to change are connected to creativity, which is essential to the existence of arts. According to Tarasti (1981), creativity research is connected to arts education in at least two ways (1) when research is concerning artistic creativity, background factors of it or the creative process itself and (2) when creativity education is seen as a part of aesthetic education, when it also includes, in addition to general arts education, tuning of the aesthetic reality-relationship. This relationship is contradictory because the differences between general arts education and aesthetic education based on arts education can be seen in the substances of the subject.

It might well be that the relationship between creativity and aesthetic education is intuitively clear, but on the other hand, the task is both scientifically as well as conceptually ambiguous. For this reason the research of creativity as a part of artistic expression is meaningful. Those theories about creativity which explore creativity disconnected from artistic activities can offer arts education only little interesting information. Creativity can be defined both as a state of mind as well as activity. It is about an artistic process where there is a balance between experience and activity and also between existence and achievement, which releases a human being from the everyday tasks in a way which is not escape from reality.

To be able to achieve artistic work, a human being must first learn a certain amount of technique and rules of achievement without which there cannot exist any kind of creativity. The creative imagination means always consciousness of something, for which the most remorseless structuralist cannot claim an artistic structure to be mere structure without contents. This way we can understand arts education, which belongs in educational sciences as a major conception – an umbrella under which the subject specific pedagogies (music education, visual arts education, media education, etc.) are situated. The point of view of arts education is important for upbringing a whole human being because the receiver of art and experiencing art there is always an entire human being. A trailblazer of Finnish educational philosophy, Juho Aukusti Hollo sees aesthetic education very closely connected to all education (Hollo, 1959).

AESTHETIC ATTITUDE BRINGS BEAUTY INTO HUMAN LIFE

Adorno (2007) discovered that nothing concerning art is anymore self-explanatory, neither the art itself nor its relationship with the society, not even the relationship between the art and human existence. According to Adorno (2007), the conception of art is hidden in its historically changing constellations which naturally resist being defined. According to him, different fields of art cannot be oppressed to the major conception of art without breaking their identity. Adorno (2007) argues that general arts education includes purpose-oriented and ideological elements. Positivistic theories aim to define art attributing to it assignments and characteristics which do not actually define art because they rather act as legitimacy of different hidden ideological pretensions. This way the discussion about legitimacy of general wide-range arts education gets involved with different ideological pretensions which actually have nothing to do with art itself. Understood this way, arts education represents, in addition to arts, also elements which are strange to it and even contradictory to it.

Characteristic of Adorno's (2007) dialectic is that he presented also negation of his former thought because, according to him, every drawing of borderlines draws back the part which has been lined out, even more intensively. The argument seems to be incisive because it brings in mind the border lining which occurs every now and then between entertaining and artistic music. It includes a problem which would probably not be even noticed without doing the lining out. The same way, the discussion about the primary nature of wide-ranging arts education awakens passion in supporters of subject specific education and also the opposite. In this way of looking, the dialectic starting point creates an excellent base for the discussion where the alternation of theses and antitheses creates a base for synthesis (see also Kuorikoski, 2007).

The relationship between arts education and its subspecies is tensioned because, according to the critics, the supporters of the wide-range arts education lack subject specific know-how, which is the reason for underlining the general arts education. The thought is not new, it was already presented by a well-known arts education theoretic Goethe, who in the novel Wilhelm Meister (1917/2000) let the hero give up his vocation for theatre because of his limited abilities and started to speak up for general aesthetic education (see Tarasti, 1981). The solution to the quarrel may be sought in the aesthetics which, as a wider conception than the art, is important especially because of its defragmenting nature. Aesthetics have strong connections to emotions and imagination, and it is easy to discover, retelling Hollo, that all education can be characterised through certain aesthetic orientation (Taneli 2012).

Aesthetics is philosophy which concerns all areas of arts the same way. According to Wilenius (1982), aesthetic character is a human educational property which is connected in all feeling, sensing and imagination. Through an aesthetic attitude, a human being understands that all human beings are valuable and unique for which meeting human uniqueness is widely thinking an aesthetic experience. Aesthetic character is closely related to empathy which can be characterised as a comprehensive psychic quality with many-sided positive effects on different areas of human life.

We may ask, should we instead of arts education rather speak about aesthetic education where different areas of arts would be connected by a common pretension for supporting aesthetic education which aims for a complete, happy and harmonious human being (Taneli, 2012). Wide-ranging arts education can be justified by noticing that all different areas of art are based on the inborn needs of creation and self-expression of a human being. In addition to that, art also wells from the same symbolic soil of a human psyche basing on the use of similar structures, expressions, rhythms, shapes and colours which in all areas of arts are getting their significant expressions. This is also seen in the fact that artistic achievement has always taken place in all times and all cultures.

Arts education can be seen as a continuum, where on the one end there is a world embracing wide-ranged general arts education and on the other there is a narrow focusing on only one subject of art (and even more narrow: concentrating on one style of the art field). Wide-range makes the field of arts education heterogeneous and difficult to control while narrowness underlines the borderlines leading to constricted definitions, stiff attitudes and turf guard keeping. Different sectors of arts are also different from each other on this score. In visual art it does not make a big difference if a person likes sculpture, visual art, or expressive or abstract paintings. Music makes the difference in this score:

for instance, the borderlines between artistic music and light music are still debated in the field of music culture.

The assignment for arts education is to help students develop aesthetic attitude through which they can see beauty also outside the arts and understand different artistic ways of expression. A mind tuned in an aesthetic mood can see beauty everywhere, but an insensitive mind does not find it anywhere. A student should also acquaint him/her self in different areas of arts as deeply as possible, he/she should feel the experiences they offer and learn to use their ways of expression. Successful arts education leads at its best to a lifelong enthusiasm and hobby which is based on the enjoyment art making offers. A well-known arts education pedagogue Lichwark (1852–1914) specifically underlined spreading as widely as possible the enjoyment rising from art as a hobby. According to him, the artistic amateurism is an important well of happiness and a source of endless significant meanings where everyone can find rousing elements for just his/her own personality.

ARTS EDUCATION DEVELOPS EMOTIONAL LIFE

According to Hollo (1959), the meaning of aesthetic education is making emotional life more sensitive and enrichment of imagination so that from under the gloomy surface of reality there will arise an aesthetic reality which will be deepened by emotions and burnished by imagination. Hollo wrote that education is also aesthetic by nature where the educator shapes the learner like an artist, helping him/her to grow into the person which his/her own facilities and destinations have set. Education is a creative activity where the special characteristics for both sides of the growing process can be seen in natural strengths and inadequacies of partners (teacher and learner). Arts education which acts as an instrument for aesthetic education fundamentally aims at developing imagination and ennobling emotions (Taneli, 2012). Imagination is one of the key elements of enjoying the everyday life and the world, as well as a key factor to mental well-being. A human being rich in imagination never ends in a blind alley as the imagination offers them always new solutions and opportunities.

Arts education is nourishing an emotional life because arts raise emotions which are learned to be experienced, controlled and shared. At school, common work reduces competition and prejudices directing thoughts towards a common target where different pupils all bring their different contemplations. Arts and skills balance the information-centeredness and offer experiences of success also to those pupils who are not good in theoretic subjects. Arts also brings additional value to many different school subjects where, for instance, the drama might help pupils identify with subjects and substances which otherwise would seem repulsive. Also adult education and especially elderly di-rected geronto-pedagogy include lots of new possibilities where arts can easily be inte-grated in many substances (Lehtonen, 2011).

Because the substance of specific arts education is indispensable, we must ask how and at what stage different fields of arts should be integrated. Often the integration is easy because a skilful teacher can easily connect arts in all their teaching when meaningful learning experiences also bring inspiring art experiences. It is most important to focus

on teacher education where the ideas and experiences expire to the field of education widely. The situation in teacher education is a little different from the school because arts and skills have traditionally been taught separately and sometimes the subjects have been competing with each other of resources, classrooms and also students which do not support cooperation. In this respect, the mutual confidence and trust are the elements which create the basement of collaboration. Also the right time in starting the integration is important, because integration started too early makes learning superficial and shallow as the structure takes the place of substance abilities which remain narrow.

The question of substances is essential because arts education must define the central substances itself and offer a believable justification for the selection. Culture theorists speak about the 'memory of the culture' which means that each culture has the means to convey its significant artefacts from one generation to another. This way the culture also commands the focus of the support and what it leaves to be forgotten, and at the same time, it defines its own arts education and its substance. Arts education might remain stiff reiterating the old, or it might rush headlong towards novelties. In this way the focus of arts education is located in between innovation and tradition. Arts education also has to be able to separate the wheat from the chaff as some artefacts and texts are surprisingly dynamic and robust, while the others quickly sink in the subconscious warehouse of the culture (Tarasti, 1981).

Art may sometimes also grow too strongly around the institutions which mean isolation in big institutes or building great imposing sceneries. It seems that in Finland there is a special need for building flamboyant buildings which attract rich culture tourists promoting the picture of Finland at the same time. In this respect, the assignment for the arts is to keep the creative economic wheels rolling. It is distinctive that, for instance, in the public debate about Guggenheim Museum project the main arguments have been handling merely economical factors and the money the tourists might start bringing to Finland.

CULTURE AS A PART OF EVERYDAY LIFE

What kind of arts education is really needed and how deep should it reach in different areas of arts? Here we might refer to a real trailblazer of the Finnish education philosophy Juho August Hollo (1885–1967) whose thought about 'escorting the learner to grow' suits perfectly. According to Hollo (1959), the assignment of the teacher is to 'escort' pupils long enough after which they start acting independently according to their own facilities and destinies. The education should be interactive, unique, unforced and respectful towards the learner, and it should support learner's individual opportunities of growing and learning covering the whole life. The most important task for an art educator is to entrench a wide and unprejudiced attitude towards life, arts and culture. Because the art educator should lead the pupils to culture, we should ask what culture is and what the place of a human being, carrier of the culture, is in its different structures.

In arts education, the culture should be defined as loosely as possible: culture is what people do in their everyday life and what they see from their own point of view as culture. Culture is artistic communication: singing, playing musical instruments, movies, paint-

ing and acting among others. The fact that culture is being evaluated and valued from outside does not undo the fact that the hard nuclear and the aim of the arts education is an individual value-experience which is the requirement of existence of a culture. A deep and broad enough front of people who love arts is the lifeline of survival and development of a culture. This means that education must support student's own pretensions and hobbies where also innovations develop.

Many still remember the situation in the 60s when the pop culture which renewed the world in many ways developed as if on its own accord in British Art schools which were meant for the students who did not feel comfortable in usual schools and which offered a favourable social network to develop new ideas.

Art is self-expression of a playable human being. Like the play for a child, art is serious for an adult because the opposite of play is no seriousness but reality. Culture can be seen as a continuum between two opposite poles where on the one end there is culture as a normative doctrine with recognised masterworks of arts, and on the other end, there is human being as a creative and culture shaping creature. When normative system is evaluating whether the cultural objects (artworks, performances, texts) fulfil the aesthetic and technical quality demands set for them, the system underlining creativity evaluates the insightfulness and originality of the cultural products. In arts both points of view are essential which means that the field of arts education and its research interests are situated somewhere in the middle area of these opposite poles.

ARTS EDUCATION TAKES SIDES

The purpose of arts education is to research also the intermediary structures and mechanisms which during different eras change the culture from an immanent stage to a manifest, concrete reality. An art educator must act as a guide who introduces their students to multifold cultural objects teaching the students to understand and enjoy them. Arts education may also focus on elements limiting creativity: historical, sociological, technological, ideological, aesthetical and stylistic points of view which prevent human beings from fulfilling their aesthetic purposes.

The research on arts and education based on it are built on intuitive knowledge which can only be passed on if the art educator experiences the artefacts they are representing alive. For this reason, arts education and research require creator's knowledge, which means that they must have subjective, firsthand knowledge and know-how about making art. Dewey (1980) points out that an art educator only should use in their teaching such artefacts, which they feel significant from their own point of view. This brings in a new problem: where comes the justification for an art educator to offer only such experiences which suit their own artistic taste. The task becomes easier when we remember that arts education should always be based on interactive dialogue where both teacher and pupil construct their own picture of the world and learn something valuable and new from each other (Tarasti, 1981).

French aesthetic Guyau (1927) underlined the aesthetic nature of human life and aggravated his thesis by stating that a rich and intensive life as itself is perfect aesthetics. Art is anthropomorphic – similar to human beings, and this is why artistic communication

resembles human communication. The world is human because it means something. Art is essentially qualitative which makes also arts education facts qualitative.

The question about the meaningfulness forms a bridge between arts education and other human sciences. The task of an art educator is to build bridges between different sciences, arts and cultures. Supporting cross-scientific and cross-artistic collaboration and mutual understanding is also one of the most important assignments of arts education theory building and practice. Another important task concerns bringing arts out of institutions into the everyday life of people.

When speculating the relationship between arts education and general education, we may ask can an aesthetic experience be compared to an experience arising from education and also to what extent education is aesthetic by nature. Similar to art, education requires realising and understanding the finest and most discreet nuances of pretensions, qualities and shadings of human life. The artefacts are also born from processes inside a human person and also indicate their different qualities. An educator and an artist work in the same field because also aesthetic experiences base on action models internalised in human interaction which we use expressing different sides of our existence. Also the highest level of humanistic knowledge, insightfulness is essential both in arts as well as in education which makes skilful education also in this respect artistic achievement by nature.

The core of arts education is humanistic, and this is why it should offer the kind of guidance and elements for growth leading the learner to grow as oneself, developing their personality, using their talents in an optimal way and realising their creative abilities. Arts education should always be seen as building a comprehensive personality, not only superficial teaching of substances and techniques.

Some people wish to include also art therapy in arts education. Then arts education could be seen as some kind of society therapy which would aim to organic solidarity described by Durkheim (Vanamo, 1997). Arts education may aim to humanise current circumstances because it can bring artistic achievement into institutions where it has earlier been missing or it may be critical towards existing circumstances concentrating on anything that restricts creativity. Here we run into collision between the aesthetic and therapeutic functions of arts because the therapeutic function does not necessarily identify in aesthetic. For this reason, affective arts education is not necessarily therapeutic, it may even make students who are struggling in the limits of their abilities feel bad. Also in this respect more research and clearance of conceptions are needed.

When we are developing theories for such a rather new field of science as arts education, it is necessary to know old scientific traditions to avoid the surprise of finding out that our own new innovations are in fact repetition of old thoughts from decades or centuries ago. When developing theories, we must also consider the relationship of arts education to other sciences, the relationships between different fields of arts, artistic communication and art pedagogical questions. Whatever the starting point for theory development may be, arts education must define the nuclear problems and conceptions but also be able to separate derivative phenomena from the original ones.

According to Kris (1952), artworks are artist's attempts to solve general and individual problems in a symbolic mode. This quality of artworks explains the teleological research line he has established and also the effect which artworks have on human mind. An artwork stops us and starts speaking with the subjectivity inside us. Art touches such

possibilities which we maybe not consciously even know to exist. Art invites and repulses us in a mysterious way. Receiving art means in a certain way also participating in the creative process. We understand art through receiving it and adding something own to it. In music, the texture created by the composer moves our imagination which becomes a part of the artwork through this projection. Also a reader of a book takes part in rewriting the text as he constructs it from their own starting points.

The matter is not the artwork itself but what it does to us or what it may invite to show up. There is no exact and final artistic meaning; it has to be conquered again and again because every individual experiencing art creates their own new interpretation of it. According to Tarasti (1981) it is important to support meaning building by arts education because its assignment is to develop human consciousness and emotional sensitivity through arts and aesthetic experiences. The experience is one of the strongest powers of education. An experience changes person's perception, the way they observe themselves in relationship between the world and other people. Through aesthetics we can bring positivity and opportunities for existence of good qualities in our life affecting our existence in many ways (Mäki-Opas, 1993). This way art supports the sustainable wellbeing and happiness in our life.

CONCLUSION

As a conclusion we can collect together some of the elements we have been discussing in this article which underline the positive and significant effect of arts education. One of the most important is the fact that arts provide flexible integration, which offers many possibilities in teaching and learning. The significance of arts developing creativity is also one of the commonly known impacts of arts education. The arts have an important meaning in people's life quality and happiness as the aesthetic attitude brings beauty in our life. This effect should never be forgotten. The arts promote human imagination which has a balancing and synthesising effect on human life. The imagination could consolidate even the most unpleasant and chaotic experiences as meaningful parts of human life. When we notice the culture and arts as a part of our everyday life, we may see that arts and arts education develops our emotional life as a part of sustainable emotional development and happiness.

REFERENCES:

Adorno, T. W. (2007). *Esteettinen teoria* [Aesthetic theory]. Tampere: Vastapaino.

Dewey, J. (1980). *Art as experience*. New York: Berigree Books.

European Parliament. (n.d.). *Euroopan parlamentin mietintö taidealan koulutuksesta Euroopan unionissa* [European Parliament report about arts education in European Union]. Retrieved February 24, 2009, from http://www.euparl.europa.eu/…/getDoc.do?

Goethe, J. W. (1917/2000). *Wilhelm Meister's apprenticeship. Harvard classics shelf of fiction, Volume XIV*. New York: P. F. Collier & Son, 1917. New York: Bartleby.Com, 2000.

Guyau, J.-M. (1927). *La morale d'Epicure et ses rapports avec les doctrines contemporaines*. Paris: Libraire Felix Alcan.

Hilpelä, J. (2009). *Schiller valistuksen problematisoijana. Valistus ja romantiikka – epäsopuisa pari* [Schiller as a problematiser of the Enlightenment. Enlightenment and Romanticism – a disharmonious couple]. Paper presented at the Conference of Educational History, 8–9 June 2009, Turku University, Turku, Finland.

Hollo, J. A. (1959). *Kasvatuksen teoria. Johdantoa yleiseen kasvatusoppiin* [The theory of education. Introduction to general education theory] (5th ed.). Helsinki: Werner Söderström OY.

Huuhtanen, P. (1984). *Mitä on taidekasvatus? Taidekasvatuksen esteettis-käsitteelliset perusteet*. [What is arts education? Basics of aesthetic-conceptual essentials]. Jyväskylä: University of Jyväskylä Department of Arts Education.

Hägglund, T.-B. (1984). Luovuus psykoanalyyttisen tutkimuksen valossa [Creativity in light of psycho-analytic research] In R. Haavikko & J. E. Ruuth (Eds*.), Luovuuden ulottuvuudet* [Dimensions of creativity] (pp. 123–146). Espoo: Weilin & Göös.

Kris, E. (1952). *Psychoanalytic explorations in art*. Oxford: International Universities Press.

Kuorikoski, A. (2007). Johdanto Adornon ajatteluun ja esteettisen teorian suomennokseen [Introduction to Adorno's thinking and translation of his aesthetic theory]. In G. Adorno & R. Tiedemann (Eds.), *Theodor W. Adorno Esteettinen teoria* [Theodor W. Adorno's aesthetic theory] (pp. 9–23). Tampere: Vastapaino.

Lange, K. (1901). *Das Wesen der Kunst; Grundzüge einer Realistischen Kunstlehre*. Berlin: G. Grote.

Lehtonen, K. (2011). Taidekasvatus on tunne-elämän kasvatusta [Arts education is education of emotional life]. (2011, December 29). Turun Sanomat [Turku Messenger], p. 2.

Mäki-Opas, A. (1993). "Älä katko kasvavan siipiä". Auttava terapeuttinen kasvatus Lauri Rauhalan eksistentiaalis-fenomenologisesta näkökulmasta tarkasteltuna ["Don't break the wings of the growing person". Helping therapeutic education from Lauri Rauhala's existential-phenomenological point of view]. In *Acta Universitatis Ouluensis: Series E. 13*. Doctoral thesis. Oulu: Oulun yliopisto.

Taneli, M. (2012). Kasvatus on kasvamaan saattamista. Kasvatusfilosofinen tutkimus J. A. Hollon sivistysajattelusta [Education is the initiation of cultivation. Educational philosophical investigation into thinking of J. A. Hollo on the building of ideal in education]. T*urun yliopiston julkaisuja Annales Universitatis Turkuensis SARJA – SER C – TOM. 351*. Turku: Turun yliopisto.

Tarasti, E. (1981). Luovuudesta, kulttuurista ja taidekasvatuksesta [About creativity, culture and arts education]. *Kanava* [Channel magazine], *9*, 409–413.

Vanamo, J. (1997). *Durkheimilainen sosiologia ja vuosisadanvaihteen radikalismi: Tieteellisen sosiologian kehitys, radikalistinen ideologia ja keskiluokan poliittinen nousu Ranskan Kolmannessa Tasavallassa* [Durkheimian sociology and the turn-of-the-century radicalism: The development of scientific sociology, radicalist ideology and the political rise of the middle classes in the French Third Republic]. Unpublished doctoral dissertation, University of Helsinki, Helsinki, Finland.

Wilenius, R. (1982). *Ihminen ja sivistys* [Human being and education]. Jyväskylä: Gummerus.

Homing and downshifting through crafts

Sinikka Pöllänen

University of Eastern Finland, Finland

ABSTRACT

Critics have suggested that the contemporary throwaway, success-based culture and hectic pace of life decrease positive self-perceptions of well-being and meaningfulness of life. Homing and downshifting are considered to counter these negative responses. The aim of this article is to depict the phenomena of homing and downshifting in the context of craft making. The study is based on an analysis of the written narratives of 46 employment age textile craft makers (men and women aged 17 to 62). Based on the results, homing and downshifting in craft related activities increased the craft makers' well-being. The participants said that craft making enabled them to have personal time and gain privacy. They also noticed the importance of family and friendship, as well as personal fulfilment and development. The aim of homing and downshifting was not just to cope at work or at home, but to create a new way of life without stress caused by the culture of throw-away products and relationships. Craft provided a link between and within generations, serving as gatekeepers to friendships and traditions. It may be concluded that making things by hand as a basic intention in human activity may help to promote both well-being and sustainable development at school and later in the life.

Key words: craft, downshifting, homing, sustainable development, well-being

INTRODUCTION

Critics have suggested that the contemporary throwaway, success-based culture and hectic pace of life decreases positive self-perceptions of well-being and meaningfulness of life. Throwaway culture is strongly influenced by the over-consumption and excessive production of short-lived or disposable items that will soon be thrown away (Cooper, 2005; Evans, 2012). Critics insist that this kind of consumer culture is also regarded as a principal form of self-expression and the source of self-identity. According to Mishra (2008), it includes both material and non-material items, such as kinships, affection, art and intellect. In the extreme, their value is assessed by the context of their exchange and benefit, rather than the context of their production or use and pleasure. The spread of globalisation, information systems and multinational dispensations has also led, according to critics, to the erosion of local cultures and traditions (Beck, 2003; Mishra, 2008; Craig, 2010).

Hamilton and Mail (2003) argued that success is usually measured by material affluence at the expense of family and health. The evolution of technologies and the impact of information as well as efficiency and productivity force people to compete and work at the borders of fatigue (Siltala, 2007). According to the Fourth European Survey on Working Conditions (Parent-Thirion, Fernández Macías, Hurley, & Vermeylen, 2007), 35% of workers have reported that their work affects their health and well-being. The most often reported health symptoms are fatigue, stress, headaches and irritability as well as musculoskeletal disorders. Workers in Finland, particularly Finnish women, exhibited the largest number of occurrences of these symptoms among EU countries. Thus, the world of work is characterised by urgency. Even socially acceptable free-time activities spread feelings of urgency to other areas of life in spite of the fact that free time is for having fun, pleasurable moments, good experiences and being happy and free (Rojek, 1995; Valtonen, 2004). However, free time is often seen as time that must be consumed (Rojek, 1995; Baudrillard, 1998).

Two decades ago, Harvey (1989) predicted that the contemporary hectic pace of life would cause conflicts of values. He suggested that, globally, we should set the optimal rate of exploitation of a resource by the interest or search for a sustainable development that assures the perpetuation of the ecological conditions suitable for human life. Other critics have observed an inner conflict between what we do on a daily basis and what we believe is right for ourselves and our society (Hamilton & Mail, 2003). According to Inglehart (1997), postmodernism has brought new values and societal changes to countries where basic stability and security is achieved and economic growth will not increase human well-being significantly. In such cases, the person's personalised, meaningful objects and meaning making may become an important part of the lifestyle and values. This refers to a transition from economic values to an emphasis on the importance of the meaning of life and seeking subjective well-being (Juniu, 2000). This shift in perspective is accompanied by tendencies to see the environmental consequences of one's actions, in community participatory activities, for instance (Song, 2009). Upitis (2009) noted that artistic production processes and artistic sensibilities may be awakened when the participant becomes aware of the impact of their actions and practices on the well-being of the larger community.

The purpose of this article is to discuss the phenomena of homing and downshifting from the perspective of craft making. It attempts to shed light on the meaning of craft for the well-being of employment age textile craft makers. The study into the topic starts with review of relevant literature and related concepts. The review draws from a range of literature for two main purposes. First, it positions the paper in the existing theory and helps to deepen the analysis of the craft makers' descriptions of craft making. Second, it serves to enlighten the explorative character of this study. Following the literature review is the empirical part containing first the methodology and data collection and then the results. Finally, a discussion and conclusions summarising the results of the study are presented.

Homing and downshifting: Ways towards well-being

Various terms, such as downshifting and slow life, have been used to refer to phenomena that oppose throwaway culture (Hamilton & Mail, 2003; Kopomaa, 2008). The concept these terms describe try to depict the appreciation of environment and the preference for small goods (e.g. small is beautiful), as well as awareness of over-buying and reduction of consuming (more is better) (Shama, 1981). Downshifting and homing emphasise a new trend towards well-being, which attempts to slow down the pace of life and enjoy daily living.

Downshifting refers to people who make a voluntary, long-term lifestyle change that involves accepting significantly less income and consuming less (Hamilton & Mail, 2003). According to Levy (2005), downshifters seek lives that are more meaningful by decreasing the amount of time they devote to work, leaving more time for the valuable 'goods' of friendship, family, and personal development. Shortly, it means simple and sustainable living, attempts to do more with less (Juniu, 2000). Meaningfulness is found in many aspects of human life. Thus, downshifting as a lifestyle increases the importance of home and family (Lampikoski & Lampikoski, 2000).

During the first decade of this century, a new concept, *homing*, emphasised the importance of home and family. There has been an explosion of interest in websites, magazines and TV programmes on home-related activities. The concept of homing refers to a way of life in which social life is centred on the home (e.g. Kodin kaikki kuviot [Homing], 2012). Because home is thought of as a safe and pleasant place, people are also interested in investing in the home and home-related activities (Homing, 2012). Moreover, it has been noticed that homing, which includes the 'do-it-yourself ethic', might also mean saving money. Thus, home chore activities, do-it-your-self construction and craft making are in fashion. These activities are signs of the trend towards slow life. People want to enjoy everyday life and share their experiences with their family and friends.

Downshifting and homing as trends are also evident in Finnish value profiles where family, mental balance and health are the most important goals (Raatikainen, 2008). Torvi and Kiljunen (2005) also noticed that psychological issues are more important for Finns than material objects. The human desire for a good life, as well as ethics and aesthetics, has come to counteract global values of consumption.

Crafts and Wellbeing

As the nature of work life and values has changed, the concept of free time and leisure activities has gained more attention. According to Statics Finland (2005), one of the most popular hobbies is crafts (67%). Making crafts is considered a well-organised and benefi-

cial use of time (Dickerson & Kaplan, 1991; Griffiths, 2008). During the last decade, there has been a resurgence in craft making by people who do the so-called household crafts (von Busch, 2010). The significance of craft as a leisure activity has been the subject of research that has pointed out the possibilities of craft making as a means of enhancing well-being (e.g. Burt & Atkinson, 2011). Craft provides an opportunity to do something intentionally and without haste (Myzelev, 2006).

According to Kojonkoski-Rännäli (1998), as human beings, we have a natural desire and need to use our hands in a way that can be experienced satisfactorily and that maintains the harmony of self and the environment. Venkula (2005) also claimed that humans hunger for handwork that is comprehensive and different from work that is compulsory. Thus, handwork can be viewed as a basic component of human activity (Kojonkoski-Rännäli, 1998). In this case, as the corporal act of doing and motor function, bodily intelligence cannot be ignored. The comprehensive nature of learning and the significance of physical and bodily experiences in craft making can be justified by the exceptionally high representation of hand movements in the brain and in the motor cortex, which are involved in planning, control, and execution of voluntary motor functions (Verdan, 1979; Hari, 2011). These complex functions relate to the multi-channel characteristics of crafts (Anttila, 1993). It should also be noted that reflections on important issues and the meaning of life do not occur through abstract thinking but are unnoticed, for instance, in activities (Saarenheimo, 2003) and reciprocal conversations (Hasio, 2010). Nelson, Labat and Williams (2002) stressed the importance of a person's perceptions of their own work as it reflects lived experiences.

According to Johnson and Wilson (2005), one possible meaning for craft making is that it offers a means of self-expression. Craft products are valued as symbols of self; they are not mass-produced but are made with love and personalised with the makers' histories and are free from commercial marks (Mason, 2005). This interaction between maker and object may improve the individual's self-esteem (Fisher, 1995) and promote the development of self (Schofield-Tomschlin & Littrell, 2001). Participation in craft activities may define the craft maker's personal identity (Fisher 1995; Kojonkoski-Rännäli, 1998; Johnson & Wilson, 2005), helping them to feel grounded and able to cope (Collier, 2011). Crafts may provide a link between and within generations, serving as gateways to friendships. It can be said that craft makers bind themselves symbolically to the larger environment of family, friends, neighbours or other groups (Dissanayake, 1995; Mason, 2005), and craft making may serve as a means to carry on traditions (Johnsson, Josephsson, & Kielhofner, 2001; Schofield-Tomschlin & Littrell, 2001).

It has been suggested that craft enables people to learn skills that translate into self-satisfying activities (Ihatsu, 2002; Johnson & Wilson, 2005). This way, it may help to pass successfully through different life events (Littrell, Reilly, & Stout, 1991; Fisher, 1995; Nelson, Labat, & Williams, 2002; Burt & Atkinson, 2011). In a study of craft makers by Schofield-Tomschlin and Littrell (2001), the craft process was shown to provide identity, therapy, creativity, enjoyment, self-actualisation, self-directed learning and opportunities for teaching. It was shown that craft makers had chosen crafts as their leisure activity because they realised the affective and cognitive components that were available to them through the craft process.

Based on the previous research, it can be concluded that there is a connection between crafts and well-being. Mason (2005) claimed that craft may be seen as one example of

meaningful life activities that contribute to a healthy lifestyle because it makes a subjective contribution to inner well-being and life experience. However, the meaning of craft in employment age craft makers' everyday lives has not been thoroughly investigated. The findings have been vague about the kinds of things that make craft meaningful. In addition, subjective experiences and expressions have not been the main interest. Consequently, qualitative studies are needed to explore meaning, especially as it relates to activities as a mediator of well-being (Aubin, Hachey, & Mercier, 1999).

MATERIALS AND METHODS

Data collection and participants

The aim of this qualitative study was to depict the phenomena of homing and downshifting from the perspective of craft making. It is based on an analysis of written narratives of employment age textile craft makers. These first-person narratives are personal documents (Bogdan & Biklen, 2006) that describe an individual's actions, experiences and beliefs regarding craft making. The written narratives in this study are responses to a request published in eight small provincial newspapers in Finland. The request was an assignment that encouraged craft makers to write about the meaning of crafts as a leisure activity for one's well-being. They were asked to write down their own thoughts and experiences about how making crafts or crafted items as an activity had been meaningful to them. Because the main interest was obtaining information about the meaning of crafts for those persons who have experiences as craft makers, the assignment was a loosely formulated description. This was done to ensure that the writers would write in their own way about their meaningful experiences.

The written narratives of 46 employment age textile craft makers were used as data in this study. Thirty-two of these participants were women and 14 were men. Their ages ranged from 17 to 62 years; most were between 30 and 50 (mean 44 yrs). The participants lived in different areas in Finland, in both cities and the countryside. The written narratives varied in length but provided rich descriptions of unique experiences and meanings that the writers give to craft making. The descriptions given in the men's narratives were shorter than those given in the women's descriptions – as is common (Hoikkala, 1994). However, the narratives gave detailed descriptions of crafts that had been done, for whom and what reasons, in addition to the process and experience that the craft making entailed.

Data analysis and interpretation

The data analysis utilises inductive content analysis and a hermeneutic approach. This methodology is suitable for cases in which there have been no previous studies dealing with the phenomenon (Elo & Kyngäs, 2008). In this case, there was no predetermined set of criteria (Klein & Myers, 1999). Thus, the hermeneutic circle guided the process in an iterative manner.

First, a data-driven approach was used to analyse the narratives. Each narrative was accompanied by notes on emerging meanings and was read carefully several times. The data were then divided into smaller pieces by marking phrases, sentences and significant

words as quotations. These quotations were used as the elementary units of analysis. The quotations were then reassembled and categorised according to preliminary themes. The final themes and the interpretation of the results were derived by merging the data with theory-driven reasoning. Thus, thematically similar quotations had to be reintegrated to determine a coherent explanation of the phenomena of homing and downshifting from the perspective of craft making.

The data yielded three main themes: (a) home-centred craft; (b) tradition-centred craft and (c) individual-centred craft. The first theme, "home-centred craft" involves how the participants described crafts in connection to home, family and friends. The theme "tradition-centred craft" represents the craft makers' intentions to maintain traditions through craft making. The third theme refers to "individual-centred craft", which describes the craft makers' intentions to achieve relaxation and peace of mind through craft making. These themes were determined by examining the craft makers' descriptions of crafting, their ways of thinking about the meaning of craft and the process and strategies of making craft. When the themes were gathered, the narratives were read again in relation to the craft makers' life context to verify how these thematic categories described the connection between craft, homing, downshifting and well-being.

To enhance the rigour of this qualitative study (Lincoln & Guba, 1985; Krefting, 1991), the following four criteria of trustworthiness were taken into account: credibility, conformability, dependability and transferability. Credibility and conformability were taken into account by identifying the thematic categories and clearly describing criteria of the analysis. In the analysis, dependability was certified by peer examination and theory generation. Transferability can be evaluated from the rich data and dense description. Also, a sufficient amount of the participants' privacy was honoured when quotations were selected to illustrate the interpretation. In this study, the writers were interested in crafts that had been done as home-based crafts. For this reason, the research results cannot be generalised to all situations and contexts. Despite that, the results may offer useful information for considering the findings in a suitable context. As Mayring (2007) argues, in most cases the targeted conclusions of a qualitative study may be more general than the results found.

RESULTS

Home-centred craft

The craft makers responded that they perceived craft making as a pleasant and satisfactory activity that also produced concrete and economical products for home and family members. Both men and women described how they had saved money while making crafts. Craft making was connected to saving money as well as to environmental aspects. Craft making meant repairing, recycling and retuning items, such as old garments and used articles. This kind of craft making was not only economical but also took into account environmental issues. These craft makers did not want to throw away useful materials; they resisted over-consumption and the production of short-lived items. The intention was to produce crafts of good quality and long life. Some participants described that their living and household practices were organised thorough the principles of sustainability.

Many of the craft maker participants described that home-centred craft had increased after the birth of children not only because of the changed life situation but also because the parents wanted to be at home more often. Some women wrote that they had had the opportunity to stay at home and raise their children when they made all the clothing and textiles themselves. The male participants regarded house building as a money-saving activity. For both female and male participants, craft making meant a salary, that is, in some cases, craft making replaced paid work. Some craft makers had made calculations and notes regarding how much they had saved through craft making.

> I do not need any oriental yoga or retreat courses. Crafts make living meaningful. And it does even take a lot of money because you can do them free of charge when you use natural materials and recycling. You can make children's clothes from adults' clothes and using second-hand garments. In general, garment repair is a voluntary-forced thing. I have seen how expensive new garments are, so I usually fix the old jackets and pants. I have noticed that textile industry lives to sell clothes, but I live while I do not buy those expensive clothes. In ten years, our family of 5 persons, have spent the same sum as an ordinary family just in one year. We have saved a lot. I can be at home – I do not have to work outside the home. Economically, the result is the same… Recently I used old tricot fabric pieces and my husbands' old T-shirts for children's pants. I saved 50 Euros. So I have started to do memos of each of the smallest handicrafts (woman No 47, 37 yrs).

The craft makers' narratives indicated that craft was also a useful way to occupy spare time among family members. In this case, craft connected family members to a common goal and a creative process. These projects were mainly those involving mothers and children in home decoration. However, the spouses' joint projects were described intensively.

> Handicrafts bring warmth to our home. Crafts increase the sense of community and strengthen family ties. My daughter keeps asking instructions to sock knitting and the whole family makes something together. Crafts are really increasing our well-being (woman No 8, 49 yrs).

> My wife and I have almost identical handwriting in knitting, so there is often a joint project. Over the years we have been knitting together everything from socks to hats, all that the body requires (man No 9, 61 yrs).

Craft also meant home building in various ways, which was most evident when the craft makers described the seasonal rituals and ceremonies of celebration, such as Christmas. Families used energy and time to modify the home and make products with specific aesthetic properties. Making by hand something concrete and beautiful was experienced as pleasing by all family members. This kind of common activity was described as an everyday luxury.

In addition, the craft makers also described larger do-it-yourself projects, where the whole family lived in the middle of a demanding craft project, such as building or renovating the home, and where everyone had their own smaller projects. The craft makers wrote that their children were eager to participate either by doing their own jobs or by helping with their parents' work. These kinds of projects offered easy opportunities for learning and teaching important values and skills through crafts. The narratives revealed

that handwork bound the family members together and strengthened the feeling of home as well as the family's private culture. It seems that home was the very centre of these families and craft was just one way of expressing the home-related family identity.

The participants described that seeing homemade clothes on someone or handicrafts in their own homes or in the homes of loved ones strengthened the sense of meaningfulness. The data analysis revealed the connection of craft to relationships and domestic objects, illustrating that handicrafts act as personalised reminders of the maker and their origin. Most of the products were gifts made with love. Giving self-made and time-demanding gifts was seen as an expression of love and care that would strengthen relationships.

> *I know that these handicrafts have long been a step to well-being. When my children were small, I sewed all their clothes, in addition to the money saved, it gave a good feeling to us and my children liked them. After all, our handicrafts can be seen in this home. What a wonderful feeling! When you see your handicrafts to been used. Sometimes I feel like a small child who does something by own hands and then asks to look at it to get encouragement. I guess this is a part of adult world too – I get joy when my family has joy of my works (housewife, woman No 47, 37 yrs).*

The analysis revealed that home-centred craft making meant that products were made at home, for home and family members. In this sense, craft can be described as part of making the home a home, a special place for all the family members. Home-centred craft can be described as fostering a family-oriented life style. Thus, craft was perceived as strengthening family ties as well as was considered a concrete and visible evidence of kinship and love

Tradition-centred craft

The data showed that the participants viewed tradition-centred craft in the light of continuity. It meant the transmission of cultural and intra-family traditions and skills as well as values and memories. The clearest evidence of this was the participants' relation of crafts to family celebrations. Some of the craft makers wrote that they had their own traditions, such as gift giving. In addition, the gifts were expected to be self-made according to special traditions. It was described how the family members expected particular products from some people. For instance, one grandmother wrote that in their family, grandmothers had always given knitted products to grandchildren (e.g. socks, mittens and pullovers). Traditional regional crafts were also given as self-made gifts (e.g. Karelian or Lappish crafts).

> *Self made, personalised gifts are given with love. It is much more impersonal to buy something 'finished'. Time is limited, but gifts to family members must be self-made with love (woman No 10, 28 yrs).*

The narratives revealed that the older craft makers in particular mirrored themselves and their craft making in the handwork of past generations. They respected their own craft-related roots and wanted to carry on family traditions, local culture, values and memories for their children and grandchildren. They had saved handmade items as mementos of their own grandparents. Almost all the narratives revealed that the craft makers hoped that their crafts would be saved for future generations. They described

crafts as visible marks of work done during the life course, which could be passed on to successive generations.

> I'm aware of my own mortality; someday I will disappear from the face of the earth..., but with luck, my handicrafts will stay in this world even longer than I will. They will remain in use of others or decorative items in the homes of others, crafts are not at first to thrown into the dustbin (woman No 7, 39 yrs).

Teaching and learning crafts can be viewed as the transmission of culture over generations. Parents who appreciated handicrafts wanted to transfer the values of skilfulness and self-making to their children. Tradition was also linked to the desire to pass traditional habits to younger generations. The craft makers saw that local and family traditions created continuity and ascribed meaning to life.

Goal-oriented learning and teaching crafts were noticed particularly in the case of participants who belonged to a minority culture. The data analysis demonstrated that copying traditional artefacts also created ties to minority cultures whose members were afraid of losing these artefacts. The participants who belonged to a minority culture said that they also wanted to learn some old or special traditional techniques from a skilled family member. For instance, Lappish crafts require special skills and expertise (e.g. working with leather and fur) that are not learned at school. Thus, this kind of learning took place in their family. Learning these traditional crafts helped to make contact with the experts in the indigenous community. This was especially obvious in the case of participants whose background was in a different cultural context.

The narratives revealed that craft and traditions were intertwined: crafts were preserving traditional techniques and works carrying meanings of community.

> The most important in crafts is the interaction, transmission of knowledge and skills across generations (woman No 11, 55 yrs).

> Feeling that I am Sámi is something different than I am Finnish. I transfer the Finnish identity to my children naturally, but Sámi culture can be transferred to them through crafts. I have wanted to learn the traditional methods and beautiful shapes and the product design which are OK also today – Sámi handicrafts are smart garments. Traditional handicrafts help to understand the whole culture... I have practised ten years to make traditional Sámi shoes and now I have the feeling that I am beginning to be aware of the making process and as a part of traditional craft maker experts in our village…The whole reindeer husbandry is our common project. My husband acquires the materials and I am working on handicrafts. Hex-index and the up and downs of Nokia are hectic illusions and manipulation, which do not have any serious significance of the human relationship with nature. Modern technology has upset the human race. We do not even remember that we are creatures. I am grateful that I have such a convenient way as crafts to realise the important content of human life (woman No 47, 37 yrs).

Individual-centred craft

All the craft maker participants described craft as entertainment and relaxation, allowing free time without any compulsions. This time was the most important among homemakers who were working at home as caretakers as well as women who were employed

outside the home. This private time, however, was not simply about passing time or curing boredom. It meant true privacy and legitimate joy. In the middle of their everyday routines, crafts seem to equip the participants, especially the women, with resources that support the role of the provider.

> *I have realised that it is me: my handicrafts. I calm down, I am not cranky and I am much chattier when I can focus on my crafts… One of the most important functions of craft is the opportunity to raise my thoughts outside the four walls. As a mother of little children and as a caretaker, I am physically tied to be inside. I have noticed that when I can focus on handicrafts for a moment, I feel better. When I have anything else to do, I begin to see all things as a chaos – I am walking around and cleaning up nervously… If I can make crafts for even a moment, I am relaxed as a mother and a housewife. I am still available for all the time at home (woman No 47, 37 yrs).*

> *When I get properly focused on my work, I go inside my head and lock everything else outside. I can only concentrate in this way at nights when the kids have gone to bed and I get to do cross stitches in peace. I think about all kinds of things, plan daily chores, go through different events and, of course, plan future projects (housewife, woman No 9, 30 yrs).*

The craft makers wrote that craft helped them to feel complete for an entire day. This kind of relaxation was described as a means to improve mood. It seems that craft making created feelings of success and control. The results showed that making crafts and creating something concrete connected to the sensation of accomplishing something tangible in the daily round of activities. The findings revealed that craft making diminishes the effects of a fast tempo of life and rushing to meet deadlines and demands. Making craft was perceived not only to involve unhurried activity but also the opportunity to sit quietly in peace while looking at the present project and materials. In other words, craft making helped the participants to slow down.

The data revealed multi-channel characteristics and the meaning of the corporal act of doing craft, raising the significance of bodily experiences and reflections. Some craft makers wrote how craft had helped to achieve a mental balance in the case of agony, aggression, ill feeling or sorrow. The craft makers described how they had been able to push away the feelings of agony by putting bodily activities into action. Touching the material and the process of making the artefact had deepened the possibility of expressing inner feelings. The narratives revealed that the freedom to make crafts created contentedness and peace of mind. The data also revealed that a feeling of control had arisen from handling the materials, equipment and performing the techniques. Making and touching the materials may have been the most important thing in craft making. In these cases, it was not always important to finish the piece of work. The calming, re-creating effect of craft was described as the jingling of knitting needles, the banging of the looms or the cutting-up of one's sorrows into strips of carpet without any thought of worrisome matters preoccupying the mind. It seems that according to these participants, a part of them was able to embrace new perspectives.

> *At that point, I thought I was going to learn the sorts of things I always wanted to do but never acted upon… I got my mind away from the cancer. There were other more interesting things. From then on, I have participated in bobbin lace making during winters. That kind of took me with it (woman No 38, 57 yrs).*

Making by hand is to me a channel to handle the emotions and solve problems. I think it is cheap therapy, and I am not sure which is most important: the making or the product. A number of my miscarriages, my tears and pain I have beaten furiously in a rag rug (woman No 16, 48 yrs).

The narratives revealed that personal pleasure could be gained from making products by hands. Skilfully produced crafts not only enable self-expression but also promote aesthetic intent. All the craft makers described craft making specifically in the context of aesthetics, skilfulness and productivity. The findings revealed that this meant learning new skills, self-development and creativity in a way the craft maker intended. In addition, the older writers wrote that aesthetically pleasing products made over the years and displayed at home were also concrete symbols of self and life experiences so that the attached memories gave a sense of self-worthiness and meaning to life. In these cases, the crafted items also represented the craft makers' values as well as their life history. The narratives revealed that craft had helped to install the goals and achievements that supported the craft makers' self-esteem in receiving the appreciation of others.

I was maybe a 4–5-former when the teacher sent my crocheted cloth to school cultural competition. I got the first prize…It has been on displayed in my home for a long time. Then I noticed for the first time that I have a special gift at crafts (woman No 46, 62 yrs).

My intention is to live properly and skilfully, and craft is really the only way to be valid (woman No 7, 39 yrs).

Crafts mean to me, above all, fun, entertainment, learning new things, self-development and creativity (woman No 12, 19 yrs).

The findings revealed that craft had raised the craft makers' self-esteem and had helped them to pass successfully through different life-events. The analysis revealed that craft created a sense of management in everyday life as well as over the life course. The narratives showed that a strong personal, emotional bond was formed with the crafts. It seems that as they described their craft making, the participants also described the construction of their experiential self-image.

Sometimes I have imagined what I would do if my hands got injured so that I could no longer use them for precise work. Stop being me? How could I take myself? A terrible idea (woman No 7, 39 yrs).

Craft meant also self-expression and the creation of personally meaningful, unique products. Most of the craft makers, especially the men, had made, for instance, clothes and items that they otherwise would not have been able to afford or that were needed otherwise in their hobby (e.g. in live action role play or in a Middle Age hobby). Those handicrafts were also expressions of the craft makers' artistic intentions. The analysis showed that craft had helped to achieve cost-effectively unique targets that were experienced as a part of a personality or life style.

The sewing skills have brought a lot of meaning to my life. I have had the possibility to dress in my own way. Thus, I have clothes which I would have not been able to afford other ways, they are also personalised. My personality can be seen in my clothes (man No 1, 37 yrs).

DISCUSSION

This study aimed to explore the phenomena of homing and downshifting from the perspective of craft making. The researcher attempted to shed light on the meaning of craft in the lives of the employment age craft makers as expressed in the written narratives of the participants. Three themes emerged from the data analysis: home-centred craft, tradition-centred craft and individual-centred craft, which revealed features of homing and downshifting through crafts. Many of these features were intertwined, but they also specified and shed light on the characteristics of these phenomena.

The data show that some of the families had recently made a voluntary lifestyle change as Hamilton and Mail (2003) and Levy (2005) envisioned: they were consuming less and preferred family, friendship and personal development to investing in the labour market. Craft had been a tool for concretising this tendency. It may be concluded that craft had played an important role in the external life management to satisfy the need for artefacts of everyday living or financial surviving. Crafts were not only tangible benefits gained from the end products of the crafter's labour, but craft making as a life style offered the possibility for downshifting, such as being at home as a caretaker or home builder without paid work. Craft also made it possible to concentrate on values, life style and activities, such as a Middle Age hobby, which otherwise would not be possible for economic reasons. Making things at home and for the home and family had meant saving money.

The results of this study showed that crafts had created a link between and within generations. In those cases, the crafts had usually been specific gifts for loved ones, as earlier studies also pointed out (e.g. Johnson & Wilson, 2005; Mason, 2005). Several studies also showed (Dissanayake, 1995; Schofield-Tomschlin & Littrell, 2001; Collier, 2011) that making crafts could help bind relationships between past and future generations and traditions. Thus, it may be concluded that craft had strengthened relationships as well as helped to pass successfully through different life events. A similar connection has also been noted by Fisher (1995), Nelson, Labat and Williams (2002) as well as by Johnson and Wilson (2005) who have stated that craft making may nurture personal identity and piece together personal history.

In addition, the results disclosed that crafted items as gifts may convey affections and tighten the relationships between family members. As Mason (2005) observed, craft may act as a family-related activity that focuses the family's social life in the home. According to von Busch (2010), this kind of re-emerged craft is entangled within the household practice of craft promotion and is part of dialogue that is an updated approach to traditional handicrafts.

The results showed that craft can be seen as a bearer of traditions and cultural heritage. Learning and teaching crafts at home as well as self-made personalised gifts had carried on family traditions, as earlier studies also pointed out (e.g. Johnsson, Josephsson, & Kielhofner, 2001; Schofield-Tomschlin & Littrell, 2001; Mason, 2005). Craft has strengthened the relationships between generations and made a homely atmosphere. Making traditional crafts had also been a part of efforts to stop the erosion of local traditions and minority cultures, as Beck (2003), Mishra (2008) and Craig (2010) have been asking for.

The results revealed that the participants calmed down when they were at home and making crafts for the home and for family members. Craft enabled a form of privacy that helped participants who were caretakers to work for the benefit of the family. They also helped employees to relax at home after a day at work. Making crafts represents a time when one is allowed to concentrate on things other than work. Similar to Myzelev's (2006) results, this study showed that craft making allows selfishness without haste. It can refresh the mind and help to clarify thoughts about experiences. Collier's (2011) term for recreation of this kind is coping. Thus, craft as an integrated activity may provide a space for reflections and the growth of internal characteristics and abilities, thus balancing the various sides of the craft makers' mind and personality. The corporal act of doing without stress and haste and the motor function of physical and bodily experiences may have helped to calm down.

The findings of this research supported those of Schofield-Tomschlin and Littrell (2001), which showed that craft making contributed to the maintenance of the actualised self and well-being. Self-expression in a self-chosen meaningful arena had improved self-esteem in a way that Fisher (1995) and Johnson and Wilson (2005) have described as craft. That kind of experiential knowing by doing may have allowed empathy and a greater understanding of life and relationships with others, as Hasio (2010) has argued. Craft offered for the participants an arena for abstract thinking and reflections.

Hence, crafts helped these participants to save money, live a family-centred life, get recreation and meaning of life. The participants had learnt to take their own time and privacy with craft making. They had also noticed the importance of personal fulfilment and development as well as the significance of family and friendships. Craft seems to have provided a link between and within generations, serving as gatekeeper to friendships and traditions. Thus, it seems that craft had helped to carry out the participants' personalised making of both objects and meaning.

CONCLUSION

Homing and downshifting as related to craft making increased the participants' sense of well-being. It can be argued that craft had a significant role in the participants' everyday life because it offered a tool to handle the demands of the contemporary throwaway and success-based culture and hectic pace of life. Homing and downshifting enabled by craft making may indicate one example of the kind of lifestyles and values that may take place in countries where basic stability and security is achieved and economic growth will not significantly increase well-being. Craft may be seen as one example of meaningful life activities that contribute to a healthy lifestyle because it makes a subjective contribution to inner well-being and life experience. However, craft making seems to have a place in the family economy, particularly among downshifters.

Homing and downshifting enabled by crafts can be seen as environmental actions. Most of the craft makers in this study were tired of the atmosphere of over-consumption and commercialism. Recycling, re-using, retuning and handwork, for instance, in addition to building, modifying or repairing something without the aid of experts or professionals may help individuals to appreciate the environmental consequences of actions.

It may be concluded that making crafts may awake the same kinds of processes as other artistic productions, raising the participants' awareness of the impact of one's actions and practices in the context of the well-being of the larger community.

The aim of homing and downshifting through crafts as enhancers of well-being has meant not just coping at work or at home for the participants in this study, but creating ecological conditions suitable for human life: a new way of life, and a tool against a stress-filled life. It may be concluded that craft making may help to promote both well-being and sustainable development at school and later in the life among those who are interested in crafts. However, further study is needed to explore the wider positive effects of making by hand as a basic intention of human activity.

> *I feel sick of the contemporary disposable consumer culture. Stores are filled with trinkets with a lifetime of months – the season after they are nearly waste. Handicrafts mean a natural way of being. Even the materials help me get well-being…. There is so much vain illusion. People should do with hands more and talk less, so maybe the world would be a happier place to live (woman No 47, 37 yrs).*

REFERENCES:

Anttila, P. (1993). *Käsityön ja muotoilun teoreettiset perusteet* [The theoretical basis for craft and craft design]. Helsinki: WSOY.

Aubin, G., Hachey, R., & Mercier, S. (1999). Meaning of daily activities and subjective quality of life in people with severe mental illness. *Scandinavian Journal of Occupational Therapy, 6*(2), 53–62.

Baudrillard, J. (1998). *The consumer society: Myths and structures.* London: SAGE.

Beck, U. (2003). *What is globalization.* Cambridge: Cambridge University Press.

Bogdan, R. C., & Biklen, S. K. (2006). *Qualitative research for education. An introduction to theories and methods.* 5th ed. Boston: Allyn & Bacon.

Burt, E. L., & Atkinson, J. (2011). The relationship between quilting and wellbeing. *Journal of Public Health, 34*(1), 54–59.

Collier, A. F. (2011). The well-being of women who create with textiles: Implications for art therapy. *Journal of the American Art Therapy, 28*(3), 104–112.

Cooper, T. (2005). Slower consumption: Reflections on product life spans and the 'throwaway society'. *Journal of Industrial Ecology, 9*(1–2), 51–67.

Craig, G. (2010). Altruism, activism and the moral imperative in craft. In *Society of North American Goldsmiths Conference*, 11 March 2010. Houston, USA. Retrieved May 23, 2012, from http://www.scribd.com/doc/28427281/Altruism-Activism-and-the-Moral-Imperative-in-Craft

Dickerson, A., & Kaplan, S. H. (1991). A comparison of craft use and academic preparation in craft modalities. *American Journal of Occupational Therapy, 45*(1), 11–17.

Dissanayake, E. (1995).The pleasure and meaning of making. *American Craft, 55*(2), 40–45.

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107–115.

Evans, D. (2012). Beyond the throwaway society: Ordinary domestic practice and a sociological approach to household food waste. *Sociology, 48*(1), 41–56.

Griffiths, S. (2008). The experience of creative activity as a treatment medium. *Journal of Mental Health, 17*(1), 49–63.

Fisher, P. A. (1995). Successful aging, life satisfaction, and generativity in later life. *International Journal of Aging & Human Development, 41*(3), 239–250.

Hamilton, C., & Mail, E. (2003). *Downshifting in Australia. A sea-change in the pursuit of happiness*. Discussion Paper number 50. Canberra: The Australian Institute.

Hari, R. (2011*). Käsillä tekemisen voima* [The power of using your hands]. Retrieved August 2, 2012, from http://www.youtube.com/watch?v=CYUlhonq4pQ

Harvey, D. (1989). *The condition of postmodernity: An enquiry into the origins of cultural change*. Cambridge, Mass.: Blackwell.

Hasio, C. (2010). Veterans and an arts and crafts programme: A community of understanding and hope. *International Journal of Education through Art, 6*(1), 75–84.

Hoikkala, T. (1994). Mies, kasvatus ja auktoriteettiasema [Man, education and the position of authority]. In J. P. Roos & E. Peltonen (Eds.), *Miehen elämää* [Man's life] (pp. 86–105). Helsinki: SKS.

Homing (Lebensart). (2012). Retrieved August 2, 2012, from http://de.wikipedia.org/wiki/Homing_(Lebensart)

Ihatsu, A.-M. (2002). *Making sense of contemporary American craft*. Academic dissertation. University of Joensuu, Publications in Education, 73.

Inglehart, R. (1997). *Modernization and postmodernization: Cultural, economic and political change in 43 societies*. Princeton: Princeton University Press.

Johnson, C. J., & Wilson, L. E. (2005). 'It says you really care': Motivational factors of contemporary female handcrafters. *Clothing & Textiles Research Journal, 23*(2), 115–130.

Johnsson, H., Josephsson, S., & Kielhofner, G. (2001). Narratives and experience in occupational transition: A longitudinal study of the retirement process. *American Journal of Occupational Therapy, 55*(4), 424–432.

Juniu, S. (2000). Downshifting: Regaining the essence of leisure. *Journal of Leisure Research, 32*(1), 69–73.

Kodin kaikki kuviot [Homing]. (2012). Retrieved August 2, 2013, from http://www.homing.fi/valikko/kodin_kaikki_kuviot.html

Klein, H. K., & Myers, M. D. (1999). A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly, 23*(1), 67–93.

Kojonkoski-Rännäli, S. (1998). *Ajatus käsissämme. Käsityön käsitteen merkityssisällön analyysi* [The though in our hands. An analysis of the meaning of the concept handicraft]. Academic dissertation. University of Turku, 1998: A185.

Kopomaa, T. (2008). *Leppoistamisen tekniikat* [Techniques to downshifting]. Helsinki: Like Kustannus.

Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. *American Journal of Occupational Therapy, 45*(3), 214–222.

Lampikoski, K., & Lampikoski, T. (2000). *Kuluttajavisiot – näköaloja kuluttajakäyttäytymisen tulevaisuuteen* [Consumer visions – The prospects for the future of consumer behaviour]. Porvoo: WSOY.

Levy, N. (2005). Downshifting and meaning in life. *Ratio, 18*(2), 176–189.

Lincoln, Y. S., & Cuba, E. A. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage Publications.

Littrell, M. A., Reilly, R., & Stout, J. A. (1991). In home business: Profiles of successful and struggling craft producers. *Home Economics Research Journal, 20*(1), 26–39.

Mason, R. (2005). The meaning and value of home-based craft. *International Journal of Art & Design Education, 24*(3), 261–268.

Mayring, P. (2007). On generalization in qualitative oriented research. *Qualitative Social Research FQS, 8*(3). Retrieved February 4, 2010, from http://nbn-resolving.de/urn:nbn:de:0114-fqs0703262

Mishra, G. (2008). Globalization and culture. *State of Nature. An online journal of radical ideas.* Retrieved July 15, 2012, from http://www.stateofnature.org/globalizationAndCulture.html

Myzelev, A. (2006). Whip your hobby into shape: Knitting, feminism and construction of gender. *Textile: The Journal of Cloth and Culture, 7*(2), 148–163.

Nelson, N. J., Labat, L. L., & Williams, G. M. (2002). Contemporary Irish textile-artists: Exploring experiences of gender, culture, and artistic medium. *Clothing and Textiles Research Journal, 20*(1), 15–25.

Parent-Thirion, A., Fernández Macías, E., Hurley, J., & Vermeylen, G. (2007). *Fourth European working conditions survey.* Luxembourg: Office for Official Publications of the European Communities. Retrieved May 4, 2012, from http://www.eurofound.europa.eu/pubdocs/2006/98/en/2/ef0698en.pdf

Raatikainen, L. (2008). *Asiakas, tuote ja markkinat* [Customer, product and market]. Helsinki: Edita.

Rojek, C. (1995). *Decentring leisure. Rethinking leisure theory.* London: Sage.

Saarenheimo, M. (2003). *Vanhuus ja mielenterveys. Arkielämän näkökulma* [Aging and mental health. The everyday life perspective]. Helsinki: WSOY.

Schofield-Tomschlin, S., & Littrell, M. A. (2001). Textile handcraft guild participation: A conduit to successful aging. *Clothing and Textiles Research Journal, 19*(2), 41–51.

Shama, A. (1981). Coping with stagflation: Voluntary simplicity. *Journal of Marketing, 45*(3), 120–134.

Siltala, J. (2007). *Työelämän huonontumisen lyhyt historia: Muutokset hyvinvointivaltioiden ajasta globaaliin hyperkilpailuun* [A brief history of the deterioration of working life: Changes in the time of welfare to hyper-competition]. Keuruu: Otava.

Song, Y. I. K. (2009). Community participatory ecological art and education. *International Journal of Art & Design Education, 28*(1), 4–13.

Torvi, K., & Kiljunen, P. (2005). *Onnellisuuden vaikea yhtälö* [Happiness as a difficult equation]. Evan kansallinen arvo- ja asennetutkimus 2005. Elinkeinoelämän valtuuskunta. Helsinki: Yliopistopaino.

Upitis, R. (2009). Developing ecological habits of minds through arts. *International Journal of Education & the Arts, 10*(26). Retrieved November 3, 2010, from http://ijea.ed.uiuc.edu/v10n26/v10n26.pdf

Valtonen, A. (2004). *Rethinking free time: A study on boundaries, disorders, and symbolic goods.* Academic dissertation. Helsinki School of Economics, 236.

Venkula, J. (2005). *Tekemisen taito: Alussa oli teko* [The skill: In the beginning was the deed]. Helsinki: Kirjastudio.

Verdan, C. (Ed.). (1979). *Tendon surgery of the hand.* Edinburg: Churchill Livingstone.

von Busch, O. (2010). Exploring net political craft: From collective to connective. *Craft Research, 1*(1), 113–124.

Semiotic working process as a basis for children´s craft process: An experiment in Finnish pre-school group

Marja-Leena Rönkkö and Juli-Anna Aerila

University of Turku, Finland

ABSTRACT

In Finland, basic education embraces a number of cross-curricular themes, including sustainable development. These cross-curricular themes cannot be confused with discrete school subjects, but are to be taught via the principle of integration through the contents of established class-subjects. Pre-school education in Finland establishes sustainable development as the centre of a 'key content' area. However, while teachers value cross-curricular themes, such as sustainable development, many find teaching them to be challenging. Appropriate learning materials and methods for teaching cross-curricular themes are lacking. This article describes an experiment in which a literature-based semiotic working process and the craft process are combined. The semiotic working process is a literature-based teaching method that has been developed especially for education and reading fictional literature. The craft process contains in itself many themes and covers the basic skills of sustainable development. Our research material consists of anticipatory stories collected through storycrafting. Anticipatory story method means predicting the continuity of a fragment of a story. The storycrafting method is implemented in this study as an anticipatory story based on a fragment of a fictional text. Another part of the data is character descriptions and the characters themselves made by children using craft materials and techniques. The character is made using the concept of a holistic craft where the maker designs, produces and evaluates the whole process. The semiotic working process and the craft process have not been previously connected, but it seems that they suit each other well and that the consistency and quality of teaching increases through this merger.

Key words: semiotic working process, storycrafting, literature, craft

INTRODUCTION

Sustainable development has been a part of the Finnish education system for nearly forty years. It can be seen in education through the content, the learning materials, the working methods, the learning environment and in educators' actions in day care centres and schools (Niemi, 2012). In addition, sustainable development is often broken up into sub-groups. Ecological sustainable development manages the preservation of natural diversity, whereas economic sustainable development concentrates on the even growth of the economy. Social sustainable development attempts to encompass issues of people's equality and welfare guarantee. Creating sustainable culture upholds the health and well-being of all human beings (Kyrö & Suojanen, 1999).

In Finland, the ideology of sustainable development is part of all mainstream teaching so as to secure the positive opportunities of the moment for present and future generations (see e.g. Sustainable Development). As a cross-curricular theme, sustainable development runs throughout basic education and is part of key pre-school education content: "The environment and natural sciences" (National Curriculum Guidelines on Early Childhood Education 'ECEC', 2005). However, a survey conducted by the National Board of Education in Finland regarding cross-curricular themes shows that most teachers in basic education and pre-school find the implementation of cross-curricular themes (such as sustainable development) challenging, as there are currently no teaching methods or models concerning them in use (Niemi, 2012).

In this article, sustainable development is approached from the perspective of craft and its associated teaching methods. Sustainable development in craft can be maintained through the choice of materials and working methods as well as the kinds of products that are manufactured. It can also be considered a means of self-expression and bettering human welfare. Moreover, simply learning to manufacture a product by oneself can be seen as sustainable development. The semiotic working method, also presented in this article, is an art-related method we believe to be applicable to using sustainable development in an educational context. The semiotic working process emphasises the learner's problem-solving skills and innovative thinking and allows cooperation between the various actors. All these skills are required when learning about sustainable development (see e.g. Kyrö & Suojanen, 1999).

Pre-school education in Finland

In Finland, pre-school education is free and voluntary, but nearly all 6-year-olds participate in pre-school education. The aim of pre-school education is to promote the child's development and learning abilities, and to improve the child's social skills and self-esteem through play and positive learning experiences. It is also important to identify the children's developmental and learning problems so they may be addressed or even prevented before the beginning of school. Municipalities are responsible for organising pre-school education, which is comprised of at least 700 hours, or an average of four hours a day (ECEC in Finland, 2004).

Pre-school education is based on playing, use of imagination and activities based on the child's level of development so as to promote the child's language development and learning capacity. The aim is that the pre-school child's positive self-image is strength-

ened and his ability to learn skills develops. In pre-school education, children acquire basic knowledge, skills, and abilities in different areas of their lives and under different conditions. The main responsibility for the implementation of these different objectives in pre-school rests on the pre-school teacher, who is usually a class or kindergarten teacher (ECEC in Finland, 2004). In Finland, pre-school education is based on integrative teaching, which, in turn, is based on key content areas, not school subjects. The key content areas are as follows: 'Language and Interaction,' 'Mathematics,' 'Ethics and Outlook on Life,' 'The Environment and Natural Sciences,' 'Health, Physical, and Motor Development,' and 'Art and Culture' (National Curriculum Guidelines on ECEC, 2005).

Currently, all Finnish pre-school education is seen as a whole in which care, education and teaching are interrelated and based on interaction. It is especially important that learning takes place in child-specific activities through playing, moving, studying and exploring different areas. Early childhood education especially stresses art-related ways of learning. In the arts, the child has the opportunity to experience a fantasy world where anything is possible. This kind of action strengthens the child's welfare and increases their opportunities to participate more actively (Core Curriculum for Pre-school Education in Finland, 2000; National Curriculum Guidelines on ECEC in Finland, 2005). Moreover, the high quality of art-related education has a positive effect on a child's well-being, self-esteem and identity development (Bamford, 2009).

When children act by themselves in a holistic way, they simultaneously express their thinking and feelings. When educators act and discuss those actions with a child, observing the child's reactive behaviour, a channel to the child's thinking and world opens to them (Core Curriculum for Pre-school Education in Finland, 2000; National Curriculum Guidelines on ECEC in Finland, 2005). Art-related education affects the learner, the learning, and the teaching environment, as well as the entire community. Art-related education should always focus on education through the arts (Bamford, 2009). By following the aims of art-related education, a child's creativity, thinking and visual skills are developed. Craft and literature provide ways to practise the arts through art-related education.

The experiment described in our article closely resembles the Reggio Emilia approach to kindergarten education. Regarding the planning of curricula and activities for children under school age, two contrasting views have been put forward. The first defines planning as a method of work that establishes, in advance, general educational objectives, along with specific objectives for each activity. The second view defines planning as a method of work in which the teachers lay out general educational objectives but do not formulate the specific goals for each project or each activity in advance. Instead, they formulate hypotheses of what could happen based on their knowledge of children and previous experiences. Along with these hypotheses, they formulate objectives that are flexible and adapted to the needs and interests of the children. This approach requires the teacher to offer him/herself as a resource person to whom the children can turn. The task of the teacher is to help children ask good questions and discover their own answers (Rinaldi, 1998). In our experiment, we tested the second view. We planned the experiment thoroughly and gave the children organised spaces, materials, thoughts, situations and occasions for learning without pre-constituted paths or tests, so that the children were allowed to make many individual choices during the activity.

THEORETICAL FRAMEWORK

Craft in pre-school education

In Finland, craft making is a significant activity, although the meaning of crafts has undergone many social and cultural changes. For instance, crafts have an established presence that has been separate from art. Indeed, craft making has been a separate school subject for roughly 150 years. In other parts of the world, craft making as a subject has disappeared, either due to social changes or because it has been folded into technology, art and design, household, or work education (Pöllänen 2009, 2011).

Craft making educates children by requiring them to design, build, create, and problem solve. Craft making and its processes affect many significant areas of child development, including bodily perception, motor coordination, visual perception and concentration (see e.g. National Curriculum Guidelines on ECEC in Finland, 2005). From the point of view of crafts, the most important concepts of this study are the holistic craft and craft process. The holistic craft process is based on the thought that all the phases are conducted by the same person (Kojonkoski-Rännäli, 1995). The holistic craft comprises all the phases of the craft-making process, i.e. the maker is in charge of developing ideas, designing, preparing, and finally assessing the artefact and the production process (see e.g. Pöllänen, 2009). Ordinary craft is when the maker only produces a design created by another designer (Kojonkoski-Rännäli, 1995).

The first phase of the craft-making process involves brainstorming for ideas and planning. The craft maker looks for stimuli and experiences and obtains information by asking, experimenting, and examining. The maker perceives the task area and the purpose and use of the product. During production, the maker produces the craft product based on his/her own skills. If necessary, the maker obtains additional information and craft skills. During assessment, the maker reflects on the production and the craft product from the points of view of usability, functionality, technical realisation, aesthetics and economics (Pöllänen, 2009; Rönkkö, 2011). The reflection focuses on learning from the craft-making process, self-orientation, and working. It also emphasises the experiences and emotions that are meaningful to the learner (Pöllänen, 2011). All these stages can also be perceived in the child's craft process.

The craft-making process closely resembles the semiotic work process traditionally used in literature education, i.e. promoting the understanding of literature as part of ethical and moral education. In this article we describe an experiment in which we tested the suitability of the semiotic working process for a child's craft process. Literature is typically used as a material for ideas in designing a craft, but use of the semiotic working process in this way hasn't been tested. Furthermore, these kinds of studies represent the minority of literature and craft studies (Luomaniemi, Lepola, & Salmela, 2010).

In this research context, children tell an anticipatory story by storycrafting. They then use these individual stories in planning and implementing a craft product. In preparing the craft, the children practice their craft skills and creativity. The child's activity is reviewed in the context of the semiotic working process.

Semiotic working process

The heart of the semiotic working process lies in children's literature and literature education. In Finland, literature is used in pre-school education daily. Children's literature is suitable for early childhood education as an object or tool of learning and as teaching material for literature-based education. In addition, literature is important to entertainment and relaxation in everyday preschool life (Aerila & Sarmavuori, 2010). Using children's literature in early childhood education and pre-school education is in accordance with the National Curriculum Guidelines on ECEC in Finland (2005) even though its role in education is not described in detail. Most commonly, children's literature is used in day care as part of literature-based education, where literature – together with art education techniques – is used to support a child's growth (Luoto & Luoto, 2001). Many research-based studies have demonstrated that literacy skills develop better when reading literature is connected with different kinds of activities (Luomaniemi et al., 2010). The contexts that support a child's engagement are one of the major strands of research on children's literature. Many researchers have pointed out that reading literature increases children's knowledge of the world and of text patterns (Galga, Ash, & Cullinan, 2000).

The semiotic working process has three stages and is based on the semiotic theory of Juri Lotman. These stages of the semiotic working process are as follows: 'Motivation and activating the individual learner's schemas,' 'Understanding and concretising individual understanding by doing', and 'Interpretation and evaluation' (Toivonen, 1998; Aerila, 2010; see Figure 1).
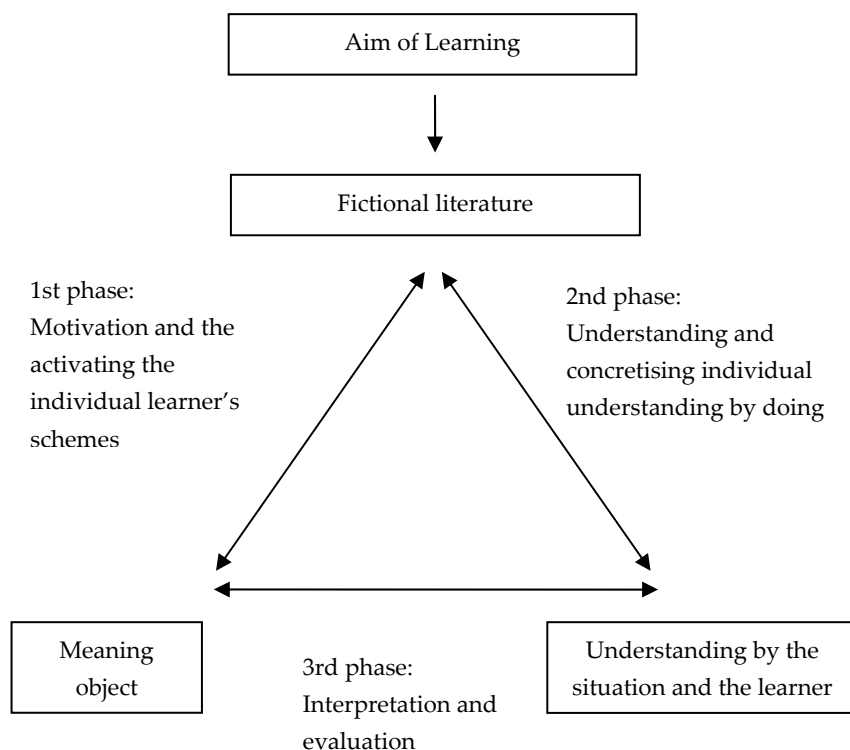

Figure 1. The stages of the semiotic working process (Toivonen, 1998)

The starting point of the semiotic working process is a fictional text, which is called the mother text. Each step of the working process has its own objectives and working methods. The steps may be repeated several times if necessary, and the repetition of the second phase requires the repetition of the third stage (Toivonen, 1998; see Figure 1).

The aim of the first stage is to get students to think of the selected aim of learning. The aim can be developing, for instance, friendship, multiculturalism, some other value, or the understanding of a fictional text, as in this case. At this stage, teachers can use discussions as teaching method or, for instance, explore other materials related to the target of learning. The other materials are called intertexts. During the first phase of the working process, it is not necessary to read the mother text at all (Toivonen, 1998; see Figure 1).

During the second phase of the process, the learners are expected to make their own mental interpretants concrete by supplementing the message to be read and learned with their own actions. The mental interpretant can be produced by verbal means and/or by means of pedagogic drama, producing pictures, visual messages, music, etc. At this stage, it is important that learners are able to implement their own ideas as freely as possible within the framework of the task (see Figure 1).

The last phase is about interpreting and evaluating the individual interpretants made in second phase of the semiotic working process. In 'Interpretation and Evaluation' children compare their interpretants to others and to the mother text. They also explain and defend their own interpretant. In the third phase, the obligatory teaching method used is discussion in small groups or among the whole group. If necessary, in view of understanding the mother text, one can also use intertexts and compare them to children's interpretants. The aim of the third phase is to understand one's own understanding and accommodation or assimilation of individual schemas. It is important that the processes of evaluating and interpreting focus on the schemas activated in the first phase (Toivonen, 1998; see Figure 1).

To help the interpretation and evaluation of one's interpretant, a different mapper can be used. Toivonen has developed a meaning clue analysis which is based on the discourse analysis. Its' aim is to concretise and cohere the phase of interpretation and evaluation (Toivonen, 1998; Figure 1).

METHOD

The experiment was carried out in a kindergarten during the spring of 2012. The main focus of the study was on testing the use of the semiotic working process method and literature as material for the craft activities and connecting the perspective of sustainable development to the different phases of the craft-process. The research was steered by the following question: *Is it possible to connect the semiotic working process and the craft process?* This research question is answered by examining how literature and the semiotic working process affect a child's craft process. Moreover, *is it possible to use the structure of the semiotic working process to describe a child's craft process in a more detailed and target-orientated way?*

Data were collected from a preschool group in a small commune in Satakunta. The preschool group consisted of 14 children: eight boys and six girls. Four children were not able to participate in our study because they were not present at the day care during the whole study. For this reason, seven boys and three girls participated. We chose this preschool because its philosophy highlighted art education.

The data consist of products made by children during the experiment: anticipatory stories, drawings based on the anticipatory stories, craft designs and craft products. The data are used to examine the progression of the children's craft processes and the connection between the semiotic working process and the designing and manufacturing of a craft product. The research data is supported by interviews conducted with the children after the craft process. The purpose of these interviews is to examine the child's own assessment of his/her craft products, as well as the whole process of designing and manufacturing his/her own product. All the activity hours were videotaped. This video material was only meant to annotate the children's activities and actions.

Data analysis was conducted using content analysis, a method that can be variously adapted to qualitative studies. The aim of content analysis is to create a clear and uniform description of the phenomenon to be examined. The material is first broken down into the parts and then collected and reconceptualised as a logical whole (Krippendorff, 2004). Content analysis was used in this study to examine the children's individual activities and to categorise those activities during the semiotic working process.

RESULTS

Application of semiotic working process in this study
We executed the semiotic working process and the craft process as follows. For the mother text, we chose Leena Laulajainen's fairy tale 'Kumma kirje' ([The strange letter], 2011). It is a fictional story about imaginary animals that receive a mysterious letter. None of them can read, so they cannot figure out the meaning of the letter. This story is representative of current popular texts for children in which the aim of the text is to make clear the importance of learning to read and write. In 'Kumma kirje', the animals try to determine the meaning of the letter by looking at and smelling the letter. It has the number thirteen on it, which makes the animals afraid, as it is an unlucky number. In addition, it smells a bit like gingerbread, which leads them to think about the witch living in the woods. Finally, they come to think of an elf they know, and he tells them that it is an invitation to a birthday party. In the end, they have a party and read a book about the meaning of reading. From the craft point of view, this text was relevant because of the imaginary animals and the feelings described in the story. We hoped they might inspire the children in designing their own character.
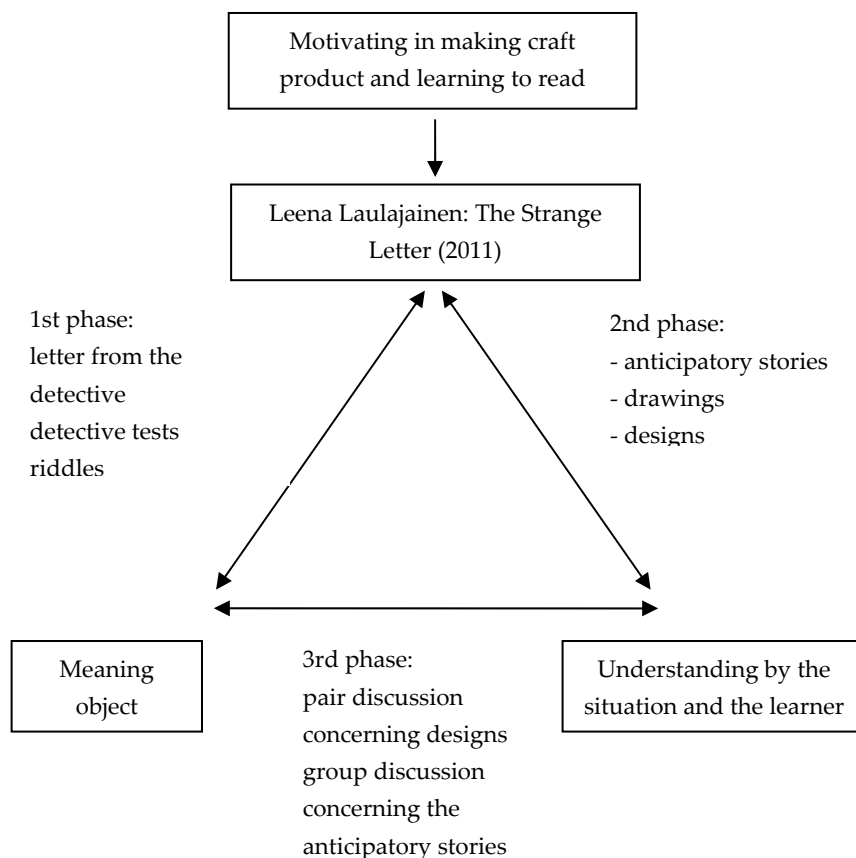
	Motivating in making craft product and learning to read	
	↓	
	Leena Laulajainen: The Strange Letter (2011)	

1st phase:
letter from the
detective
detective tests
riddles

2nd phase:
- anticipatory stories
- drawings
- designs

Meaning object	3rd phase: pair discussion concerning designs group discussion concerning the anticipatory stories	Understanding by the situation and the learner

Figure 2. The phases of the semiotic working process in the current study

First phase

The first stage was executed before reading the mother text at all. It started with a letter written by the researchers. The letter was from a fictional detective who needed help. He had an assignment in which he had to solve a mystery involving a story. The story had no ending, and the pre-school children were asked to help him with the ending. The purpose of the letter was to prepare the children for telling the anticipatory stories. The letter also contained some 'detective tests' for the children. The meaning of these problem-solving assignments was to show how being a detective resembles reading. The other working method in the first stage was aimed at activating the schemas of learning to read. In this assignment, the children had to combine a riddle and a picture, and thus the assignment was also linked to the detective theme. The last assignment helped the children in the pre-school and the upper-school (eight-former) to get to know each other (see Figure 2).

Second phase

The second stage started by reading the mother text. When implementing the assignment's second phase, it was very important that the reading of the mother text be interrupted at a turning point in the story. The turning point enables the participants in the

semiotic working process to create various interpretations of the mother text. In our study, the reading of the mother text was interrupted when the letter's meaning was just about to be revealed.

The first assignment in the second phase was writing an anticipatory story by story-crafting about the ending of the mother text. The storycrafting method is a Finnish invention that promotes equal possibilities for the participants in a dialogue. It is a method for creating stories in conjunction with listening and writing. Using the storycrafting method, children can be heard in the way they want to be heard. They can express themselves with words, drawings and activities of their own choosing (see e.g. Karlsson, 2003). In our study, the storycrafting method was used because none of the preschool children could write. In the practice, each child told their own story ending to an older student who wrote it down verbatim. In this study, the upper-school (Form 8) pupils took part in storycrafting and wrote down the children's stories (see Figure 2).

After storycrafting came the second assignment: making a drawing about the anticipatory story. This was considered necessary because there is some evidence that some children who cannot read or write perhaps express themselves better by drawing (see e.g. Heilä-Ylikallio, & Oker-Blom, 2006; Sloan, 2009). The illustrations were complemented by verbal information which the older students wrote on the pictures (see Figure 2).

The third assignment was deciding who sent the letter and making a design of it on a ready-made model. They described the kind of figure the sender of the letter was (its colour, form, details, important characteristics, etc.). Based on the drawing, the children designed their own figure including details (see Figure 2).

The fourth and final assignment in the second phase of the semiotic working process was producing the character. The children cut the fabric (felt) according to a pre-established pattern. They chose the pattern shape (e.g. square, circle, triangle) such that it reflected the face shape of the character. Then, the children sewed their unique characters by hand and decorated them with embroidery and cloth printing. They dyed the cloth based on their design (e.g. the colour or kind of 'skin' they thought the character had). They added details and decorated them by stamp printing, sewing buttons or embroidering easy stitches (see Figure 2).

Third phase

In the third stage of the semiotic working process, the children discussed their own creatures and the design and production of the product based on the design. They also got to hear all the anticipatory stories and the original ending. All the children's mental interpretants were compared with other interpretants and the original one. Ideally, the third phase would come straight after each assignment in the second phase, but since the meaning of this experiment was to support the craft process with the semiotic working process, we decided that it would be best if we made different assignments in a row aimed at manufacturing a product (see Figure 2).

Semiotic working process described though one child

The following paragraphs present one of the children's processes. We describe the process from the second phase onwards because all the children participated in assignments in the first phase as a group.

Second phase

In the anticipatory story of Ella, the sender of the letter was a dog called Supi. The letter was an invitation because Supi has a birthday party, as he is turning 13 years old. In the mother text, the letter was also an invitation to a birthday party, and we expected the children to figure that out, as they should be very familiar with birthday invitations. Five of the children, including Ella, described the topic of the letter. Ella's anticipatory story has a strong connection to the mother text: the dog called Supi was from the mother text and Ella's main idea in her story is the letter, which was the purpose of the mother text as well.

> *Then they will think of where they will go next. They found their own owners. The owners will find the sender of the letter; it was from Supi-dog. The dog called Supi had a birthday party. He turned 13 years old. They were wondering if they would go there. At the birthday party, Supi served all kinds of delicacies. The others brought Supi presents: a ball, a soft toy and many other toys (Ella, personal communication, February 2, 2012).*

Ella's drawing clearly illustrates her anticipatory story and the mother text. In her illustration, one can see the friends that have been invited to the party—including a parrot, bear, fox, bunny, etc. The parrot and the bunny were characters from the mother text and the structure of the mother text was showing the letter to different real and imaginary animals (see Figure 3).

Figure 3. Ella's illustration

Ella chose the Supi-dog for her character. Supi-dog is also the main character in her anticipatory story. She chose a round shape as the face of Supi-dog. In Ella's design, Supi-dog has black eyes, a nose, whiskers and ears. Its skin is dotted (see Figure 4).
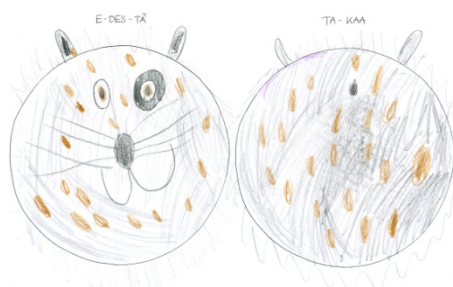

Figure 4. Ella's design

Ella's product closely resembles her design. She has created the dog's dotted skin out of felt using stamp printing. The eyes and nose are made of buttons; the whiskers are thread, and the ears are braided wire.

At the production stage, she added paws to the dog. Ella prepared the details purposefully and sewed the dog. She followed the instructions she received and got ideas for her own product during the holistic process. Her work suggested that she was used to doing crafts and interested in it. She knew how to plait strings and went through the process independently (see Figure 5).

Figure 5. Ella's character

Third Phase

In the third stage, Ella presented her anticipatory story and talked about her design and the character. She had no previous experience with storycrafting, but she liked the method and the attention she got from the older student. She was able to describe the process and different stages of the production. She thought that the process helped her in making the character look the way she imagined it. Ella also thought she had learned new craft techniques.

CONCLUSION

The anticipatory stories in this study were made by storycrafting. The children did not have any storycrafting experience, but they all liked it and were happy with the results. The best part was that the children got plenty of personal attention from an older individual. In our case, these individuals were older students, and the experience was very positive for them as well. Our study tested the way different art-education forms support each other and the kinds of information that can be obtained in different phases of the semiotic working process. Table 1 below shows how these different working methods support each other, as for instance, in Ella's design and production process.

Table 1. Correlations between working methods

Child	Mother text	Anticipatory story	Illustration	Design	Character
Ella	letter	sender of letter (Supi-dog)			

———————→   The child's process continues fluently

In this study, the uniformity of the different stages of the craft process and of the semiotic work process was emphasised. In both processes, their multiformity and comprehensiveness are displayed. Furthermore, both processes require the ability to solve problems using the materials at hand and innate creativity. Even though the operation itself proceeds spirally, going forward and returning backwards, the different stages can be separated from the process (see e.g. Rönkkö, 2011). The first stage, brainstorming and planning, orients the child to the future task. In this study, the creation of images was carried out through storycrafting and illustrating that crafted story. On the basis of these stories, the children designed 'the softie character'. During the production stage, the children carried out their visual plan while developing their own craftsmanship. They made decisions during the process of making the character and will reflect those decisions at different stages. In the evaluation stage, the maker will examine the process while considering usability, technical realisation and aesthetic character, taking into account all the thoughts and choices that came to bear on this 'making'. She will reflect on her own process.

Table 2 shows the most central aspects of literacy and the craft process and their connection to the phases of the semiotic working process and to each other.

Table 2. Central aspects of literacy and the craft process in the framework of the semiotic working process

Semiotic working process	Literacy and value based education	Phases of craft process
First phase:		
Letter and detective tests	Motivating and understanding what reading is about	Brainstorming/creating mental images
Riddles	Linguistic awareness and literacy	Brainstorming/creating mental images
Second phase:		
Anticipatory story by story-crafting	Understanding fictional texts, values and attitudes concerning the chosen schema and literacy	Brainstorming/visualising mental images
Illustration	Understanding fictional texts, values and attitudes concerning the chosen schema and literacy	Brainstorming/visualising mental images
Design	Understanding fictional texts and vocabulary (shapes)	Designing of character/ concretising one's own image and aesthetical skills
Production	Understanding fictional texts, literacy and motor functions	Production/different kind of craft techniques, development of motor functions
Third phase		
Group discussion and presenting products (anticipatory story, illustrations, design and characters)	Understanding and evaluating different interpretations of the mother text	Assessment and self-reflection of whole process

DISCUSSION

The semiotic working process is a method that is particularly suited to a value-based education. As a method, it may be particularly appropriate for cross-curricular themes, such as sustainable development. This method has previously been tested in multicultural education (Aerila, 2010), and hopefully, this research's practical application of the semiotic working process may provide educators with the capability to process the themes of sustainable development in education. This article describes the combining of the semiotic working process with the craft process, which in itself includes a number of features of sustainable development ideology. In the future, the efficiency of the method in studying sustainable development themes should be tested in conjunction with a mother text including such themes. In this way, it might be possible to find out more about children's values and attitudes concerning sustainable development, as well as changes in those values.

This study shows that teaching in preschool groups is most effective when it is carefully planned and learning philosophies are linked together. By combining the semiotic working process with the craft process, we were able to reach most of the learning orientations with art-based education in three days, including drama, linguistic awareness activities, literature, listening and reading comprehension, mathematics, using scissors, sewing, drawing, copying a model, working in groups, working in pairs, craft making, etc. This experiment also highlights the need for additional research and experiments with the use of children's literature in day care. Too often, literature is used only for free-time reading or enjoyment, when it could be at the heart of all learning (Toivonen, 1998; Galga et al., 2000).

We were able to formulate working methods and activities that had specific targets, but were still flexible and met the needs and interests of the children. In the Reggio Emilia approach, the child is seen as being rich in resources and an individual with rights rather than simply needs. According to Reggio Emilia, children have potential, plasticity, openness, the desire to grow, curiosity, a sense of wonder and the desire to relate to other people and communicate (Rinaldi, 1998). Our study showed that children are able to achieve challenging learning objectives when they are allowed to fulfil their own needs and when adults offer themselves as resources to which the children can turn. We hope that the role of teacher is changing from being instructive to being present as a source of information and guidance. In addition, we hope to see the curriculum become more flexible, making the different methods of action possible.

Children experience their own thoughts, experiences and observations as meaningful (see e.g. Fernström & Laamanen, 2006; Rönkkö, 2011). Craft making is mainly a goal-orientated action in which the thoughts of the maker become concrete through the design and later in a product (Lepistö & Rönkkö, 2009). In early childhood education, this does not necessarily mean that every craft-making operation ends in the making of a product based on the design. Working with one's hands can lead to joy in the operation itself (Karppinen, 2009). Moreover, Karppinen (2009) states that the pleasure derived from self-made products should not be underestimated.

In craft making, attention must be paid to the materials, tools and technologies that are used, especially in early childhood education. The children should be allowed to reflect

on their own worldviews and on matters that are important to them (e.g. in the design). One can use this to help with, for instance, storycrafting. The chosen craft methods must not be too demanding for the children. Differences in the actions of more experienced craft makers will become evident at different stages of the process. The children should face challenges suitable to them in their zone of proximal development with the guidance of an adult (see e.g. Vygotsky, 1934/1986). The adult's task is to help in the craft-making process so that the next time, the child can pass through the same stage independently and reflect on their own craft making. At the same time, the ecological, social and cultural objectives of sustainable development come true: worth the expense, high-quality materials are used, the children are given reasonable goals, and the development of the child's self-esteem is supported in a sensible way.

This teaching and study experiment was useful. It encouraged the kindergarten teachers and child-minders to work with the children in new ways. Even though the study conditions were somewhat accelerated in operation, the basic principles were clear to them. Obtaining and examining the research materials required a commitment to the operation from both the staff and children. Several matters could have been dealt with differently. In this study, we especially wanted the children to reflect during the process. The children's voices would have been clearer if we had interviewed children at every stage in more detail. It would have been interesting to frame the research by focusing on how the craft process improved the storycrafting.

ACKNOWLEDGEMENT

REFERENCES:

Aerila, J.-A. (2010). *Fiktiivisen kirjallisuuden maailmasta monikulttuuriseen Suomeen. Ennakointikertomus kirjallisuudenopetuksen ja monikulttuurisuuskasvatuksen välineenä* [From the world of fiction literature into multi-cultural Finland. Anticipatory story as an educational tool in teaching of literature and multiculturalism]. Unpublished doctoral dissertation, University of Turku, Turku, Finland.

Aerila, J.-A., & Sarmavuori, K. (2010). Kuvakirjat ja sadut porttina kirjallisuuden maailmaan ja osana varhaiskasvatusta [Picture books and fairy tales as gate to the world of the literature and as part of the early childhood education]. In R. Korhonen, M.-L. Rönkkö & J. Aerila (Eds.), *Pienet oppimassa. Kasvatuksellisia näkökulmia varhaiskasvatukseen ja esiopetukseen* [Small children learning. Educational points of view to early childhood education and preschool education] (pp. 32–44). Turku: University of Turku, Department of Teacher Education in Rauma.

Bamford, A. (2009). *The wow factor. Global research compendium on the impact of the arts in education*. Berlin: Waxmann. *Core Curriculum for Pre-school Education in Finland*. (2000). Helsinki: STAKES.

ECEC in Finland. (2004). Brochures of the Ministry of Social Affairs and Health 2004:14. Helsinki: Ministry of Social Affairs and Health.

Fernström, P., & Laamanen, T.-K. (2006). Tarinat ja mielikuvat käsityön suunnittelun lähtökohtina [Stories and images as starting points for the designing of the craft]. In L. Kaukinen & M. Collanus (Eds.), *Tekstejä ja kangastuksia. Puheenvuoroja käsityöstä ja sen tulevaisuudesta* [Texts and loomings. Addresses about the craft and its future] (pp. 137–148). Hamina: Akatiimi.

Galga, L., Ash, G. E., & Cullinan, B. E. (2000). Children's literature. In M. L. Kamil, P. Mosenthal, P. D. Pearson & R. Barr (Eds.), *Handbook of reading research, III* (pp. 361–381). New Jersey: Lawrence Erlbaum Associates.

Heilä-Ylikallio, R., & Oker-Blom, G. (2006). *Språkraketen. Lärarhandledning* [Language rocket. Teacher's Guide]. Helsingfors: Utbildningsstyrelsen.

Karlsson, L. (2003). *Sadutus – avain osallistavaan toimintakulttuuriin* [Storycrafting – key to the more activating culture]. Jyväskylä: PS-Kustannus.

Karppinen, S. (2009). Kädentaidot ja käsityökasvatus [Craft skills and craft education]. In I. Ruokonen, S. Rusanen & A.-L. Välimäki (Eds.), *Taidekasvatus varhaiskasvatuksessa. Iloa, ihmettelyä ja tekemistä* [Art education in early childhood education. Joy, wondering and doing] (pp. 56–65). Helsinki: Terveyden ja hyvinvoinnin laitos.

Kojonkoski-Rännäli, S. (1995). *Ajatus käsissämme. Käsityön käsitteen merkityssisällön analyysi* [The thought in our hands. An analysis of the meaning of the concept handicraft]. Unpublished doctoral dissertation, University of Turku, Turku, Finland.

Krippendorff, K. (2004). *Content analysis: An introduction to its methodology*. 2nd ed. Thousand Oaks, CA: Sage.

Kyrö, P., & Suojanen, U. (1999). The relationship between sustainable development and entrepreneurship in the postmodern transition. *International Journal of Entrepreneurship, 3*, 30–52.

Lepistö, J., & Rönkkö, M.-L. (2009). Käsityön opetukseen sisältyy monipuolisesti taitoa, kulttuuria ja yritteliäisyyttä [A skill, culture and enterprise are included in the teaching of the craft]. In M.-L. Rönkkö, J. Lepistö & S. Kullas (Eds.), *Monialainen opettajuus. Kasvatuksellisia näkökulmia oppiaineisiin ja aihekokonaisuuksiin* [Multidisciplinary of teachership. Educational points of view to the subjects and thematic entities] (pp. 45–61). Turku: University of Turku, Department of Teacher Education in Rauma.

Luomaniemi, K., Lepola, J., & Salmela, T. (2010). Tarinoiden lukeminen lasten ymmärtämis- ja oppimisvalmiuksien tukena [Reading of stories as support of the children's understanding readiness and learning readiness]. In R. Korhonen, M.-L. Rönkkö & J. Aerila (Eds.), *Pienet oppimassa. Kasvatuksellisia näkökulmia varhaiskasvatukseen ja esiopetukseen* [Small children learning. Educational points of view to early childhood education and preschool education] (pp. 1–16). Turku: University of Turku, Department of Teacher Education in Rauma.

Luoto, T., & Luoto, S. (2001). Satu ja tarina elää päiväkodissa [The fairy tale and the story live in the day nursery]. In M. Suojala & M. Karjalainen (Eds.), *Avaa lastenkirja. Johdatus lastenkirjallisuuden lajeihin ja käyttöön* [Open the children book. Guidance into species of the children literature and into use] (pp. 184–200). Helsinki: Lasten keskus.

National Curriculum Guidelines on Early Childhood Education and Care in Finland. (2005). Helsinki: STAKES.

Niemi, K. (2012). *Aihekokonaisuuksien tavoitteiden toteutumisen seuranta-arviointi* [Follow-up evaluation of the realisation of the objectives of cross-curriculum themes]. Seurantaraportti 1:2012 [Follow-up report 1:2012]. Helsinki: Ministry of Education.

Pöllänen, S. (2009). Contextualising craft: Pedagogical models for craft education. *The International Journal of Art & Design Education, 28*(3), 249–260.

Pöllänen, S. (2011). Beyond craft and art: A pedagogical model for craft as self-expression. *International Journal of Education through Art, 7*(2), 111–125.

Rinaldi, C. (1998). Projected curriculum constructed through documentation. An interview with Lella Gandini. In C. Edwards, L. Gandini & G. Forman (Eds), *The hundred languages of children: The Reggio Emilia approach – advanced reflections* (pp. 113–125). Greenwich, Conn.: Ablex.

Rönkkö, M.-L. (2011). *Käsityön monet merkitykset. Opettajankoulutuksen opiskelijoiden käsityölle antamat merkitykset ja niiden huomioon ottaminen käsityön opetuksessa* [Craft has many meanings. The meanings of craft perceived by the students in teacher education and how they are taken into account in craft teaching]. Unpublished doctoral dissertation, University of Turku, Turku, Finland.

Sarmavuori, K. (2010). *Opi ja ohjaa kirjoittamista* [Learn and guide writing]. Helsinki: BTJ-kustannus.

Sloan, M. (2009). *Into writing. The primary teacher's guide to writing workshop*. Portsmouth: Heinemann. *Sustainable Development*. Retrieved January 13, 2013, from www.environment.fi/sustainabledevelopment

Toivonen, P.-M. (1998). *Uusien maailmojen viestit. Kirjallisuuden lukemisen semiootttis-psykolingvistinen teoria ja käytäntö* [Message of new worlds. Semiotic-psycholinguistic theory and practice of literacy reading]. Turku: University of Turku, Department of Teacher Education in Rauma.

Vygotsky, L. S. (1986). *Thought and language* (Translation newly rev. and ed. by Alex Kozulin). Cambridge, Mass.: The MIT Press.

Teacher's competences in textile technologies

Māra Urdziņa-Deruma

University of Latvia, Latvia

ABSTRACT

Teachers' competences in Latvia are determined by the Standard of the Teachers' Profession, which concerns the teachers of all subjects. However, no detailed competences are set for teachers of specific subjects. The aim of the article is to analyse what kind of competences the teachers of home economics and technologies should have in textile technologies. The methods used in the study include analysis of relevant scientific literature and policy documents, interview, survey and analysis of the author's pedagogical experience. The article reveals the author's pedagogical experience of teacher training, as well as examines the contents of textile programme in comprehensive school and at university. The competences required from the teacher in textile technologies are defined, and the link between the components of textile and the demands for the quality of textile goods are highlighted. Problem points are identified, ways of their solution are clarified, and students and their teaching practice supervisors are interviewed.

Key words: textile technologies, competences in textile technologies, teacher education of home economics and technologies, quality of textile, contents of textile technologies

INTRODUCTION

Higher demands have been set to the teachers of today both globally and in Latvia. The Standard of the Teachers' Profession (Ministry of Education and Science, 2002) states that teachers in Latvia have to be familiar with the normative documents which regulate the national education system and the teachers' activity as well as with labour legislation and the legal issues surrounding the protection of children's rights. They have to be knowledgeable in pedagogy, psychology and ethics, and ways of leading a healthy lifestyle as well as in the subject they teach, have a good command of languages and good communication skills. In addition, teachers have to develop a lot of other skills. It is clear that subject knowledge is only in a wide range of competencies to be acquired.

Since there are no standards developed specifically for the teachers of every school subject, no detailed competencies are set for the teachers of home economics and technologies either, which also include textile technologies. The situation is similar in other subjects. For instance, while discussing competences of mathematics teachers in her doctoral dissertation, Lāce (2010) argues that presently in Latvia it is not stated what a competent teacher of mathematics has to know or do.

The aim of this article is to analyse what kind of competences the teachers of home economics and technologies should have in textile technologies.

It is of great importance to be aware of the competences required in textile technologies, because, to a great extent, sustainable use of textile materials and survival of existing traditions depend on the teachers' competences.

CHARACTERISTICS OF THE TEACHERS' COMPETENCIES

The issue of teachers' competencies has been extensively studied both in Latvia and beyond. A thesaurus compiled by Latvian scientists defines competence as requisite knowledge, one's professional experience, comprehension of a certain sphere and related issues, and proficiency in using one's knowledge and experience in particular activities (Blinkena, 2000).

The Tuning Guide distinguishes between competences and learning outcomes:

> A **competence** — as we use the term — is a quality, ability, capacity or skill that is developed by and that belongs to the student. A **learning outcome** is a measurable result of a learning experience which allows us to ascertain to which extent / level / standard a competence has been formed or enhanced. Competences represent a dynamic combination of cognitive and metacognitive skills, demonstration of knowledge and understanding, interpersonal, intellectual and practical skills, and ethical values. Fostering these is the object of all educational programmes. Competences are developed in all course units and assessed at different stages of a programme. Some competences are **subject-area related** (specific to a field of studies), while others are generic (common to any degree programme) (Lokhoff, Wegewijs, Durkin, Wagenaar, Gonzilez, Isaacs, Dona dalle Rose, & Gobbi, 2010, p. 21).

Shulman (2004) discusses content knowledge and pedagogical content knowledge. Ball and Cohen (1999) argue that, first of all, teachers would need to understand the *subject*

matter they teach in ways quite different from those they learned as students. For example, they need to know meanings and connections, not just procedures and information.

Fish (1995) maintains that "good work (of a teacher) in professional practice encompasses not the pre-specified list of individual competences that take no account of context, but a repertoire of skills, abilities, capacities, *subject knowledge*, personal attributes, personality and ability to work with other professionals, together with what determines their appropriate employment according to the context in which the professional is employed (namely flexibility, educational understanding, moral awareness and professional judgement)" (pp. 158–162). She defines nine aspects of professionalism, from which the second aspect is "the student's subject or content knowledge base and associated curriculum knowledge: this is knowledge about the balance, breadth and content of the school curriculum" (pp. 158–162).

As seen in relevant documents and research studies, one of the main competences is the subject area related competence. In the context of this research they are competences in textile technologies. Acquisition of competences in textile technologies at the University of Latvia is complicated due to the fact that students receive two subject qualifications at the same time. Students of the subject "Home Economics and Technologies" have to master different themes which are rooted in various fields of science and arts, and related only indirectly. In Latvia the contents of the course "Home Economics and Technologies" consists of: home; safety; planning of household works; clothes; food; basic principles of shopping; technologies of textile, wood and metal; material cultural heritage and its role in a multicultural society (Cabinet of Ministers of the Republic of Latvia, 2006).

Dišlere (2000) argues that ever since the introduction of the subject "Home Economics and Technologies":

> there is a great variety of crafts; the teacher should be a universal craftsman - with various diplomas (e.g. a skilled plumber, tailor, cook, carpenter, etc.). It is not an exaggeration. The other problem is the application of specific professional requirements for the level of school study programme. The required craft skills – the necessary level of professionalism – is supposed, considering the relevant pedagogical environment (p. 85).

METHOD

On the basis of the pedagogical experience acquired while working as a lecturer and associate professor with prospective teachers of home economics and technologies and on the basis of previous doctoral research, the author has stated the competences required of teachers of home economics and technologies. The author has also analysed the connection between the compounds of the contents of textile and the evaluation criteria for textile goods.

The author of the article has analysed her own pedagogical experience with the aim to clarify problems in the acquisition of competences in textile technologies.

The author designed a student survey about study courses. The students of home economics and technologies (N=92) were asked two questions on the theme discussed in this article: *Are there enough contact lessons for mastering textile?* and *Are there enough contact lessons for mastering textile composition?*

The author interviewed three cooperation partners – teachers of home economics and technologies who are experienced mentors (A – 24 years, B – 29 years, C – 14 years). All the interviewed teachers have been formally acknowledged by the Ministry of Education and Science for their learners' high results at the Olympiads of home economics and technologies. The aim of the interviews was to learn the teachers' viewpoints on prospective teachers' competences in textile techniques. The author also asked them to evaluate the students' competences in textile technologies (according to the competences proposed by the author) and the students' motivation to create high-quality textile goods on a ten-point scale (10 – outstanding, 1 – exceedingly poor).

The author interviewed 7 fourth-year students of home economics and technologies before their graduation from the University of Latvia about their competences in textile technology; the other focus of these interviews was evaluation of their motivation to create high-quality textile goods (on a 10-point scale).

CHARACTERISTICS OF COMPETENCES IN TEXTILE TECHNOLOGIES NEEDED FOR THE TEACHERS OF HOME ECONOMICS AND TECHNOLOGIES

Centre of Design and Technology Education at Sheffield Hallam University has outlined a detailed minimum of competences for trainees to teach design and technology in schools, divided in the following way: 17 core competences in the context of design and technology and 30 competencies related to the field of textile technology:

1. Designing (10 competences).
2. Making (13 competences).
3. Knowledge and understanding (7 competences) (Subject knowledge audit. Design and technology).

These competencies are mostly based on industrial processes, the usage of computer technologies and the knowledge of sewing technologies, while in Latvia we respect our cultural traditions and take into account the economical situation, hence the acquisition of textile technologies is more based on the traditional learning of handicraft.

Kojonkoski-Rannali (2009) has outlined four characteristics of a maker of quality:

> ...motivation for doing good work, a sensitive ability to experience quality, a love for making and for the object of making, as well as clear-sightedness and justice when evaluating quality in one's own area of expertise which results from deep knowledge and expertise. In addition, the maker of quality needs abundant knowledge of materials, tools (including those that are part of the makers own physical being) and techniques, as well as practice in the skills of making (p. 89).

Textile technologies have ancient traditions in Latvia and in many other countries. They were the most widespread ways of handicraft, rooted in the necessities of life as well as the need for beauty and self-expression. Today the mastery of traditional textile technologies is ensured, to a great extent, by the subject "Home Economics and Technologies". That is why teachers of home economics and technologies should be especially competent

in the field of textile technologies, because they will be fully responsible for how textile technologies are passed on to the future generations.

What does the contents of textile technologies consist of? In her doctoral thesis, the author has come to the conclusion that the contents of textile technologies includes:

- The language of visual arts, textile techniques and materials.
- Creative experience in textile.
- Criticism of textile works – description, analysis, interpretation, evaluation of textile works.
- History of textile.
- Aesthetic reaction.
- Methodology of teaching textile (Urdziņa-Deruma, 2001).

The author of the article considers that a textile teacher's competences should include ability to produce high-quality textile items and ability to inspire learners to create high-quality textiles.

According to the compounds of the contents of textile, the competences to be mastered are formulated as follows:

The language of visual arts, textile techniques and materials:

- Competence to work in textile technologies: knitting, crocheting, embroidery, sewing, weaving, batik, printing, painting on fabric, felting, etc.
- Competence to use tools for visual expression, to use different sources of inspiration, to make designs for textile goods and to make textile goods according to given designs.
- Competence in textile materials, skills of choosing and using the materials.

Creative experience in textile:

- Competence to work creatively in textile techniques, to make creative textile goods.
- Competence to make exhibitions of textile goods.

History of textile:

- Competence in the history of textile.
- Competence to use textile goods, relevant literature and Internet resources about textile.
- Conduct research on textile.

Criticism of textile works:

- Competence to write descriptions of textile goods, analyse, interpret and evaluate textile goods.

Aesthetic reaction:

- Competence to evaluate the aesthetic aspect of textile goods.

Methodology of teaching textile:

- Competence to teach all content components of textile.

PROBLEMS IN THE ACQUISITION OF COMPETENCIES IN TEXTILE TECHNOLOGIES

The author of the article has analysed her pedagogical experience and has come to the conclusion that the skills of making a textile item cannot be acquired in the process of making only one or two items. The skills improve if varied items are created using varied materials and techniques. Basically, if the student wants to be competent in textile technologies, she has to practise continuously with these technologies after graduating from university. The experience of Latvia proves that regularly practising teachers show high results. A student's investigation in her Bachelor's work showed that the most powerful means of motivating textile technology students is the teacher's creative activity (Zariņa, 2002).

During the 1990s a comparatively high number of learners wanted to study. To enter the programme of "Home Economics and Technologies", a hundred applicants took entrance examinations in handicraft and composition to become full-time students with the same amount of applicants to receive tuition by correspondence. Nowadays there are about 35–45 applicants, but just 10–14 of them become full-time students and only about 7–9 are reduced time correspondence students. The number of budget places has been reduced considerably with only 7 vacancies available in full-time studies.

Students had to take entrance examinations up to the year 2003; since then, enrolment is based on the results of centralised examinations. As a result, the students' qualification in textile technologies is poorer; they lack basic knowledge and skills in textile technologies.

A study of the changes in the number of contact lessons in home economics and technologies (Figure 1) suggests that the total number of contact lessons, the credit points for textiles and the methodology of teaching textiles have been reduced to more than a half during the period of thirty years since the beginning of training teachers of home economics and technologies at the University of Latvia.
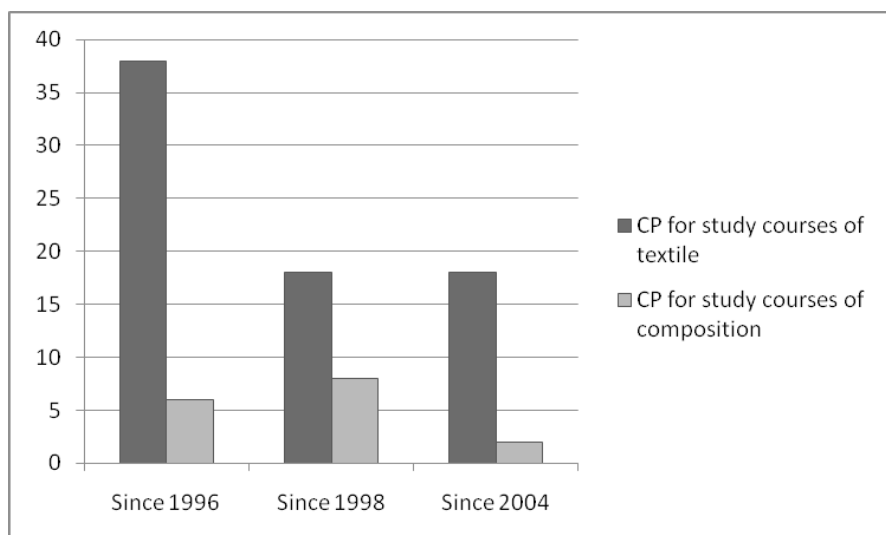

Figure 1. Number of credit points (CP) for study courses of textile and composition

For instance, the author of the article has been in charge of the study course "Crochet" since 1991. The initial number of 64 90-minute contact lessons held twice a week has now been reduced to 32 lessons for two study courses: "Textile and Methodology of Its Teaching "1 (Knitting and Crocheting 1) and "Textile and Methodology of Its Teaching II" (Knitting and Crocheting 2). Previously the study course of crocheting afforded opportunities to learn the technique and ways of crocheting as well as make three different items: a two-dimension textile item in dense crochet, a three-dimension textile item in dense crochet and a textile item in openwork crochet. Now during the study course the students manage to produce only two small items.

The number of credit points in the current study programme is distributed as follows:

- 24% for the chosen study courses of general education, pedagogy, psychology;
- 24% for the diploma paper, state examination and pedagogical practice placement;
- 32% for the acquisition of home economics and technologies;
- 20% for the second qualification.

Borg (2007) reports on a similar teacher training situation in Sweden where courses of general education have increased to take 30–40% of the total time while Slojd (Handicraft) and another subject share the remaining 60–65%. According to Borg, "it is no longer necessary to be very skilled in many craft techniques as a Sloyd teacher, but it is good to know what can be done in the Sloyd subject and why certain projects in Sloyd are challenging and good for the students in schools"(p. 3). Borg adds that, in the past, knowledge of various craft techniques was the focus of attention in teacher education whereas now the general academic level is considered as equally or even more important.

Holmberg (2009), on the other hand, points out that "the written essays show the problem that occurs when traditional academic methods and theories are applied to knowledge that is based on a practical or skill based experience. Through this process, the textile handicraft subjects risk to lose their core and identity" (p. 77).

At present 18 CP (credit points), which are equivalent to 27 ECTS, are allocated to textile, which is a bit more than one third of the study course "Home Economics and Technologies" and constitutes 11% of all study courses.

The practical, visually obvious outcome of textile courses is made up by element samples of each technique, sketches of items, patterns and creative textile articles. For instance, the study course "Textile and Methodology of Its Teaching 1" (Knitting and Crocheting 1) gives the students an insight into the history of knitting and crochet; additionally, the students master the basics of crochet and knitting (different kinds of stitches), knit samples according to certain guidelines which involves combining various stitches, patterns and colours. Later on, the students make compositions, cut-outs and drawings for cylinder-shape crocheting and knitting; the ideas are subsequently put into practice. During the course, the students master skills of analysing their own works and those of other students. Particular attention is paid to the aesthetic quality of the produced items.

Methodology of teaching textile is acquired in the following study courses: "Textile and Methodology of Its Teaching", "Study Content of Home Economics and Technologies", "Methods of Teaching and Evaluating Learning Achievements". Skills of textile technologies are acquired during the students' pedagogical practice placement, when preparing for lessons of home economics and technologies, teaching the subject and subsequently analysing the conducted lessons. Many students improve their competencies in the field

of textile while working on their diploma papers. Students can choose the theme of their diploma paper from a wide range of topics in home economics and technologies. Textile is the most popular theme in the students' graduation works.

The competences necessary to a teacher of textile and its technologies are closely connected with understanding the quality of textile. The author of the article believes that the teacher is sufficiently competent if she is able to create high-quality textile items and to teach the learners to do it. In this regard, Dišlere (2000) maintains: "The teacher should be able to do all the practical things included in the school programme, has to show and to explain how to fulfil the task" (p. 85).

The author of the article has come to the conclusion that the quality of textile items subsumes: (1) appreciated value of the textile item; (2) artistic value of the textile item (its composition); (3) originality and (4) technical quality of the textile item (Urdziņa-Deruma, 2001).

The author believes there is a connection between the competences of the teacher of textile and the characteristic criteria of the quality of textile items.

The competences to work in textile technologies (knitting, crocheting, embroidery, sewing, weaving, batik, printing, painting on fabric, felting, etc.) correspond to such criteria as application of textile work and technical quality. Competences to use tools of visual expression and different sources of inspiration, to make designs for textile goods and to make textile goods according to designs correspond to the criterion of composition of textile work. Knowledge about textile materials and skills of choosing and using materials correspond to such criteria as composition of textile work, application of textile work, and technical quality. The competence to work creatively in textile techniques and to create textile goods corresponds to the criterion of originality.

FINDINGS FROM THE SURVEY

The students' answers to the question "Are there enough contact lessons for the acquisition of textile?" show that the majority (53%) believe the number of contact lessons to be insufficient (Figure 2).
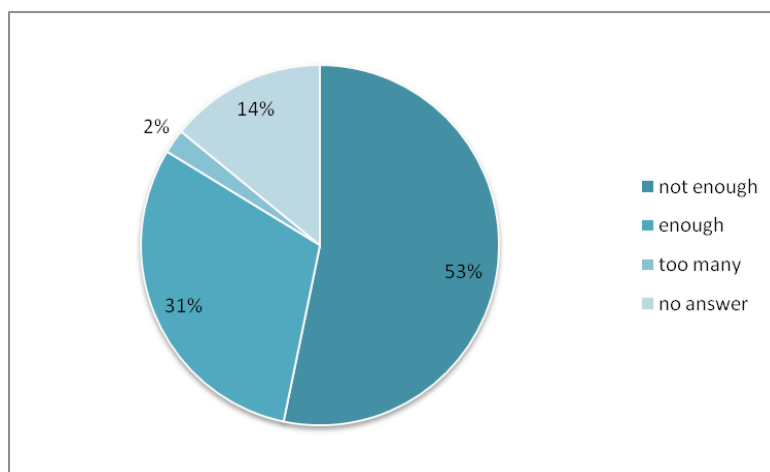

Figure 2. Amount of contact lessons for textile study course (the students' points of view) (N = 92)

While answering a similar question on composition lessons, comparatively fewer students (35 students or 38%) pointed out that there was not enough contact lessons of composition, 31 students agreed that there was enough contact lessons of composition, 5 students claimed there were too many of them and 21 did not answer the question at all.

FINDINGS FROM THE INTERVIEWS

Practice placement supervisor A gave the highest evaluation to students' competence in painting on fabric (9), a somewhat lower one to their competence in felting (7–10), knitting (7–10) and crocheting (7–-9). The students' motivation to produce textile items of good quality differs greatly (from 5 to 10), which is the reason why their competences are different, too. There are students whose competencies in sewing are outstanding (10), it is the same with producing textile items, and then there are students whose competencies can be valued only as almost good (6). It has been ascertained by the practice supervisor that competences in weaving and the methodology of teaching textile could have been better in some cases. The practice supervisor expressed her opinion that more attention should be paid to visual aids and the historical development of textile technology.

Practice placement supervisor B pointed out that more attention should be paid to textile items made during shorter periods of time, because with every year there is less time for the creation of textile goods. The mentor remarked that the students were capable of making designs for textile items and these could be evaluated as very good (8 points). The students were competent in embroidery (8), batik (8), felting (9), combining textile techniques (7–10). The supervisor pointed out the students' inability to identify mistakes in their learners' textile works; yet, at the same time, student-teachers appear to have been too critical in the evaluation of learners' works. It is important to notice learners' mistakes in the process of work, which gives the learner an opportunity to earn a higher evaluation. The author believes that during university studies criticism and evaluation of textile works should be emphasised to a much greater extent, and one of the students' tasks should be to find mistakes in the produced items. The practice mentor wished students had better knowledge in sewing technology, though it was remarked that separate students appear to have been outstanding in this regard (10). There was a great difference between the students, who had good knowledge of textile materials and tools and those who had poor knowledge in this sphere (in both cases from satisfactory (5) to outstanding (10)). The students' motivation was evaluated as good (7) and very good (8).

Practice placement supervisor C remarked that students' motivation to create high-quality textile goods ranged from good (7) up to outstanding (10). All other competences were evaluated as ranging from good to outstanding, too. The most pronounced disparity (from 6 to 10) was in the evaluation of the students' competences in knitting, embroidering and combination of textile techniques. Even greater differences (from 5 to 10) can be noted in the evaluation of crocheting, sewing, competence in textile materials and skills of choosing and using appropriate materials. The mentor expressed her point of view that in the process of training teachers of home economics and technologies emphasis should be placed on the students' mastering practical skills in order to be able to demonstrate them on a high level.

Student A (home economics and technologies (HET) as primary qualification), who has been combining her studies with work at school as a teacher of HET for three years, admitted that she had acquired almost all the competences required on a very good or even outstanding level, except the competence of performing studies of textile, which was evaluated as good. The student evaluated her motivation to create high-quality goods as outstanding. Her answers during the interview were assertive.

Student B (HET as primary qualification) evaluated her competencies as good, very good and excellent, in particular such competences as sewing technology, batik, printing, and painting on fabric, which she even evaluated as outstanding. She evaluated her motivation as very good and was very confident about her assessment in general.

Student C (HET as primary qualification) valued her competencies from satisfactory (competence in the history of textile technique) to excellent (competence in printing technology). She evaluated the majority of her competences as very good or good. The student evaluated her motivation as very good, too. Her answers were not very assertive, but she argued that she had not used her full potential during studies.

Student D (HET as secondary qualification with primary qualification in visual arts) evaluated her competencies as ranging from satisfactory (competence in the history of textile technique) to excellent (competence in painting on fabric and competence of evaluating compositions). The majority of competences, as well as motivation to create high-quality textile goods, were evaluated as good. The assessment was expressed in a very confident manner.

Student E (HET as secondary qualification with primary qualification in visual arts) mostly evaluated her competencies as good and very good (competence in felting and in evaluating compositions); some competencies were assessed as satisfactory (knitting and weaving technologies). The majority of competences and the motivation to create qualitative textile goods were assessed as good. The student's evaluation was relatively uncertain.

Student F (HET as secondary qualification with primary qualification in cultural values) evaluated her competences on a very wide range, from almost satisfactory up to outstanding. In the majority of cases, the competences were evaluated as very good or good. The competences in embroidery, batik, felting and the competence of applying the methodology of teaching textile were evaluated as excellent. The competence of carrying out investigations on textile was evaluated as outstanding whereas her competence in the history of textile technique was evaluated as almost satisfactory. The competence of sewing technologies was evaluated as satisfactory. In her answers the student opined that her competences in textile technologies were not as good as she would wish them to be. She evaluated her motivation as very good (8) and added that she had been a very diligent student.

Student G (HET as secondary qualification with primary qualification in cultural values) evaluated her competencies on a wide range from almost satisfactory (4) in case of the competence in sewing technologies up to excellent (9) – the competence of making use of textile goods, literature and Internet resources on textile. The student evaluated most of her competences and her motivation as good.

DISCUSSION

The results clearly suggest that the students whose primary qualification is home economics and technologies evaluated their competences as well acquired; only one student evaluated some of her competences lower than good. Their motivation was evaluated as outstanding in one instance and as good in two instances. Conversely, the students with secondary qualification in HET appear to suffer an impact of their primary qualification on the secondary one. The students who qualify for a teacher of visual arts were competent to evaluate compositions on a high level whereas those studying cultural values had a high-level competence of making use of textile goods, literature and Internet sources on textile as well as the competence to perform investigations on textile. The students with HET as their secondary qualification give somewhat lower evaluations: in three cases the evaluation was good and in one case very good. When analysing the students' high evaluations and comparing them with observations in their pedagogical work the author has concluded that the students have been critical and have tried to give an objective evaluation of their competences, and that several students have evaluated their competences as well acquired. Many students and, in some cases, also practice placement mentors evaluated the students' competences in sewing as the lowest. It can be explained by the fact that the level of the students' preliminary knowledge was different. There were students who claimed they had not had sewing at school. This may derive from the problems of material and technical provision at schools.

CONCLUSION

It is important to define not only the teachers' general competencies but also particular competences required by the subject, in this case – the competences needed in textile technologies. When thinking about enabling long-term development, it is of great importance to ensure that competences are passed on to the next generation. Knowledge about textile materials and the skills of choosing and using them are especially important. Students should acknowledge the necessity of re-cycling the materials and prioritise choosing natural materials underpinned by an agenda to conserve nature and preserve one's health. There is a connection among competencies in textile technologies, components of the content of textile and evaluation criteria of textile items. At a time when the number of contact lessons is comparatively small, it is particularly important to shape the study process in a way that would enable students to obtain all the necessary competencies. Individual approach should be used in the study process. Degree of students' preparedness should be respected, and their choice of home economics and technologies as primary or secondary qualification should be taken into account. In cases of it being students' secondary qualification, their primary qualification should be taken into consideration, too. One can conclude that professional activities at school are of great importance in the development of teacher's competences. It is essential for students to value the competencies they obtain during university studies. Such appreciative stance bears favourably on the planning of their study process. It is important to pay attention to encouraging students' motivation for motivation favours the development of competences.

REFERENCES:

Borg, K. (2007). Slojd teacher education in Sweden. *Bulletin of Institute of Vocational and Technical Education, 4*, 1–6.

Ball, D. L., & Cohen, D. K. (1999). Developing practice, developing practitioners. Toward a practice-based theory of professional educator. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice (*pp. 3–33). San Francisco, CA: Jossey Bass.

Blinkena, A. (Ed.). (2000). *Pedagoģijas terminu skaidrojošā vārdnīca: aptuveni 1500 terminu latviešu, angļu, vācu un krievu valodā* [Thesaurus of pedagogical terms: About 1500 terms in Latvian, English, German and Russian languages]. Rīga: Zvaigzne ABC.

Cabinet of Ministers of the Republic of Latvia. (2006). *Noteikumi par valsts standartu pamatizglītībā un pamatizglītības mācību priekšmetu standartiem* [Regulations regarding the National basic education standard and basic education subject standards]. Retrieved December 27, 2012, from http://www.isec.gov.lv/saturs/vispizgl/standarti.shtml

Dišlere, V. (2000). The experience of organizing the qualification examinations. In I. Burneckiene, V. Šidlauskiene & V. Lesauskiene (Eds.), *Proceedings of the conference "Changes of home economics and technology content in school: The reality and perspectives"* 23–24 November 2000 (pp. 85). Šiauliai: Šiauli universiteto leidykla.

Fish, D. (1995). *Quality mentoring for student teachers*: *A principled approach to practice*. London: David Fulton Publishers.

Holmberg, A. (2009). Craft skills and creativity. *Bulletin of Institute of Technical and Vocational Education, 6*, 70–77.

Kojonkoski-Rannali, S. (2009). Quality of the maker. In L. K. Kaukinen (Ed.), *Proceedings of the Crafticulation & Education Conference* (pp. 84–92). Helsinki: NordFo.

Lāce, G. (2010). *Latvijas pamatskolas matemātikas skolotāju kompetence matemātikas didaktikā* [Professional competence of primary school mathematics teachers in the didactics of mathematics]. Unpublished doctoral dissertation, University of Latvia, Rīga, Latvia.

Lokhoff, J., Wegewijs, B., Durkin, K., Wagenaar, R., Gonzįlez, J., Isaacs, A. K., Doną dalle Rose, L. F., & Gobbi, M. (Eds.). (2010). *A tuning guide to formulating degree programme profiles including programme competences and programme learning outcomes*. Bilbao, Groningen and the Hague: Publicaciones de la Universidad de Deusto.

Ministry of Education and Science. (2002). *Profesijas standarts Skolotājs* [The Standard of the Teachers' Profession]. Retrieved February 2, 2012, from http://visc.gov.lv/saturs/profizgl/standarti/ps0238.pdf

Sheffield Hallam University. (n.d.). *Subject Knowledge Audit. Design and Technology*. Retrieved January 31, 2012, from http://www.freon.me.uk/files/subknowaudit.doc

Shulman, L. S. (2004). Those who understand: Knowledge growth in teaching. In S. Wilson (Ed.), *Wisdom of practice: Essays on teaching, learning, and learning to teach* (pp. 187–216). San Francisco: Jossey-Bass.

Urdziņa-Deruma, M. (2001). *Tekstils kā mākslas izglītības sastāvdaļa topošo mājturības skolotāju studijās augstskolā* [Textile as a part of art education in pre-service teachers' studies of Handicraft and Home Economics in a higher education institution]. Unpublished doctoral dissertation, University of Latvia, Rīga, Latvia.

Zariņa, L. (2002). *Mākslinieciskās darbības motivācijas veidošanās pamatskolā* [Development of motivation for artistic activities in primary school]. Unpublished Bachelor's thesis, University of Latvia, Rīga, Latvia.

Initial stage of mastering improvisation: Problems and tendencies

Jevgeņijs Ustinskovs

Daugavpils University, Latvia

ABSTRACT

Prior research has proved that during improvisation several specific processes take place simultaneously. This study aims to observe the activity of secondary music school pupils at the initial stage of mastering improvisation so as to analyze and compare the performance of various informants in improvisation art with a view to establishing whether the density of time has some impact at the initial stage of the process of mastering improvisation. The applied methods include partially structured inclusive observation and interpretive analysis by applying criteria and levels for evaluating the acquisition of improvisation skills. In the course of the research, the activities of secondary music school pupils at the initial stage of mastering improvisation were observed; strengths and weaknesses of pupils' improvisation were identified and analysed. The best results were achieved under conditions of a lower density of time – when the improviser had to perform a narrow range of tasks. Consequently, at the initial stage of mastering improvisation it is essential to give the pupils assignments with a lower density of time and then gradually increase it.

Key words: improvisation, secondary music school, observation, musical dialogue, criteria for assessment of improvisation

INTRODUCTION

It is essential for musicians to acquire skills of improvisation since these skills allow for life-long development and improvement as well as link theoretical knowledge with practical everyday needs. Thus, improvisation studies are topical as they relate to sustainability.

Previous research (Асафьев, 1957; Coker, 1964; Мальцев, 1991; Brophy, 2000; Martin, 2005; Hickey, 2009; Kingscott & Durrant, 2010; Petrauskas, 2010; Дацюк, 2010; Ustinskovs, 2011b, 2012a, 2012b; Spigins, 2012) has shown that during improvisation several specific processes take place simultaneously:

- strategic and tactical composing of a new musical material;
- implementation of the composed musical material in real time – in the course of improvisation;
- analysis of and reflection on the performed musical material;
- hearing other performers, coordination and harmonisation of actions (in collective music making).

The process of research on developing the didactic model for mastering improvisation requires approbation of evaluation criteria of mastering improvisation in the form of pilot evaluation as well as an investigation of the following issues:

- Are secondary music school learners capable of combining and implementing specific improvisation related thinking processes at the initial stage of mastering improvisation?
- In what way does the result of secondary music school learners' improvisations at the initial stage of mastering improvisation relate to the density of time during the process of improvisation?

To obtain the needed information about informants' activities, evaluation criteria of mastering improvisation are used (Ustinskovs, 2011a). There are several researchers who have dealt with the issues of the evaluation of educational process. Recently, one of the most prominent author collectives to write about issues of evaluation is Assessment Reform Group which unites several professors from different British universities (Assessment Reform Group, 1999, 2002a, 2002b, 2006, 2009; Mansell, James, & Assessment Reform Group, 2009). ARG believe that there are two basic approaches to assessment: (a) formative assessment or assessment for learning and (b) summative assessment.

Several other researchers have similar ideas about approaches to assessment and its usage in the educational process (Brophy, 2000; Adams, 2001; Rust, 2002; Hounsell, 2003; Davidova, 2006; Harlen, 2007; Hattie & Timperly, 2007). According to Hahele (Hahele, 2006), forms of assessing learning achievement depend on the aim of assessment and can be classified as follows: diagnostic assessment at the beginning of a study course, formative assessment during a study course, and summative assessment at the end of a study course.

Other studies (Hahele, Mīļā, & Upeniece, 2009), however, claim that there are just two basic approaches – formative and summative with pilot assessment (with a diagnostic function) considered a form of the former. Through pilot assessment a teacher receives

information about learners' knowledge and abilities, and also about how the educational process could be directed further.

Assessment criteria are of great importance in the process of evaluation (Swanwick, 1994; Geidžs & Berliners, 1999; Boikova, 2006; Мацкевич, 2006; Цейтлина, 2009; Spigins, 2010, 2012). Assessment criteria enable both teachers and learners to evaluate the work done so far and show the direction which learners and teachers should pursue to achieve their aims (Власенко, 2010). On the grounds of findings from the above mentioned research, the author of this case study, by applying assessment criteria of mastering improvisation, will interpret the observed results in a pilot assessment.

METHOD

The method of semi-structured inclusive observation is employed in the research. The aim of observation is to observe the activity of secondary music school learners at the initial stage of mastering improvisation in order to analyse and compare the performance of various informants in improvisation art with a view to finding out whether the density of time exerts any impact at the initial stage of mastering improvisation, and to approbate the assessment criteria of mastering improvisation in the form of pilot assessment. The method of observation was selected because it provides information about informant's activity, about how she fulfils her tasks, how the complexity of the tasks affects her performance and in what researched aspects the performance of the informant changes.

The observed lessons were recorded with the video camera JVC and an observation transcript was made. The data were processed by means of interpretive analysis by using previously studied assessment criteria and levels of acquiring improvisation skills (Ustinskovs, 2011a).

The study involved three participants – female students aged 17–18 from Daugavpils secondary music school. Improvisation is a compulsory subject for two informants who are second-year students at the music school. One informant is a third-year student, and for her improvisation is a free elective subject. Improvisation is acquired by individually using the piano (Устинсков, 2011). Prior to the study, the learners had not done any improvisation. Open observation was performed during the first improvisation lesson. The observation was aimed at determining the initial level of informants' improvisation.

Lessons were given individually in a natural environment – in a classroom of Daugavpils secondary music school with two pianos in it. The learners were informed about the research aim and video recording. They were assured that their performance would not be assessed by a mark and that their anonymity would be guaranteed. The informants were coded X1, X2 and X3.

A method of 'question-answer', widely employed in music pedagogy and improvisation teaching (for instance, Nelsone & Paipere, 1992; Ustinskovs, 1995; Lasmane, Platpers, & Millere, 2002), was selected to observe and evaluate the informants' abilities. The principle underlying this method is giving a musical 'answer' (phrase or other form) to the performed 'question' (phrase or some other form). Thus a musical dialogue is held between two musicians.

Taking into account the fact that the research participants are novices in improvisation, period was chosen as the basic task form for this study, because it is the smallest complete structure of a musical composition. A period is a complete musical thought which is able to exist as an independent form of music. The learners improvised a classical period with a clear structure because this approach helps to evaluate and investigate informants' improvisations more precisely. A musical phrase was employed as a core structure of improvisation, because this makes the improvisation time denser and the tempo of thinking quicker. Since a classical period consists of four phrases, both the improviser and the researcher, in turn, improvise two phrases each. In the course of the research the improviser and the researcher exchange their roles: first the researcher improvises a 'question' (plays the first phrase, leads the joint improvisation) and the informant gives an 'answer' (improvises the second phrase), and vice versa – the informant leads improvisation but the researcher improvises the 'answer'. This is done to see whether leading improvisation affects the result of the improvisation.

Each informant fulfilled four tasks:

Task 1 – a period of one voice, the researcher leads. While fulfilling this task the researcher improvises the first and the third phrase, the informant improvises the second and the fourth phrase. The improvisation is monophonic.

Task 2 – a polyphonic period, the researcher leads. While performing this task the researcher improvises the first and the third phrase, the informant improvises the second and the fourth phrase. The improvisation is polyphonic – this makes the task more complex because the informant has to think about the formation of polyphony.

Task 3 – a period of one voice, the informant leads. While fulfilling this task the informant improvises the first and the third phrase, but the researcher improvises the second and the fourth phrase. The improvisation is monophonic. The informant does not have to continue musical phrases given by the researcher; she has to lead the process of improvisation.

Task 4 – a polyphonic period, the informant leads. The improvisation is polyphonic – this makes the task more complex, because the informant has to think about the formation of polyphony. The informant does not have to continue the musical phrases given by the researcher; she has to lead the process of improvisation. Improvisation is performed in a free style, by wish of the first (lead) musician.

In the tasks mentioned above, the informant has to solve the following common problems: to improvise a melody which consists of sounds and a rhythmic pattern; to keep the time of improvisation; to shape a musical form as a whole (a period); to make musically expressive improvisations.

Each task has its own additional problems. In the Task 1 it is necessary to follow the researcher's musical ideas and to react to the researcher's improvisations. In Task 2 it is necessary to follow the researcher's musical ideas, to react to the researcher's improvisations and to create polyphonic texture which involves an analysis of the researcher's harmony and improvisation of one's own harmony. In Task 3 one's own musical phrases are to be improvised. In Task 4 one's own musical phrases are to be improvised and a polyphonic texture is to be formed which the improvisation of one's own harmony involves.

FINDINGS

A transcript of the video recording of informant X1 was made. The results of data analysis are outlined in Table 1 (see Appendix).

The results obtained from observing informant X1 can be divided into two blocks:
1. Improvisation of 'answers' (Task 1 and Task 2).
2. Leading of improvisation (Task 3 and Task 4).

Analysis of the observation data suggests that informant X1 can cope with the leading of improvisation much better than with improvising 'answers', and the former yields better results. The informant experiences difficulties with improvising 'answers': in the improvisation, phrasing is not formed, the produced isolated sounds are chaotic and poorly interconnected, there are several serious mistakes in the pattern of rhythm, and problems with tempo are also observed.

In Tasks 3 and 4 the informant does not have to adjust to the phrases played by the researcher. Consequently, she plays her own clearly structured phrases and, on the whole, copes with the task given by the researcher. Phrases are performed much more precisely tempo-wise as well.

The common problems of all four tasks revealed by the performance of the informant are: lack of explicit dynamics; lack of musical originality; poorly developed texture; the informant's performance is unstable and unconvincing; the informant does not use techniques of improvisation and composition.

Table 2 summarises the findings gleaned from analysing the data from informant X2 (see Appendix).

The observation suggests that informant X2 achieved best performance and results in Task 3. The task is fulfilled on the whole, the informant forms clear phrases, and the tempo, rhythm and sound pitch have only some insignificant drawbacks.

In other tasks fulfilled by informant X2 the following drawbacks were observed: inaccuracies in the pattern of tempo and rhythm, drawbacks of sound pitch, inaccuracies of phrasing, and drawbacks with polyphonic texture (in polyphonic tasks).

The following problems common to all four tasks were identified:
- musical material lacks originality and imagination;
- informant poorly uses techniques of improvisation and composition;
- informant's performance is unstable and unconvincing;
- performance lacks emotional expressiveness which is revealed in uniform dynamics.

Video recording of informant X3's performance was also transcribed. The results of data analysis are outlined in Table 3 (see Appendix).

Table 3 suggests that informant X3, too, has given best performance in Task 3 because, on the whole, the task is fulfilled with only a few insignificant inaccuracies.

In other observed tasks the following drawbacks of informant X3's performance were observed: digressions and inaccuracies in tempo and rhythm pattern, several problems of sound pitch, inaccuracies in phrasing which were especially evident in polyphonic tasks, drawbacks of polyphonic texture (in polyphonic tasks).

Several shared problems common to all four tasks were identified:
- musical material lacks originality and imagination;
- informant poorly uses the techniques of improvisation and composition;
- informant's performance is unstable and unconvincing;
- performance lacks emotional expressiveness which is manifested in uniform dynamics.

Analysis of improvisations by all three informants suggests that the best achievements have been shown in Task 3, which is monophonic and informant-led. The learner finds it easier to improvise a melody phrase by herself rather than to analyse and react to the phrases played by other musicians. Reaction to a partner's performance takes a short period of time and quickens the tempo of thinking; thereby, the density of improvisation time increases. As a result, drawbacks of tempo, rhythm and sound organisation are observed. Maltzev (Мальцев, 1991) relates such problems of ensemble improvisation to improviser's scant experience when an inexperienced improviser cannot adequately understand their partner's performance. We can infer that experience of improvisation is necessary for successful improvisation in ensemble.

Polyphonic tasks for all three informants were partially monophonic, which testifies to their inability to quickly improvise additional voices. The inability to combine horizontal thinking with vertical thinking in time (terminology according to Afanasyeva (Афанасьева, 2011)) was observed during improvisation.

The following problems common for all informants were discerned: lack of expressive dynamics, lack of musical originality, poorly developed texture and informant's poor usage of improvisation techniques and composition.

CONCLUSION

Research findings suggest that, by applying the assessment criteria of mastering improvisation, it is possible to evaluate the achievements of secondary music school learners in a pilot assessment. In this specific case, the researcher received information about the learners' abilities in the initial stage of the process of mastering improvisation. A teacher can use this information in a further process of mastering improvisation. Quite possibly, when working with other learners whose musical preparedness is different or who have other musical abilities, the results may be different.

This case study has established that a learner of secondary music school is able to improvise monophonic musical phrases – to form melody and organise it in time by means of rhythm. Insufficient expressiveness of phrases and lack of creative imagination were observed in this research. The study also implies that in music tempo and rhythm are closely related to the notion of time. Drawbacks of these components at the initial stage of mastering improvisation arise from the increase of time density and improviser's inability to coordinate thinking processes under such conditions and thus overcome the problem of time density. The best improvisations are observed under the conditions of lower density of time – when the improviser has to solve a smaller number of tasks. Therefore, at the initial stage of mastering improvisation, it is important to use tasks with a lower density of time.

During collective music making the improviser is faced with a new task – listening to a partner, and coordinating and harmonising actions. This affects the result of improvisation and is manifested in inaccuracies of tempo and rhythm.

Learners of secondary music schools have problems with improvising additional voices. This affects the result of improvisation and is manifested in problems relating to tempo, rhythm and texture. Consequently, forming additional voices is an additional task for the improviser which increases the density of time and makes a negative impact on the result of improvisation. In addition, at the initial stage of mastering improvisation it is vital to create conditions for the development of such abilities as originality and emotionality.

This research has identified several problems which are to be addressed in the process of acquiring improvisation. Further research and the process of acquiring improvisation could attempt to solve these problems.

ACKNOWLEDGEMENT

REFERENCES:

Adams, P. (2001). Assessing creativity. In C. Philpott (Ed.), *Learning to teach music in the secondary school* (pp. 166–176). London and New York: Routledge Falmer.

Assessment Reform Group. (1999). *Assessment for learning: Beyond the black box*. Cambridge: University of Cambridge School of Education. Retrieved August 8, 2012, from http://www.assessment-reform-group.org.uk

Assessment Reform Group. (2002a). *Assessment for learning: 10 Principles. Research-based principles to guide classroom practice*. Cambridge: University of Cambridge Faculty of Education. Retrieved August 8, 2012, from http://www.assessment-reform-group.org.uk

Assessment Reform Group. (2002b). *Testing, motivation and learning*. Cambridge: University of Cambridge Faculty of Education. Retrieved August 8, 2012, from http://www.assessment-reform-group.org.uk

Assessment Reform Group. (2006). *The role of teachers in the assessment of learning: Newcastle document services*. Retrieved August 8, 2012, from http://www.assessment-reform-group.org.uk

Assessment Reform Group. (2009). *Assessment for learning: A practical guide*. Belfast: CCEA Publication. Retrieved August 8, 2012, from http://www.assessment-reform-group.org.uk

Boikova, I. (2006). *Audzēkņa individuālās uzstāšanas izvērtēšana sasniegumu attīstības kontekstā* [Assessment of learners' individual performance in the context of development]. Unpublished Master's thesis, Daugavpils, Daugavpils University, Latvia.

Brophy, T. S. (2000). *Assessing the developing child musician: A guide for general music teachers*. Chicago: GIA Publications.

Coker, J. (1964). *Improvising jazz*. New York: Simon & Schuster.

Davidova, J. (2006). Evalution of student's individual performance within the context of the development of achievements. In H. E. Price (Ed.), *Procedings 21st international seminar on research in music education* (pp. 37–44). Hong Kong: Hong Kong Baptist University.

Geidžs, N., & Berliners, D. (1999). *Pedagoģiskā psiholoģija* [Pedagogical psychology]. Rīga: Zvaigzne ABC.

Hahele, R. (2006). Mācīšanās kvalitātes pašnovērtējuma iespējas novērtēšanas sistēmā Latvijā [Opportunities for learning quality self-assessment within the assessment system of Latvia] In I. Maslo (Ed.), *No zināšanām uz kompetentu darbību* [From knowledge to competent action] (pp. 148–161). Rīga: University of Latvia.

Hahele, R., Mīļā, A., & Upeniece, I. (2009). *Skolēnu mācību sasniegumu vērtēšana vidusskolā* [Assessment of pupils' learning achievements in secondary school]. Rīga: VISC.

Harlen, W. (2007). *Assessment of learning.* London: Sage.

Hattie, J., & Timperly, H. (2007). The power of feedback. *Review of Educational Research, 77*(1), 81–112.

Hickey, M. (2009). Can improvisation be 'taught'?: A call for free improvisation in our schools. *International Journal of Misic Education, 27*(4), 285–299.

Hounsell, D., (2003). The evaluation of teaching. In H. Fry, S. Ketteridge & S. Marshall (Eds.), *A handbook for teaching and learning in higher education: Enhancing academic practice* (pp. 200–212). London: Kogan Page.

Kingscott, J., & Durrant, C. (2010). Keyboard improvisation: A phenomenological study. *International Journal of Music Education, 28*(2), 127–144.

Lasmane, L., Platpers, A., & Millere, I. (2002). *Mūzika 6.klasei* [Music for form 6]. Rīga: RaKa.

Mansell, W., James, M., & The Assessment Reform Group. (2009). *Assessment in schools. Fit for purpose? A commentary by the teaching and learning research programme.* London: Economic and Social Research Council, Teaching and Learning Research Programme. Retrieved August 9, 2012, from http://www.assessment-reform-group.org.uk

Martin, J. (2005). Composing and improvising. In D. J. Eliot (Ed.), *Praxial music education: Reflection and dialogues* (pp. 165–176). New York: Oxford University Press.

Nelsone, I., & Paipare, M. (1992). *Mūzikas mācīšanas metodika* [Methodology of teaching music]. Rīga: Zvaigzne.

Petrauskas, R. (2010). Apzinātais un neapzinātais pianista improvizatora mākslā [The conscious and the unconscious in pianist-improviser's art]. In I. Grauzdiņa (Ed.), *Mūzikas zinātne šodien: Pastāvīgais un mainīgais* [Science of music today: Constancy and change] (pp. 230–236). Daugavpils: Saule.

Rust, C. (2002). *Purposes and principles of assessment.* Oxford: Oxford Centre for Staff and Learning Development.

Spigins, J. (2010). Improvizācijas pamatu apguves kritēriji, radītāji un līmeņi [Criteria, indicators and levels of mastering the fundamentals of improvisation]. In M. Marnauza (Ed.), *Teorija praksei mūsdienu sabiedrības izglītībā* [Theory for practice in the education of contemporary society] (pp. 460–465). Rīga: RPIVA.

Spigins, J. (2012). *Improvizācijas pamatu apguve topošo mūzikas skolotāju studiju procesā* [Mastering of the fundamentals of improvisation during the study process of prospective music teachers]. Unpublished doctoral dissertation, Daugavpils University, Daugavpils, Latvia.

Swanwick, K. (1994). *Musical knowledge: Intuition, analysis and music education.* London: Routledge, Falmer.

Ustinskovs, J. (1995). *Improvizēšanas mācība mūzikas skolotājiem* [Teaching improvisation to music teachers]. Unpublished Master's thesis, Latvian Academy of Music, Rīga, Latvia.

Ustinskovs, J. (2011a). Mūzikas vidusskolas audzēkņu improvizācijas iemaņu apguves vērtēšana mūzikas vidusskolā [Assessment of improvisation task performance at music secondary schools]. In J. Davidova (Ed.), *Problems in music pedagogy* (pp. 321–332). Daugavpils: Daugavpils University.

Ustinskovs, J. (2011b). Some structural components of improvisation process at a secondary music school. In H. Ruismaki & I. Ruokonen (Eds.), *Arts and skills – source of well-being* (pp. 171–180). Helsinki: University of Helsinki.

Ustinskovs, J. (2012a). Improvisation process in the temporal aspect. In A. Šļahova (Ed.), *Scientific articles of 7th international conference "Person. Colour. Nature. Music"* (pp. 264–278). Daugavpils: Saule.

Ustinskovs, J. (2012b). Kinds of improvisation activity in music secondary schools. In V. Ļubkina & J. M. Ndabishibije (Eds.), *Starptautiskās zinātniskās konferences "Sabiedrība, integrācija, izglītība" materiāli* [Proccedings of international scientific conference "Society, integration, education"] (pp. 163–173). Rēzekne: RA izdevniecība.

Асафьев, Б. (1957). *Музыкальная форма как процесс: Избранные труды 5* [Musical form as a process: Selected works 5]. Москва: Академия наук СССР.

Афанасьева, А. (2011). Гармония космических миров в музыке [Harmony of cosmic worlds in music]. *Педагогика Культуры* [Pedagogy of culture], *12*. Retrieved February 8, 2012, from http://pedagogika-cultura.narod.ru/private/Articles/N_2011/Afanasyeva_.htm

Власенко, В. (2010). *Формирующее оценивание* [Formative assessment]. Retrieved July 9, 2012, from http://www.slideshare.net/vaisova/3-6968960

Дацюк, С. (2010). *Горизонты конструктивизма* [Horizons of constructivism]. Киев: Lib. ru. Retrieved November 28, 2010, from http://lit.lib.ru/d/dacjuk_s_a/text_0040.shtml#_Toc277399943

Мальцев, С. (1991). *О психологии музыкальной импровизации* [On psychology of musical improvisation]. Москва: Музыка.

Мацкевич, С. (2006). Оценка качества образования как системная и методологическая проблема [Assessment of education quality as a systemic and methodological problem]. Т. Краснова (Ред.), *Оценивание: Общеобразовательные возможности* [Assessment: General educational potential] (с. 7–18). Минск: Белорусский Государственный Университет.

Устинсков, Е. (2011). Изучение импровизации в музыкальном училище [A study of improvisation in music school]. Т. Свитова (Ред.), *Современные технологии и методики профессионального музыкального образования* [Modern technologies and methods in professional musical education] (с. 110–118). Самара: СамЛюкс-Принт.

Цейтлина, Е. (2009). *Развитие оценочной самостоятельности учащихся в современной школе* [Development of contemporary school learners' autonomy in assessing]. Unpublished doctoral dissertation, Saint Petersburg State University, Saint Petersburg, Russia.

APPENDIX

Table 1. Informant X1's observation table: Indicators of tasks for mastering improvisation at the initial stage

Criteria	Indicators of the Task 1	Indicators of the Task 2	Indicators of Task 3	Indicators of Task 4
Improvisation content and how it is revealed, sense of style	Content of improvisation is unclear; it is an aggregate of isolated sounds	Content of improvisation is unclear; it is an aggregate of isolated sounds	On the whole, the improviser copes with revealing the content of improvisation, but the performance lacks imagination, stability and confidence	On the whole, the improviser copes with revealing the content of improvisation but the performance lacks stability and confidence
Tempo and agogics	On the whole, the improvisation is played at the given tempo	The tempo of the improvisation is difficult to understand	On the whole, improvisation is played at the given tempo	On the whole, improvisation is played at the given tempo
Dynamics	Dynamics is uniform and inexpressive	Dynamics is uniform and inexpressive	Improviser tries to reveal the content of improvisation by means of dynamics but does it unconvincingly	Improviser tries to reveal the content of improvisation by means of dynamics but does it unconvincingly
Phrasing	Phrasing is not formed	Phrasing is not formed	On the whole, the phrasing of improvisation is clear, logical and understandable but uniform	On the whole, the phrasing of improvisation is clear but has some minor inaccuracies
Originality of the music material	Originality of the musical material is difficult to evaluate since the content of improvisation is unclear	Originality of the musical material is difficult to evaluate since the content of improvisation is unclear	Improviser combines fragments of familiar music with her improvisations, but the latter lack creative imagination	Improviser combines fragments of familiar music with her own improvisations, but the latter lack creative imagination
Rhythm	Pattern of rhythm is difficult to understand	Pattern of rhythm has some serious drawbacks	On the whole, the pattern of rhythm is accurate	Pattern of rhythm is unstable and has some drawbacks
Sound pitch	Aggregate of used sounds is chaotic and not oriented towards revealing the content of improvisation	Aggregate of used sounds is chaotic and not oriented towards revealing the content of improvisation	Sounds used exactly comply with the improviser's ideas	Sounds used exactly comply with the improviser's ideas
Use of methods of composition and improvisation techniques	Improviser does not use the techniques of composition and improvisation	Improviser does not use the techniques of composition and improvisation	Informant uses the techniques of improvisation in a uniform way	The arsenal of improviser's techniques is uniform and the improviser uses it unconvincingly
Texture	Texture is not assessed due to the specificity of the task	Texture of improvisation is poor and does not help to reveal the content of improvisation	Texture is not evaluated due to the specificity of the task	Texture of improvisation is poor and basically monophonic

Table 2. Informant X2's observation table: Indicators of tasks for mastering improvisation at the initial stage

Criteria	Indicators of Task 1	Indicators of Task 2	Indicators of Task 3	Indicators of Task 4
Improvisation content and how it is revealed, sense of style	On the whole, the improviser copes with revealing the content of improvisation but the performance is unstable, unclear and unconvincing	Improvisation has the content but it is unclear, fragmentary and does not form an overall impression	On the whole, the improviser copes with revealing the content of improvisation but the performance lacks imagination, stability and conviction	On the whole, the improviser copes with revealing the content of improvisation but the performance lacks stability and conviction
Tempo and agogics	In the improvisation there are several big tempo digressions and they are not made to reveal the content of improvisation	Improvisation has several big tempo digressions	On the whole, improvisation is played at the given tempo	On the whole, the use of tempo and agogics is precise and has only several slight drawbacks
Dynamics	Dynamics is uniform and inexpressive	Dynamics is uniform and inexpressive	Dynamics of improvisation is uniform, inexpressive and does not contribute to revealing the content of improvisation	Dynamics of improvisation is uniform, inexpressive and does not contribute to revealing the content of improvisation
Phrasing	Phrasing is illogical and has several mistakes	Phrasing is illogical and has several mistakes	On the whole, the phrasing of improvisation is clear and logical but has some inaccuracies	On the whole, the phrasing of improvisation is clear and logical, but has insignificant inaccuracies
Originality of the music material	Improvisation consists of improvised musical material but the banality of musical material is felt	Improviser combines fragments of familiar music with her own improvisations which lack creative imagination	Improviser combines fragments of familiar music with her own improvisations which lack creative imagination	Improviser combines fragments of familiar music with her own improvisations which lack creative imagination
Rhythm	Rhythmical pattern has several serious drawbacks	Rhythmical pattern has several serious drawbacks	On the whole the rhythmical pattern is precise but has occasional inaccuracies	Rhythmical pattern is precise but contains several inaccuracies
Sound pitch	Improvisation reveals several problems related to embodying improvisation ideas into sounds	Improvisation reveals several problems related to embodying improviser's ideas into sounds	Slight drawbacks in sound pitch	Improvisation reveals several problems related to embodying improviser's ideas into sounds
Use of methods of composition and improvisation techniques	Arsenal of improviser's techniques is uniform and the improviser uses it unconvincingly and with several mistakes	Arsenal of improviser's techniques is uniform and the improviser uses it unconvincingly and with several mistakes	Arsenal of improviser's techniques is uniform and the improviser uses it unconvincingly and with several mistakes	Arsenal of improviser's techniques is uniform and the improviser uses it unconvincingly
Texture	Texture is not evaluated due to specificity of the task	Texture of improvisation is poor, partially monophonic	Texture is not evaluated due to specificity of the task	Texture of improvisation is poor, partially monophonic

Table 3. Informant X3's observation table: Indicators of tasks for mastering improvisation at the initial stage

Criteria	Indicators of Task 1	Indicators of Task 2	Indicators of Task 3	Indicators of Task 4
Improvisation content and how it is revealed, sense of style	On the whole, the improviser copes with revealing the content of improvisation, but the performance is unstable, unclear and unconvincing	On the whole, the improviser copes with revealing the content of improvisation, but the performance is unstable, unclear and unconvincing	On the whole, the improviser copes with revealing the content of improvisation, but the performance lacks imagination, stability and conviction	Improvisation has content, but it is unclear, fragmentary and does not produce a general impression, the performance is unstable and unconvincing
Tempo and agogics	On the whole, the improvisation is played at the given tempo, but there are 3-4 inaccuracies of tempo	Several big digressions from tempo in the improvisation	On the whole, improvisation is played at the given tempo	Several big digressions from tempo
Dynamics	Improviser tries to reveal the content of improvisation by means of dynamics but does it unconvincingly	Dynamics is uniform and inexpressive	Improviser tries to reveal the content of improvisation by means of dynamics but does it unconvincingly	Dynamics of improvisation is uniform, inexpressive and does not help to reveal the content of improvisation
Phrasing	On the whole, the phrasing of improvisation is clear and logical with only a few inaccuracies	Phrasing is illogical with several mistakes	On the whole the phrasing of improvisation is clear and logical with only a few several inaccuracies	Phrasing is illogical with several mistakes
Originality of the music material	Improvisation consists of an improvised musical material, but the banality of musical material is felt	Improvisation consists of an improvised musical material, but the banality of musical material is felt	Improvisation consists of improvised musical material, but the banality of musical material is felt	Improvisation consists of improvised musical material, but the banality of the musical material is felt
Rhythm	Several serious drawbacks in rhythmical pattern	Several serious drawbacks in rhythmical pattern	On the whole the rhythmical pattern is precise with only a few inaccuracies	Several serious drawbacks in rhythmical pattern
Sound pitch	Improvisation reveals several problems related to embodying improviser's ideas into sounds	Improvisation reveals several problems related to embodying improviser's ideas into sounds	Slight drawbacks of sound pitch	Improvisation reveals several problems related to embodying improviser's ideas into sounds
Use of methods of composition and improvisation techniques	Arsenal of improviser's techniques is uniform, and the improviser uses it unconvincingly, with several mistakes	Arsenal of improviser's techniques is uniform, and the improviser uses it unconvincingly, with several mistakes	Arsenal of improviser's techniques is uniform, and the improviser uses it unconvincingly	Arsenal of improviser's techniques is uniform, and the improviser uses it unconvincingly
Texture	Texture is not evaluated due to specificity of the task	Texture of improvisation is poor, partially monophonic	Texture is not evaluated due to specificity of the task	Texture of improvisation is poor, partially monophonic

Teacher education for inclusion

ICT-supported educational action research in teacher education for sustainability: Interplay of multiple voices in discourse on exclusion

Ginta Gedžūne

Daugavpils University, Latvia

ABSTRACT

The paper recounts an experience from educational action research study in the context of implementing teacher education for sustainability, which seeks to determine the potential of using electronically-supported learning environment of google.doc to engage future preschool and basic education teachers in discursive contemplation of the nature of exclusion and exclusionary relationships in society and education. The methods of discourse analysis and qualitative content analysis were applied to the data generated from the research participants' answering reflexive questions about exclusion and commenting their peers' viewpoints in the google.doc environment. The study confirms that this unique environment has the potential to support pre-service teachers' discourse on exclusion. The paper also suggests that presenting an educational action research phase as a multi-vocal account that allows for an interplay of first-, second- and third-person voices conveys a richer perspective on the process and outcomes of inquiry as well as their relevance for the direct participants of the research process and the broader scholarly community.

Key words: educational action research, voice, discourse, exclusion, teacher education

INTRODUCTION

In recent decades, the issue of exclusion has gained prominence in the discourses of social policy, education and social structures and relationships (Bowring, 2000; Peace, 2001; Koller & Davidson, 2008). Essentially, exclusion is a concept that captures a way of positioning oneself with regard to the surrounding social and natural environment, an approach to viewing the world and acting within it. It is thus a concept that describes the quality of relationships between individuals and their environment, their ways of being in the world which is inhabited by myriad human and non-human communities. These ways of being in the world, which are grounded in our life experiences (Kasper, 2009) and can be either exclusion- or inclusion-oriented, notably either essentially sustainable or unsustainable, are an important issue of concern. As Kasper (20009) puts it, alienation and disconnect in mutual relationships between individuals and the surrounding social and natural environment can have destructive consequences, which is why we need to recognise that individuals are mutually interrelated in a plurality of relationships with human and non-human others. Thus, to survive and retain the Earth as a favourable habitat for future generations, we must basically alter our relationship with the world to make it more inclusive and sustainable. It requires a shift in the way we perceive the world and ourselves within it, which entails significant implications for education at all levels and teacher education in particular.

This paper constitutes a reflection on the path pursued in our educational action research journey with future preschool and basic education teachers who are taking teachers who are taking an action research based study course "Education for Sustainable Development", and cooperatively exploring exclusion and inclusion as respectively unsustainable and sustainable modes of relationship with the world. The meta-aim of our educational action research is to explore pre-service teachers' frames of reference and orient the latter towards inclusion. The concrete purpose of the present phase was to engage pre-service teachers in the creation of and participation in critical discourse on the issue of exclusion in an information and communication technology (ICT) supported learning environment. We thus sought to answer the following questions: (1) what is the potential of using google.doc environment for initiating discourse on exclusionary relationships between individuals and their environment in the context of teacher education and (2) what light does involvement in discourse about the nature of exclusionary relationships between individuals and their environment shed on pre-service teachers' frames of reference for making sense of this issue. The present account is conceptualised as an attempt to integrate multiple voices in the discourse on exclusion in teacher education context. The theoretical substantiation of such a perspective is provided in the following section.

MULTI-VOCALISM IN ACTION RESEARCH: THEORETICAL UNDERPINNINGS

Of late, the concepts of voice and person have become a recurrent theme in action research literature. Numerous action research projects try to integrate first-, second- and third-person inquiry, and their authors use multiple voices to report on these endeavours

(Bradbury & Mainemelis, 2001; Tsafos, 2010). In these accounts researchers distinctly set apart their subjective first-person voice (Chandler & Torbert, 2003) when they tell the story of their inquiry (Fisher & Phelps, 2006; Hyland, 2009) – position themselves as researchers and reflect on their experiences of facilitating the research process. The use of first-person "I" or "we" is a trademark in action research paradigm – it encourages the researcher's reflection upon experiences of engagement in action research and enables additional comments on what the researcher believes to have learned in the process (Wong, 2008; Bradbury Huang, 2010). Hence the author's subjective presence with his/her voice, interpretation and experiences plays a key role in narrating about action research process and outcomes (Fisher and Phelps, 2006) as the researcher becomes an instrument of interpretation in his/her own research (Bradbury & Reason, 2003).

Third-person voice comes to be heard in action research accounts when the authors relate the insights gained from their research to the broader scientific discourse of the scholarly community, seeking common points of reference or identifying possible tensions, and contemplating implications for practice beyond the immediate research locus (Fisher & Phelps, 2006). Integrating this voice in action research reports is recognised as a legitimate means for action researchers to support the quality (reliability and credibility) of the claims made in their research (Bradbury & Reason, 2003).

Finally, the multiple, inter-subjective second-person voices (Chandler & Torbert, 2003) hold the primacy in action research, because they are the voices of the participants of a cooperative inquiry process – people with shared concerns who work together in small groups to reflect on personally meaningful issues, in this process develop new ways of seeing the world and, possibly, identify practical solutions to their problems (Reason, 1999). Bradbury and Reason (2003) maintain that the researcher's task is to support these voices so that they can be heard expressing the inquiry group's perspective on the issues under study in an atmosphere of appreciated polyphony.

Strong argument is made in action research literature in favour of implementing such action research practices and creating such accounts on action research projects where all three voices are explicitly distinguished, thereby increasing the quality of the performed research (Chandler & Torbert, 2003; Reason & Bradbury, 2008). In line with that, when reporting on our experience of engagement in educational action research with pre-service teachers within the study courses "Environmental Pedagogy" and "Education for Sustainable Development", we will consciously seek to interweave all three of the above-mentioned voices into our account.

ICT-SUPPORTED LEARNING IN EDUCATIONAL ACTION RESEARCH IN THE CONTEXT OF DISCOURSE ABOUT SUSTAINABILITY

According to Bradbury (2003), when exploring sustainability related issues in higher education through action research, students should be encouraged to start by focusing on their own lives and experiences. Thus, learning for sustainability requires a continuum of deep learning that starts with our individual selves, expands to our relationships with others and reaches on into our communities and networks (Wheeler, 2007).

Our conception of the nature of learning inherent in the cyclical processes of educational action research for sustainability in teacher education is related to the view embraced by Yang (2003) who conceives of learning as an interpretation of experiences – their reviewing in a new light and reflecting on them with an intention of meaning making. In this perspective, reflection, which is a key component of any action research, is construed broadly as cognitively-affective learning from experiences of interaction with the world to achieve practical insight or wisdom (Leitch & Day, 2000) of sustainable living. We believe that such learning is most effective if it is not only performed individually through first-person inquiry, but also experienced dialogically in a second-person inquiry group. That is why we embrace the perspective on action research held by Friedman and Rogers (2009) who perceive action research to be an endeavour to understand the world in the way it is made sense of by the research participants through such communicative processes as dialogue. Thus, interpersonal dialogue in action research comes to be viewed as a medium of learning (Bradbury & Mainemelis, 2001).

Reason (2003) maintains that human knowledge of the world is essentially grounded in discourse, i.e. constructed discursively and cooperatively through reflexive exploration of our experiences of encounter with the world, which is why the fundamental concern of action research is to create arenas for discourse by opening up communicative spaces where such communities of inquiry can develop. Communicative spaces can be considered open if they provide conditions for democratic dialogue to unfold (Reason, 2003). In these communicative spaces action research participants engage in reflection on the meanings of their lived experiences and validate their insights linguistically via discursive substantiation (Bradbury & Reason, 2003; Reason, 2003; Ballard, 2005). In the educational action research phase reported on in this paper we attempted to create such a space where pre-service teachers could reflect on the meanings they attach to exclusion and exclusionary relationships in the society and education, legitimise their reflexive and experiential insights by communicating them to their peers as well as enrich own perspectives by exploring and reacting to their group mates' viewpoints.

Involvement in reflexive and constructive discourse in educational action research is said to be an effective means for exploring and, ultimately, transforming the participants' frames of reference (Gravett, 2004) – complex webs of assumptions, beliefs and values that serve as a lens through which we view the world and act within it (Cranton, 2000). Gravett (2004) argues that the starting point for exploration of the assumptions that underlie learners' frames of reference is formulation of a viewpoint on some issue. It thus follows that action researchers should aim to open up such spaces for reflection on experiences in the form of dialogue and conversation (Bradbury & Reason, 2003) where the participants' views on personally meaningful issues as well as related feelings and emotions are vented and shared in order to foster exploration and transformation of the participants' frames of reference. This argument is supported by Maurer and Githens (2009) who emphasise that dialogue in action research enhances mutual learning and understanding, and helps surface and question existing assumptions, related feelings and emotions, values, beliefs and tacit mental models (in other words, the participants' frames of reference). Thus, creation of spaces for dialogue on the participants' experiences of interaction with the world can have a transformative potential.

These spaces for discursive exploration of issues can be organised in a variety of ways. Our approach to the organisation of reflexive and discursive inquiry in educational ac-

tion research with pre-service teachers is related to the application of ICT for the creation of electronically-mediated environment for discourse and communication during study course acquisition in teacher education programmes. Academic discourse is replete with success stories of using on-line and blended environment for reflexive and dialogical learning (e.g. Held, 2011; Herden, 2011; Kapenieks, 2011). They strengthen our conviction that ICT-supported learning environment in educational action research should be constructive, cooperative and communicative. Walsh, Rutherford and Sears (2010) argue that collaborative and student-driven study course implementation, enriched with components of on-line learning where students reflect and comment on the ideas proposed by peers, permits learners to gain participatory learning experiences – students contribute to the course content by individual and group reflections on their experiences and thus participate in its creation. This way the values of partnership and equality espoused by action researchers can be practically enacted (Walsh et al., 2010). This perspective is supported by Shopova (2011) who argues that on-line activities should encourage learners to discursively create and share new content as well as involve them with their peers in personally-meaningful and reflexive conversations which would be grounded in that content. A recent study by Ter-Stepanian (2011) also highlights the importance of creating a collaborative and constructive on-line learning environment – establishing effective student-student and student-instructor interaction, engaging students and encouraging critical thinking and contribution of original ideas.

Driven by the above-described influences, we chose to try using the opportunities afforded by google.doc to create an ICT-supported learning environment for discourse on exclusion among pre-service teachers, which would complement discussions on this issue during presence classes. This paper reports on a trial run of using such an environment within the study course "Education for Sustainable Development". We hoped such a mode of learning, when pre-service teachers interact in small groups of three or four in an e-learning environment, would enable the voices of all students to be heard, which is sometimes hard to ensure in all-class discussions during presence seminars.

ENABLING PRE-SERVICE TEACHERS TO EXERT THEIR VOICE: METHOD

This paper presents an experience from a phase in a broader educational action research, implemented in Daugavpils University with future preschool and basic school teachers. As stated in the introduction to this paper, the meta-aim of our educational action research is to explore pre-service teachers' frames of reference and orient the latter towards inclusion as a precondition for developing sustainable relationships with the world. In the present case, the aim of inquiry was to ascertain the potential of google.doc environment to support the research participants' discourse on their understanding of the manifestations of exclusion and the nature of exclusionary relationships between an individual and the social and natural environment as a step towards preparing pre-service teachers to implement education for inclusion and sustainability in their future teaching practice. We also sought to identify what light pre-service teachers' involvement in electronically-mediated discourse on the nature of exclusionary relationships sheds on the frames of reference they use to make sense of this issue.

Owners of second-person voice in action research: Participants

25 female students of professional bachelor programmes "Preschool Teacher" (12 participants) and "Basic School Teacher" (13 participants) who are taking a study course "Education for Sustainable Development" in the first year of studies at Daugavpils University participated in the given phase of educational action research, conducted in the spring of the academic year 2010/2011. The students' engagement in the activity at the core of the phase which is reported on in this paper was voluntary. The dynamics of students' involvement will be analysed in the following sections.

For the purpose of initiating electronically mediated discourse in small teams, the preschool teachers' group was divided into four equal teams (three students per team). Similarly, the basic school teachers' group was split into four teams – three teams with three students per team and one with four. We grouped the students into teams in the order of their answering a pre-course online questionnaire about their understanding of exclusion – the first three students who filled in the questionnaire were put in Team 1 (t1), the following three students – in Team 2 (t2), etc. In qualitative analysis of the obtained data, our particular concern was to observe the ethical principles of confidentiality and anonymity (Wood & Kroger, 2000; Flick, 2007). The following procedures were performed: preschool teachers' and basic school teachers' groups marked as Group 1 (G1) and Group 2 (G2) respectively, students' names changed to pseudonyms.

Recording pre-service teachers' voice: Process of data collection

Data were collected in the google.doc environment specifically created for the purpose of the study. The opportunities afforded by google.doc environment for initiating and sustaining constructive and critical discourse in educational action research with correspondence students of economics have been examined before (Kapenieks, 2011). In our case, we wanted to try and use the facilities of google.doc in working with pre-service teachers to create a blended learning environment (Herden, 2011) – one in which discourse during presence lectures and seminars between the faculty and the students on the nature of exclusionary relationships is supplemented by discourse in an e-learning environment where the same topic is repeatedly explored in a more in-depth manner.

The electronic environment for communication and creation of discourse was shaped in the following way. An Excel worksheet outlining the questions intended to initiate the discussion and the planned structure of the unfolding discourse was created and uploaded onto our google.doc account opened for the purpose of the study. Such a worksheet stored in the google.doc environment is conductive to group learning on-line because it has the advantage of enabling several people who have access to the link to the document to simultaneously edit it. All content modifications can be traced to the user who performed them and to the time they were made, which permits the research facilitator to monitor the process easily.

The proposed pattern of discourse envisaged that the participating pre-service teachers on the basis of their personal experience describe the manifestations and characteristics of social exclusion in society (Question 1) and, more specifically, in education (Question 2), as well as suggest and discuss potential solutions that would help overcome exclusion in these two milieus (Questions 3 and 4). Spaces were provided in the created worksheet for students' replies to the proposed questions and their comments to group mates' utterances.

As stated above, our intention was to ground the learning on exclusion in the students' experiences and involve them in a collaborative ICT-assisted learning processes focused on co-learning and interaction in small discussion groups. We drew inspiration from the dialogical learning technique applied by Gravett (2004) in her educational action research with teachers when she invited them to join learning tasks built around open-ended questions that envisage articulation of viewpoints on specific issues in an environment of reciprocal interaction, exploration and inquiry, which creates conditions for reflexive and constructive discourse to unfold. In our study, the questions we proposed to the research participants were shaped to initiate critical discourse on assumptions underlying their frames of reference about exclusion and the nature of exclusionary relationships between individuals and their social environment.

Prior to their involvement in reflexive and constructive discourse in the google.doc environment, the research participants had an introductory lesson in a computer room where we acquainted them with the pattern of working in google.doc environment. Time was afforded for asking questions and resolving uncertainties. Then the link to the google.doc worksheet was e-mailed to the research participants' Gmail addresses. In this e-mail letter an assignment was given and clear instructions on what was expected from the students were provided (Joubert, 2011): (1) click on the link in the e-mail to access your google.doc worksheet; (2) read the questions in the google.doc worksheet and answer them; (3) monitor the worksheet until your teammates also provide their answers; (4) read and comment upon your teammates' answers.

Thus, we intended the communication between the teammates in the e-learning environment to be asynchronous (Held, 2011). All rounds of communication (steps 1–4) were performed during two weeks' time (April – May 2011). In all the rounds the total of 165 utterances (68 answers and 97 comments) was obtained from the 25 research participants. By becoming involved in the generation of discourse on exclusion in an e-learning environment, the participants created a multi-vocal text that integrates their different voices and serves as the grounds for learning in a community of inquiry through transforming tacit assumptions into visible and shared knowledge (Bradbury & Mainemelis, 2001). At the end of the above-mentioned period, the trial run of communication in the google.doc environment was stopped and we began the process of analysis by using the generated text as the core source of data. At this point, the research participants' second-person inquiry became the grounds for our first-person inquiry.

Exploring pre-service teachers' voice: Methods of data analysis

First, we applied the method of discourse analysis to the generated data with an aim to analyse the process of discourse creation in the google.doc environment so as to ascertain the potential of its continued and extensive usage to support discourse about sustainability related issues in educational action research with pre-service teachers. We embrace the perspective on discourse analysis advocated by Wood & Kroger (2000) who argue that the purpose of an analyst is not to try and identify one correct interpretation of the meaning enclosed in the content of discourse, but rather attempt to disclose the variability of patterns in the structure and organisation of oral or written speech.

The process of discourse analysis began by exporting the Ms Excel worksheet from the google.doc environment onto the hard disk of our computer. We then looked through the data, read them repeatedly and sought to answer the following questions:

- What were the variations in the pattern of discourse created by the participants?
- What met our initial expectations and what was unexpected?
- How could the communication be organised differently to avoid possible short-comings in future?

The results of this analysis will be presented in the following section of the paper.

Having completed the discourse analysis, we felt that, to get a deeper perspective, we should focus not only on the formal patterns of discourse, but also explore its content. We thus decided to also apply the method of qualitative content analysis to the generated data with an aim to examine the content of communication in the google.doc environment so as to ascertain the research participants' views on the nature of exclusion and exclusionary relationships with the world and ways to reorient them towards inclusion. We will now transparently outline the path of analysis that we followed as suggested in methodological literature on content analysis (Lee & Fielding, 2004; Flick, 2007).

Since the utterances generated by the research participants were relatively brief, we opted to use the microscopic approach (Druckman, 2005), i.e. focused our analysis on relatively small units of text – words, phrases and sentences. Within this approach, we adhered to the emergent coding procedure (Stemler, 2001), i.e. created categories after preliminary exploration of the data. Notably, during several repeated readings of the data, we sought to underline the key words and phrases that appeared in the answers, which gradually consolidated into an emergent system of categories (to be presented and discussed later in the paper). In the process of data analysis and its presentation in this paper, we will use the so-called participant approach which relies on quotations from the research participants to illustrate themes and support key findings (Glesne & Peshkin, 1992, as cited in Wong, 2008) in order to enhance the authenticity of the latter.

The key findings gleaned from the two above-described methods of data analysis will be outlined in the following section where we will try to provide expression for the research participants' second-person voices on exclusion and interweave them with our own first-person voice.

INTERPLAY BETWEEN FIRST- AND SECOND-PERSON VOICES IN THE DISCOURSE ON EXCLUSION: RESEARCH FINDINGS

Insights from discourse analysis

Discourse analysis of the future pre-school teachers' answers and comments yielded three discourse patterns in Group 1 (future preschool teachers). The teams 1 and 4 created a complete discourse pattern in that all the learners answered all four questions and commented all their peers' responses. The discourse in teams 2 and 3 was randomly incomplete in lacking one and three comments respectively out of the possible twenty-four in each case. This permits to conclude that the communication process in the e-learning environment in Group 1 was successful since nearly all the students used their voice to express their views on the issue under study.

In the group of future basic school teachers, three other discourse patterns were identified. The discourse created in team 6 was incomplete – all group members provided their

replies to the proposed questions, but the commentary was scarce, only five instances out of the possible 24. Teams 5 and 8 generated another type of incomplete discourse with only one student answering the proposed questions and no subsequent communication taking place. Finally, team 7 failed to provide any discourse with none of the group members getting involved in giving answers to the questions or commenting the peers' replies. Thus, it can be concluded that communication in the group of future basic school teachers was unsuccessful in that the voices of the research participants did not find full expression. Despite several reminding e-mails and repeated entreaties to contact the researchers in case of any misgivings or difficulties, we did not manage to involve the research participants in an electronic generation of discourse on social exclusion and their voices remained silent. One of possible reasons for this might be lack of motivation and experience with working in an e-learning environment among research participants, which might have caused some psychological barriers, a sense of insecurity and lack of personal accountability which is stronger in presence classes than in virtual learning environment. Therefore we believe that, when organising similar work in the future, careful thought should be given to countering the above-identified limitations of google.doc environment. Notably, it would be advisable to engage the participants in a longer trial run of the planned activity as well as provide more presence support and encouragement, combining classroom activities with virtual communication.

Table 1. Diversity of responses in the student-generated discourse

Type of response	Tally
Agreement	4 instances
Specified agreement	18 instances
Supplemented agreement	15 instances
Substantiated agreement	9 instances
Substantiated, supplemented agreement	16 instances
Specified, supplemented agreement	10 instances
Specified, substantiated agreement	1 instance
Specified, substantiated, supplemented agreement	5 instances
Partial agreement	2 instances
Specified partial agreement	2 instances
Supplemented, partial agreement	4 instances
Specified, supplemented, partial agreement	2 instances
Substantiated, supplemented, partial agreement	1 instance
Specified, substantiated, supplemented, partial agreement	3 instances
Specified **disagreement**	1 instance
Supplemented disagreement	1 instance
Substantiated supplemented disagreement	1 instance
Questioning	1 instance
Questioning agreement	1 instance

As a following step in the discourse analysis, we analysed the students' 97 reactions (commentaries) to their group mates' answers. Specifically, we looked to identify the types of reactions along the following variations and their combinations: agreement, partial agreement, disagreement, questioning, specification, substantiation and supplementation. Thus, each of the 97 commentaries elicited from the research participants was categorised along these lines. To increase the validity of the coding and subsequent interpretation, the former was performed independently by the two co-researchers and authors of this paper. The emerged codes were then compared in order to elaborate the final coding system. As a result, 19 types of reactions were identified in the research participants' discourse (Table 1). Unfortunately, spatial constraints of this paper make us forego including verbatim quotes from the research participants' discourse to illustrate the proposed typology.

It can be concluded that the research participants' used their second-person voice to generate discourse (commentaries to their peers' replies to the questions proposed by the researchers) which is diverse in its forms of utterances. Specified agreement, supplemented agreement and substantiated supplemented agreement emerged as the dominant types of reactions with specified supplemented agreement and substantiated agreement also rather frequent. Cases of disagreement or questioning the expressed opinions were comparatively rare. This allows for inferring that the pre-service teachers' voice in the research groups is quite unanimous in expressing the way they make sense of the characteristics and manifestations of exclusion and the possible ways of overcoming it both in the educational and wider social environment, though the research participants are rather inclined to complement their peers' voices with nuances of their own. It should be noted, however, that these conclusions can only be considered relevant for the first group of the research participants since no complete discourse was generated in the second group of the pre-service teachers whose voices, for the most part, remained silent. In future repetitions of this approach, ways should be sought to foster a greater criticality among the students. They should be encouraged to carefully and sensitively problematise the perspectives they encounter. Such criticality is crucial in education for sustainability, which debates ways of doing things better and living together to a greater mutual advantage.

Insights from qualitative content analysis

This section will outline the main insights gained through qualitative content analysis of the obtained data. Namely, we will try to focus on the research participants' second-person voice that outlines the content of the assumptions which underlie the research participants' frames of reference and determine the way they make sense of the manifestations of social exclusion in society and in education, and possible ways of overcoming it. The students' perspective on the characteristics and manifestations of social exclusion in society as revealed in their discourse is summarised in Table 2.

Table 2. Assumptions underlying the research participants' frames of reference for viewing the characteristics and manifestations of social exclusion in society

Category/sub-category	Sample content units
Economic aspect	Unemployment Poverty vs. financial well-being Social stratification
Educational aspect	Lack of knowledge and skills Lack of education
Internal problems of the excluded	People are made 'invisible' People's voices are not being heard People feel unneeded Sense of helplessness Sense of inequality 'Falling out' of a social group Withdrawal Alienation from the society Unwillingness/inability to participate
Unappreciated diversity	Race/culture/nationality/social status or position in society Avoiding people with special needs Not accepting others due to their differences – beliefs, behaviour, appearance Discrimination, inequality Prejudice
Conflicting relationships	Disagreement Conflicts among various cultural and social strata Violence Mocking, making fun of
Affect	Hatred Envy Disrespect Egoism Dislike towards other forms of life

The data outlined above indicate that the pre-service teachers involved in this study specifically distinguish the economic and educational aspects of social exclusion in society. In economic terms, they view exclusion as manifested through unemployment and poverty as contrasted to the financial well-being of the mainstream part of the society, which contributes to social stratification. From educational perspective, the students emphasise lack of knowledge and skills and overall lack of access to education. The pre-service teachers' voices reveal that they make sense of social exclusion as stemming from unappreciated diversity, prejudice and discrimination on the basis of one's race, culture, nationality, social status, health, appearance, behaviour, etc. Crucially, social exclusion for the research participants is manifested as conflicting relationships – disagreement and conflicts that may even escalate to violence. Moreover, the pre-service teachers relate social exclusion to certain affects, such as hatred, envy, disrespect, egoism, etc. When being socially excluded, the people are 'made invisible', their voices are not heard, they feel unneeded and helpless, thus withdrawing into themselves and 'falling out' of the society and at times even losing any willingness to participate in the social processes of the mainstream. It can be concluded that the students' frames of reference for making sense of social exclusion underscore its economic and educational aspects, regard it as

stemming from unappreciated diversity which leads to conflicting relations, experiencing of negative affect and incurs internal problems for the excluded.

The research participants' second-person voices that express their views on the prerequisites for overcoming social exclusion in society are presented in Table 3.

Table 3. Assumptions underlying the research participants' frames of reference for viewing the prerequisites for overcoming social exclusion in society

Category/sub-category	Sample content units
Wish to cooperate and participate	Mutual agreement, searching for a compromise Wish to cooperate Everyone's involvement, searching for solutions together Helpfulness
Supportive people and environment	Environment that would promote inclusion Conditions where people wouldn't be afraid to open up and trust others Understanding people and society Secure environment Society must change Support and help from the other around
Governmental assistance	Governmental reforms for people to be materially equal Support from the state and employers – jobs for people with special needs Governmental support and allowances
Morally ethical perspective/ emotional support	Empathy, compassion Love Tolerance Accepting and promoting the idea of equality Not being egoistic Responsibility
Self-directedness	Inner strength, willpower Courage Ability to set an aim and strive to achieve it Care for oneself and one's future Ability to listen to critique
Opportunities for self-realisation	Opportunity to obtain education Opportunity to work Chance to live a full-fledged life
Upbringing/education/ information	Upbringing in the family – that people need to be respected Informative clips that demonstrate the feelings of the excluded Public discussion of this issue

The students believe that to overcome social exclusion people need supportive human others in a supportive environment (one that is understanding, secure, inclusive and favouring change) and governmental assistance in the form of reforms, new workplaces and allowances for the disadvantaged. They also highlight the importance of upbringing in the family, education, information on the exclusion-related issues and their public discussion. In overcoming social exclusion, the pre-service teachers attribute a determining role to the person him-/herself. In their opinion, people need to develop such qualities as willpower, inner strength, courage and active care about oneself and one's future. Besides, the students underscore moral and affective considerations – need for empathy, compassion, tolerance, responsibility and equality. Also, to avoid exclusion people need

to opportunities for self-realisation through education, a chance to work and support one-self so as to live a full-fledged life. Thus, according to the assumptions in the pre-service teachers' frames of reference, the chief factors that can help overcome social exclusion are moral and emotional support from the surrounding people, governmental assistance, opportunities for self-realisation, inclusion-oriented upbringing and education and person's willingness to become involved and overcome difficulties.

The pre-service teachers' second-person voices that recount their views on the manifestations of social exclusion in the educational setting are presented in Table 4.

Table 4. Assumptions underlying the research participants' frames of reference for viewing the characteristics and manifestations of social exclusion in education

Category sub-category	Sample content units
Teacher's actions: sorting unequal treatment no chance for self-expression	Teachers 'sorting' children into winners and losers, the clever ones and those not so clever, the poor and the rich Teachers' 'pets', more attention is paid to them Unequal attitude on the teacher's part Children have no chance to express their opinion Subjective evaluation
Peer's actions: not accepting/pushing away mocking	Children themselves sort each other, groups are formed Children are not accepted in the group Avoiding children from disadvantaged families Children (especially those who are different) are mocked and ridiculed The leaders chaff those who are not so rich, successful, athletic or clever
Psycho-social consequences	Children acquire complexes Shyness, withdrawal Fear, insecurity Low self-esteem Feeling humiliated Negativism as self-preserving reaction
Academic achievement	Learning difficulties Unwillingness to learn Children with lower grades begin to feel unwanted in the classroom
Lack of governmental support/ financial aspect	Lack of scholarships and budget-financed study places Inability to study due to lack of financial means (exclusion on the part of the state) Lack of municipal support

The research participants make sense of social exclusion in education as being manifested through the actions of teachers and peers (as unequal treatment, sorting into groups, etc. in the first case and as mocking and pushing away in the latter case). In the students' frames of reference, social exclusion in education is related to academic achievement with children who have lower grades not feeling accepted in the classroom, having learning difficulties and losing willingness to learn. The research participants assume that socially excluded people suffer from psycho-social consequences of being rejected – they feel shy, insecure and unworthy, which may lead to negativism as a form of self-preservation. The students' voices also permit to link social exclusion in education to lack of (financial) support from the government which restricts the access to free education for all. It can be concluded that the assumptions enclosed in the pre-

service teachers' frames of reference lead them to relate social exclusion in education to lack of governmental support, as well as make sense of it in terms of the actions of teachers and other schoolchildren, pupils' academic achievement and the inner psycho-social peculiarities of the excluded.

The research participants' second-person voices on the prerequisites for overcoming social exclusion in education are summarised in Table 5.

Table 5. Assumptions underlying the research participants' frames of reference for viewing the prerequisites for overcoming social exclusion in education

Category/sub-category	Sample content units
Teacher's attitude	Tolerant attitude Equal attitude Understanding attitude
Teacher's knowledge and skills	Teacher needs to be wise and knowledgeable Teacher need an ability to explain these things to pupils
Teacher's actions	Teacher needs to ensure that the child feels well in the school environment Equal treatment of all pupils Not neglecting those who have learning difficulties Being attentive to every child Observing and discussing disagreements among children Teacher's involvement, showing the right example
Pupils' attitude and actions	Equal attitude Helpfulness Friendliness Mutual understanding Pupils need to learn to be compassionate to their peers Others should not be treated only according to their material status of appearance
Accepting diversity	People need to be accepted and respected irrespective of their living circumstances Appreciating and accepting diversity, we all cannot be the same
Support and understanding of all persons involved	Teachers, psychologists, social pedagogues – their work with children for promoting changes in children's attitude towards the excluded Parents also have a great role Ability of those working in the educational setting to find adequate solutions in specific situations
Governmental support	Everyone must be given a chance to obtain education The state needs to create a support system for helping the excluded children to acquire education State support to education (budget places, free education)

Assumptions enclosed in the research participants' frames of reference lead them to consider the teacher (his/her attitude, knowledge, skills and actions) as one of the key figures in overcoming social exclusion in education. They believe the teacher ought to be wise, tolerant and understanding, treat all children equally, be attentive to every child, willing to get involved and timely and adequately solve the difficulties that arise among the pupils. Moreover, the students regard the support of the government and all persons involved in the educational process (including parents, psychologists, social pedagogues) as crucially important. They thus conceive the overcoming of exclusion as a complex approach that involves multiple stakeholders. The research participants' voice also high-

lights acceptance and appreciation of diversity as a key issue in overcoming social exclusion in education, as well as underscores the effect of pupils' attitude and actions.

The insights gained through our analysis of the research participants' second-person voices (the discourse patterns their voice had generated and the students' assumptions about social exclusion it had expressed) will be discussed in a somewhat broader context and related to the results of other relevant studies in the final sections of this paper.

POLYGLOSSIA IN THE FINAL STAGE OF REPORTING: DISCUSSION AMONG MULTIPLE VOICES

In this section, we will try to seek broader contextual groundings for our action research and attempt to interweave our own first-person voice and the research participants' second-person voices with the contemporary academic discourse on (teacher) education for sustainability generated by third-person voices of the scholarly community.

As stated above in the paper, the goal of sustainable living requires radical changes in the way we make sense of the world and ourselves within it. In other words, developing sustainable relationships with the world necessitates a transformation in our frames of reference, which can be achieved via critical reflection on the assumptions that determine the way we interpret our experiences of being and acting in the world (Ballard, 2005) among human and non-human others, in the community of life and its support system. It raises important challenges for education, teacher education in particular, because it is teachers who are and will be nurturing future members of a sustainable world and encouraging the above-mentioned transformation.

Therefore, we firmly believe that teacher education for sustainability ought to be inquiry-driven and hence grounded in action research. According to Tsafos (2010), action research in teacher education enables pre-service teachers to seek answers to complex issues and develop the skills of learning from experience and from others in a community of inquiry. Thus, the action research approach to teacher education permits to explore and develop the frames of reference that pre-service teachers use for constructing meanings from reflection on their experiences (Price & Valli, 2005). When students reflect on their experiences individually and in groups and share the insights arrived at, they uncover their own way of seeing the world and become more open to new perspectives (Walsh et al., 2010). In line with this argument, in the presented study we attempted to involve pre-service teachers in exerting their voice to uncover the assumptions about exclusion and the nature of exclusionary relationships in social and educational contexts that underlie their frames of reference with an aim of encouraging pre-service teachers to reflect critically on our ways of being in and relating to the world around us. We regard it as a crucial step in pre-service teachers' preparation to become the implementers of sustainability oriented education. An analysis of the types of responses that the students gave to their peers' comments suggests that there is still scope for improvement in the pre-service teachers' ability to question and problematise the viewpoints they encounter. This remains an important implication for future work.

Another important feature of action research, which renders it compatible with the goal of sustainability, is its orientation towards the promotion of the personal and social

'good' for individuals and their communities, and the world at large (Schostak, 2010). It means that action research is essentially phronetically oriented – concerned with seeking phronesis or moral practical wisdom of insight which derives from reflection on past experiences and present contexts and is oriented towards the promotion of good for as many of the concerned parties as possible (Salīte, Gedžūne, & Gedžūne, 2009). The 'good' of action research is defined by Schostak (2010) as engagement of multiple voices in the creation of conditions for a more socially just living and co-action, which can be achieved by tapping into humans' creative potential to effect desirable changes, relate with each other and the world, and imagine ways of doing things better. We believe that these goalposts of action research are situated in close proximity to the aim of overcoming exclusion and developing inclusive and sustainable relationships with the world. In this sense, the use of action research in our study permitted to match the pedagogical form of teacher education for inclusion and sustainability to its content and purpose – phronetically oriented educational action research for reflexive exploration of the nature of exclusion in social and educational contexts and contemplation of ways to overcome it.

In the educational action research phase reported on in this paper, we attempted to locate the above-mentioned phronetically oriented reflexive processes in the e-learning environment of google.doc. The use of ICT-supported learning environment in sustainability-oriented teacher education is becoming increasingly popular worldwide, chiefly because of its flexibility and accessibility at a time self-selected by the learners as well as due to its potential to provide participatory, collaborative and interactive learning experiences as learners reflect on topical sustainability related issues in a spirit of participatory inquiry (Walsh et al., 2010; Whitehouse, 2008). Our study bears contradictory evidence regarding the effectiveness of the chosen medium for discourse on exclusion among the research participants. One group of the pre-service teachers appeared active in exerting their second-person voice for the creation of discourse (answering reflexive questions, reading and commenting their peers' ideas, supplementing them with nuances of their own) whilst the other group remained virtually inactive. One of the possible reasons for this inactivity may have been the a-synchronic nature of communication – students had to wait for answers from their peers in order to comment on them. Procrastination of others, possibly caused by scant experience of ICT-supported learning among the students, may have discouraged those who began with full intention to be active. Thus, its specifically technical nature and the a-synchronicity of communication emerge as limitations of google.doc learning environment. On a brighter note, there are studies which suggest that this challenge can be adequately met by affording the learners more time to get accustomed to using technologies in the learning process so that they gradually overcome the anxiety of working in an ICT-supported learning environment (Walsh et al., 2010). Supported by our own experience from the present study, we are inclined to follow this suggestion in the upcoming educational action research cycles with pre-service teachers.

Finally, we would re-emphasise that, by purposefully trying to include multiple voices in our account of the present educational action research phase as suggested by Quicke (2010), we sought to increase the value and quality of the performed action research. Through this multi-vocalism (our first-person voice, the second-person voices of the participants and the third-person voice of the scholarly community) we intended to

convey a richer picture of our issue of concern – educational action research as grounding for the implementation of teacher education for sustainability, focused on seeking ways to encourage critical reflection and critical discourse on the quality of relationships (inclusive or exclusionary, sustainable or unsustainable) between individuals and the social and natural environment, thereby engendering an exploration and, potentially, transformation of the learners' underlying frames of reference. We agree with Hepburn and Potter (2007) that research insights should be validated through publication of journal articles and conference reports, thereby contributing to the expansion of academic discourse and promotion of intellectual debate for understanding various issues. This strategy of discursive substantiation is recognised as an appropriate means to raise the quality of action research projects (Bradbury & Mainemelis, 2001; Bradbury & Reason, 2003). This paper is a product of continued reflection on our experience of engagement in educational action research with pre-service teachers, which has been gradually refined through publication and valuable feedback from international audience and peer review. Notably, the methodological framework of this paper (our approach to discourse analysis and qualitative content analysis of the discourse generated by the research participants in an ICT-supported learning environment of google.doc) derived from the methodological framework we used in an interrelated research phase, conducted at roughly the same tame and in the same research environment but focusing on uncovering how pre-service teachers make sense of inclusive rather than exclusionary relationships between individuals and the environment. We hope this conference report will likewise permit us to gain valuable insight into the future organisation of our research.

CONCLUSION

The educational action research phase reported on in this paper sought to determine the potential of using electronically-supported learning environment of google.doc to engage future preschool and basic education teachers in discourse about the nature of exclusionary relationships. We also aimed to identify what light the participants' involvement in electronically-mediated discourse on the said topic sheds on the frames of reference they use for making sense of this issue. The following conclusions were drawn.

An analysis of variability in the patterns of discourse generated by the research participants suggests that the students' voice in the research groups is quite unanimous regarding the characteristics and manifestations of exclusion and the possible ways of overcoming it both in the educational and wider social environment. The students who became actively involved in the generation of discourse seem to have reached a certain degree of agreement about the nature of social exclusion and ways of its prevention, though, at the same time, appear rather inclined to complement their peers' voices with characteristic nuances of their own. Further attempts should be made in the future to create conditions which would serve to develop the students' criticality in terms of ability to delicately question and problematise the perspectives they encounter. It is a crucial capacity in a pedagogue who is teaching for and about sustainability, which involves helping her pupils critically address their own and others' views in the quest for better and more mutually satisfying ways of being in and relating with the world.

Qualitative content analysis of the generated discourse suggests that the frames of reference which the participants use to make sense of exclusionary relationships in social and educational contexts are grounded in specific assumptions. The findings indicate that, though by no means the only player, the teacher is nevertheless considered a central figure in reducing social exclusion in educational setting. We thus conclude that teacher educators ought to seek opportunities to heighten pre-service teachers' awareness of this issue and encourage a deep personal commitment to inclusive teaching practices, which can be achieved by developing their personal and professional frames of reference through reflexive and discursive learning processes inherent in action research.

Our study suggests that, despite some limitations, the environment of google.doc has the potential to be used for initiating pre-service teachers' discourse on the issue of exclusion. This potential can be further increased by taking care to afford sufficient time for the students to get used to such a mode of learning, as well as by ensuring consistent tutor's support and availability for answering any queries, resolving felt concerns and alleviating anxieties.

Our experience form the present phase of educational action research also enables us to conclude that presenting an action research fragment as a multi-vocal account, highlighted by a dynamic interplay between first-, second- and third-person voices, permits to convey a richer perspective on the process of the conducted inquiry and its outcomes as well as their relevance for the direct participants of the research process and the wider community of scholars and practitioners beyond the immediate research locus.

ACKNOWLEDGEMENT

REFERENCES:

Ballard, D. (2005). Using learning processes to promote change for sustainable development. *Action Research, 3*(2), 135–156. DOI: 10.1177/1476750305052138.

Bowring, F. (2000). Social exclusion: Limitations of the debate. *Critical Social Policy, 20*(3), 307–330. DOI: 10.1177/026101830002000303.

Bradbury, H. (2003). Sustaining inner and outer worlds: A whole-systems approach to developing sustainable business practices in management. *Journal of Management Education, 27*(2), 172–187. DOI: 10.1177/1052562903251414.

Bradbury Huang, H. (2010). What is good action research?: Why the resurgent interest? *Action Research, 8*(1), 93–109. DOI: 10.1177/1476750310362435.

Bradbury, H., & Mainemelis, C. (2001). Learning history and organizational praxis. *Journal of Management Inquiry, 10*(4), 340–357. DOI: 10.1177/1177/1056492601104008.

Bradbury, H., & Reason, P. (2003). Action research: An opportunity for revitalizing research purpose and practices. *Qualitative Social Work, 2*(2), 155–175. DOI: 10.1177/1473325003002002003.

Chandler, D., & Torbert, B. (2003). Transforming inquiry and action: Interweaving 27 flavors of action research. *Action Research, 1*(2), 133–152. DOI: 10.1177/14767503030012002.

Cranton, P. (2000). Individual differences and transformative learning. In J. Mezirow & Associates (Eds.), *Learning as transformation: Critical perspectives on a theory in progress* (pp. 181–204). San Francisco, USA: Jossey-Bass.

Druckman, D. (2005). *Doing research: Methods of inquiry for conflict analysis*. Thousand Oaks, CA: Sage.

Fisher, K., & Phelps, R. (2006). Recipe or performing art?: Challenging conventions for writing action research thesis. *Action Research, 4*(2), 143–164. DOI: 10.1177/1476750306063989.

Flick, U. (2007). *Designing qualitative research* (Book one of the SAGE Qualitative Research Kit). London, UK, Thousand Oaks, USA and New Delhi, India: Sage.

Friedman, V. J., & Rogers, T. (2009). There is nothing so theoretical as good action research. *Action Research, 7*(1), 31–47. DOI: 10.1177/1476750308099596.

Gravett, S. (2004). Action research and transformative learning in teacher development. *Educational Action Research, 12*(2), 259–272. DOI: 10.1080/09650790400200248.

Held, P. (2011). Implementing eLearnign and eExamination in European universities: Factors of success. In Proceedings of international conference *The Future of Education*, 16–17 June 2011 (pp. 116–120). Florence, Italy: Simonelli Editore University Press.

Hepburn, A., & Potter, J. (2007). Discourse analytic practice. In C. Seale, G. Gobo, J. F. Gubrium & D. Silverman (Eds.), *Qualitative research practice* (pp. 168–183). London, UK: Sage.

Herden, O. (2011). Constructing blended learning and e-learning material for higher education. In Proceedings of international conference *The Future of Education*, 16–17 June 2011 (pp. 105–110). Florence, Italy: Simonelli Editore University Press.

Hyland, N. E. (2009). Opening and closing communicative space with teachers investigating race and racism in their own practice. *Action Research, 7*(3), 335–354. DOI: 10.1177/1476750309336717.

Joubert, D. (2011). Using e-learning as a method to conduct Work Integrated Learning for law students in South Africa. In Proceedings of international conference *The Future of Education*, 16–17 June 2011 (pp. 146–150). Florence, Italy: Simonelli Editore University Press.

Kapenieks, J. (2011). E-learning environment for sustainability in action research. In Proceedings of the 9th JTEFS/BBCC conference *Sustainable Development. Culture. Education: BBCC Mission: BBCC Mission – Reorientation of Teacher Education and Research in Education for Sustainable Development*, 18–21 May 2011, CD (pp. 297–319). Siauliai, Lithuania: Vš Šiauli universiteto leidykla.

Kasper, D. V. S. (2009). Ecological habitus: Toward a better understanding of socioecological relations. *Organization and Environment, 22*(3), 311–326. DOI: 10.1177/1086026609343098.

Koller, V., & Davidson, P. (2008). Social exclusion as a conceptual metaphor: A cross-genre study of British policy-making. *Discourse & Sociology, 19*(3), 307–331. DOI: 10.1177/0957926508088963.

Lee, R. M., & Fielding, R. (2004). Tools for qualitative data analysis. In M. Hardy & A. Bryman (Eds.), *Handbook of data analysis* (pp. 530–544). London, UK, Thousand Oaks, USA and New Delhi, India: Sage.

Leitch, R., & Day, C. (2000). Action research and reflective practice: Towards a holistic view. *Educational Action Research, 8*(1), 179–193.

Maurer, M., & Githens, R. P. (2009). Toward a reframing of action research in human resource and organization development. *Action Research, 8*(3), 267–292. DOI: 10.1177/1476750309351361.

Peace, R. (2001). Social exclusion: A concept in need of definition? *Social Policy Journal of New Zealand, 16*, 17–35.

Price, J. N., & Valli, L. (2005). Preservice teachers becoming agents of change: Pedagogical implications for action research. *Journal of Teacher Education, 56*(1), 57–72. DOI: 10.1177/0022487104272097.

Quicke, J. (2010). Narrative strategies in educational research: Reflections on a critical autoethnography. *Educational Action Research, 18*(2), 239–254. DOI: 10.1080/09650791003741582.

Reason, P. (1999). Integrating action and reflection through co-operative inquiry. *Management Learning, 30*(2), 207–226. DOI: 10.1177/1350507699302007.

Reason, P. (2003). Pragmatist philosophy and action research: Readings and conversation with Richard Rorty. *Action Research, 1*(1), 103–123. DOI: 10.1177/14767503030011007.

Reason, P., & Bradbury, H. (2008). Introduction. In P. Reason & H. Bradbury (Eds.), *Sage handbook of action research: Participative inquiry and practice* (2nd ed.) (pp. 1–9). London: Sage Publication.

Salīte, I., Gedžūne, G., & Gedžūne, I. (2009). Educational action research for sustainability: Seeking wisdom of insight in teacher education. *Journal of Teacher Education for Sustainability, 11*(2), 14–30. DOI: 10.2478/v10099-009-0037-y.

Schostak, J. (2010). What is the 'good' of Bridget Somekh? A celebration of and critical reflection on a career as an action researcher. *Educational Action Research, 18*(1), 5–17. DOI: 10.1080/09650790903484491.

Shopova, T. (2011). E-learning in higher educational environment. In Proceedings of international conference *The Future of Education*, 16–17 June 2011 (pp. 111–115). Florence, Italy: Simonelli Editore University Press.

Stemler, S. (2001). An overview of content analysis. *Practical Assessment, Research & Evaluation, 7*(17). Retrieved September 30, 2011, from http://PAREonline.net/getvn.asp?v=7&n=17

Ter-Stepanian, A. (2011). Making art history come alive in the online classroom. In Proceedings of international conference *The Future of Education*, 16–17 June 2011 (pp. 20–25). Florence, Italy: Simonelli Editore University Press.

Tsafos, V. (2010). Developing a practice-theory model in pre-service teacher education in Greece: The implications of action research: A case study. *Action Research, 8*(2), 153–170. DOI: 10.1177/1476750309335041.

Walsh, C. A., Rutherford, G. E., & Sears, A. E. (2010). Fostering inclusivity through teaching and learning action research. *Action Research, 8*(2), 191–209. DOI: 10.1177/146750309351360.

Wheeler, K. A. (2007). Learning for deep change. *Journal of Education for Sustainable Development, 1*(1), 45–50. DOI: 10.1177/097340820700100110.

Whitehouse, H. (2008). "EE in cyberspace, why not?" Teaching, learning and researching tertiary pre-service and in-service teacher environmental education online. *Australian Journal of Environmental Education, 24*, 11–21.

Wong, E. S. (2008). Explication of tacit knowledge in higher education institutional research through the criteria of professional practice action research approach: A focus group case study at an Australian University. *International Journal of Doctoral Studies, 3*, 43–58.

Wood, L. A., & Kroger, R. O. (2000). *Doing discourse analysis: Methods for studying action in talk and text.* Thousand Oaks, USA, London, UK and New Delhi, India: Sage.

Yang, B. (2003). Toward a holistic theory of knowledge and adult learning. *Human Resource Development Review, 2*(2), 106–129. DOI: 10.1177/1534484303002002002.

Participatory and inclusive experience of doing inquiry: A case study from Latvia

Dzintra Iliško and Ilona Mičule

Daugavpils University, Latvia

ABSTRACT

The objective of this study is to explore the possibilities of integration of research as a tool of fostering participative and inclusive practice in secondary schools of Latvia. The study reveals the tensions teachers are facing, as well as highlights challenges the teachers encounter while integrating research into their teaching. This study is based on data gained in four focus group interviews in four regions in Latvia (N=82). The focus group interviews reveal how individual teachers define inclusive environment as reached by the means of integrating research as a tool in the mainstream education. The detailed description of the story of success of a single teacher, as presented in this article, is supported by the evidence gained during one year long observation protocols. The case study highlights the core principles of teaching as an inquiry, such as setting suitable learning challenges, responding to the diverse needs of pupils, overcoming potential barriers of learning for an individual learner, and fostering creativity. The results of the study indicate that the success of integrating inquiry in everyday reality depends upon teacher's competence and experience to integrate inquiry into teaching. The research contends that pupils' engagement in research should become an integrative component in the mainstream education.

Key words: pupils' inquiry, inclusive environment, teachers' attitude, the story of success, pupils' creativity

THE CONTEXT OF DOING RESEARCH IN THE SECONDARY SCHOOL SETTING

Education system in Latvia sets the aim to prepare young people for life in a globalised world and act in a market based economy. This is not enough to master knowledge. Specific attention needs to be paid to developing pupils' critical thinking and creativity. Teaching cannot be organised as passing over readymade information to pupils, but is viewed as a process where they make sense of events by actively constructing meaning, raising problems, thinking critically and researching. Learning is not viewed any more as memorising the information from textbooks, but rather as doing different projects through dialogue and discussion. Learning becomes an active process of meaning-making, where teachers raise questions and create favourable conditions for the learning to occur.

The research is a part of curriculum in the mainstream school curriculum at all stages in Latvia. In the secondary school, the elements of inquiry are integrated in all subject areas. Particular focus when doing inquiry is paid on the process of designing a research work in the subject area of pupil's own choice during the whole study year. Pupils defend their research at their own school. The best research works are selected for the evaluation at the city level and further – at the national level. The research work is carried out by the senior form pupils (aged 16–19). The pupils can choose the field in which to carry out their research work. Pupils choose to carry out research in diverse subject areas: exact sciences, social sciences and humanities. The selected research works are submitted for the evaluation on the city level.

There are several schools with rich research traditions where the administration of the school in collaboration with teachers foster pupils' research competency and gain the highest evaluation on both, – the city and national level. The evaluation of the selected research works from the pool of the best works presented by the majority of schools in the region in Latgale during the last three years indicates that the most preferred fields of doing research are in humanities (foreign and native languages) and natural sciences (biology, chemistry). The choice of the area of study is closely connected with the further field of study of the pupil, as well as the charisma, enthusiasm and devotion of the subject teacher to motivate the pupils for a deeper study of this particular subject area. The majority of the topics chosen for a deeper study are closely related to the school curriculum. Though, few projects point to a novelty and originality of the study topics that are not part of a compulsory curriculum, like, gender studies (women in the military service), psychology (the phenomenon of lying, the impact of colour on person's emotions), literature (the metamorphoses of the image of vampire in the 19th century English literature). A number of issues chosen for the research have a practical implication on pupil's life, and they cover the environmental aspects of sustainability (like the influence of cosmetics on person's health, computer addiction, the influence of mobile phones on person's health, the use of antibiotics and body's resistance to it, strategies of dealing with conflicts, the quality of reflectors, the most preferred yogurts among the secondary school pupils). Pupils also choose research topics related to the global issues, like global warming, the ecological situation in a certain region, the impact of ecological crises on person's health).

The choice of pupils' research projects points to the impact or a role of a mentor of the research project, particularly the impact of teachers who recently have graduated the Master's programme in social sciences.

The total number of works submitted for the evaluation in 2010 is N=150, in 2011 N=225 and in 2012 N=229 (Table 1).

Table 1. Research carried out by the secondary school pupils as submitted for the evaluation on the city level in Latgale region (years 2010–2012)

Field of the research	2010	2011	2012
History	-	-	24
Politics	-	4	-
Foreign languages (Russian)	10 (English/German)	15 (Russian)	15 (Russian)
Latvian language	2	-	5
Latvian literature	6	-	-
Mathematics	7	15	13
Chemistry	14	22	5
Geography		7	-
Environmental studies	3	-	13
Physics	11	-	7
Biology	14	20	16
IT	5	6	10
Art		7	5
Pedagogy	4	-	5
Psychology	9	2	2
Health study	8	-	21
Economics	5	-	9
Politics	3	-	-
Culture studies	16	-	10
Philosophy	1	-	-

PUPILS' INQUIRY AS AN OPPORTUNITY TO REGAIN VOICE

Feminist, critical, constructivist and multicultural pedagogy (Freire, 1990; Nieto, 2000; Kirby, 2001; Cook-Sather & Shultz, 2001; Rodgers, 2006; Kellett, 2010) emphasises that teaching can be improved by listening closely to pupils' perspectives. Pupils have unique perspectives on learning, and their insights make them more responsible for their learning and shaping education. As Levin (1994) and Paterson (2012) argue, the most effective strategy is to treat pupils as capable persons, by acknowledging their interests and engaging them in determining goals and learning methods.

The metaphor of 'voice' means giving a possibility of meaningful and acknowledged presence to each child. This means giving power for the self-direction in one's learning, having agency and power to speak up one's mind, to be heard and to be taken into account by others. Pupils having their voice change the whole power dynamics in the classroom, allow a more democratic dialogue and speak out on their own behalf. Pupils overcome

alienation from the learning process and begin engaging in decision making processes that affect their learning. Thus, schools empower pupils to take charge in decision-making and responsibility regarding their learning. Heard and given space for expressing themselves, pupils feel encouraged to improve their own efforts.

Inquiry helps to restructure power relations in the classroom as well. It reorients the control from being imposed by the teacher to being initiated by the learner. Then the focus of control is relocated on the learner, the learner discovers the control within the learning situation. The pupil develops belonging to the learning environment. The issue of external control as addressed by a number of scholars proceeds the consequent stages: provision of expectations for appropriate action, separation, alignment and cohesion of a group of learners in order to "spin off" into idiosyncratic conduct (McWilliam & Dawson, 2008, p. 638).

Pupils' inquiry develops 'relational knowing' (Noddings, 2004) that includes personal investment, transformations, reciprocity between the pupil, the teachers and the learning community. It entails a sense-making processes. Relational knowing fosters the discovery of pupils' potential.

METHOD

The qualitative part of the study reveals data gained in focus group interviews with the teachers from 4 regions in Latvia (N=82). The research question focuses on the rationale teachers provide for integrating research in the mainstream setting as a means of creating inclusive and participatory research environment. It focuses on the obstacles teachers are facing in the process of implementing this agenda.

The case study presented in this article is based on the detailed analyses of narratives of one teacher who represents the case of good practice. The data gained from the narrative accounts are conceptualised in the ontological and epistemological understandings of teacher's practice towards creating inclusive and participative learning experience for her pupils. Data are supported by classroom observations and interviews with the teacher.

Classroom observations are always followed by conversations with the teacher, critically analysing the consequences of teaching as an inquiry, questioning the moments of teaching. One day long workshop with the teacher offered the possibility, first, to observe the teacher in her classroom, afterwards, to question the problematic moments in her teaching, to focus on theoretical notions regarding her inquiry approach in a community of other teachers. The workshop with teachers, who had a chance to observe teacher's lessons as well, engaged in a critical theorising and served an important role in the analyses of the obtained data (Veale, 2005).

A critical case study allowed the authors to closely examine pupils' experience. We used notes and reflection about the process as reflective observers. This study contributed to our understanding about the value of inquiry in a highly competitive school setting.

Data gained in focus group interviews

From the data gained in four focus group interviews (N=82), it appears that successful inclusion by the means of inquiry depends on teachers' attitudes to its implementation and teachers' competence and courage to integrate research into everyday reality of the mainstream school setting. Successful integration of research depends on teachers' willingness to incorporate inquiry in teaching, clarity of vision and competencies.

The focus group teachers pointed to the following features of inclusion as reached by the means of engaging pupils in doing research, as seen in Table 2.

Table 2. Teachers' definition of inclusion as reached by integrating inquiry in teaching (%) of respondents) (N=82)

Statement	%
Positive attitude toward all children	80%
Responding to the diverse needs of each pupil	42%
Positive learning environment	42%
Inclusion of all pupils	82%
Safe learning environment	94%
Setting manageable difficulties	23%
Additional support to pupils	42%
Valuing each child	23%
Treating all children as equals	21%
Responding to the diverse learning styles of pupils	43%
Taking into account the experience of every child	12%

Majority of the teachers support the idea of inclusion in general by the means of inquiry. The teachers' conceptualisation of inclusion is quite wide since it is shaped by media, in-service courses and academic debate. The teacher's statements about the inclusive environment as reached by the means of engaging pupils in doing inquiry is not related only to the inclusion of children with special needs, but is seen much broader.

The teachers admitted that it is easy to trace tension between rhetoric and reality, with a reference to structural barriers to inclusion and personal experience of exclusion.

The majority of statements about inclusivity were related to the principles of a child-centred pedagogy: respect for each individual child, responding to the diverse learning needs of children, taking into account pupils' cultural background and experience. The teachers also expressed some negative sentiments regarding inclusion, such as the need to reinforce pupils to undertake responsibility in line with integrating basic principles of individual's freedom.

In a highly individualistic culture of the classroom where each participant is used to listen only to one's own voice, the teachers commented that they use interchangeably all types of collaboration: individual work of each learner, group work (doing the same work at the same time, team work (doing different things at the same time), thus reaching paradoxical 'team dynamics.' Those strategies allow the teachers to create the environment that minimises command and control while providing scaffolding opportunities for children in order to optimise team performance.

Several teachers admitted that one of the biggest challenges for them was to find the balance between the role of a didactic teacher and the one of mentor and facilitator, in order to encourage pupils to take ownership of their learning by teaching them to plan and to manage their own inquiries, thus making a conceptual shift from learning a subject to becoming an active inquirer.

THE JOURNEY OF THE TEACHER: THE STORY OF SUCCESS

School setting

 The main characteristics of the particular school where the authors carried out the observation can be described in the following way: the status of the school as one of the leading in the country, highly motivated children who undergo a severe selection process while entering the school, technically equipped classrooms with a full support of administration in teachers' development and training. The staff of the school is motivated to reach high results both, on the local and national level. The classrooms of the school are equipped with the latest technologies. According to the ethnic compositions, majority of pupils are Russians. The school puts its high emphasis on developing Russian culture and traditions. The teacher herself is the author of several textbooks for schools. High test scores are reached by strict discipline and orientation toward high academic results.

The inquiry type of learning introduced by the particular teacher reoriented her teaching from its emphasis exclusively on high scores in tests toward developing pupils' inner motivation to be intrinsically present in the process of inquiry in a process of a self-directed learning.

The particular teacher under study was asked a question: how different would the results be if the approach of inquiry were practised in a regular school setting. The teacher responded that her position of work in the advanced school setting with highly motivated pupils influences her work a lot, but, still, her charisma and devotion to create a learning community of intrinsically motivated individuals is a prevailing factor in her story of success. The key factors of success as emerging from the observation protocols and follow up interviews with the teacher were her devotion of integrating research into teaching and a creation of an inclusive and welcoming environment.

One of the key factors of success of integrating inquiry into practice, first, becomes teacher's attitude to its implementation, her competency and courage to integrate research into everyday reality. As the teacher reported, this took her at least a year of experimenting with the working notions of relational knowing, self-directed learning and creative thinking as interrelated with inquiry learning until it become a habitual disposition of her and her pupils' mind.

The teacher's story involves a wide array of emotions/experiences, starting from caution about the expected results, fear of failure in integrating innovative approach toward the acceptance of greater ambiguity, uncertainties, and finally, the excitement with the process. The observed processes and video typed lessons can be described as pupils' active engagement in meaning-making, active presence within the moment, reciprocal relatedness, continual improvisation, openness to diverse experiences and thought patterns, reflexivity, focusing, and embodied knowing. Her style of teaching can be described as innovative pedagogy that fosters a culture of thinking and creativity in the classroom. Her teaching can be described as truly sustainable – based on a discovery rather than reproductive learning, with the engagement of learners in autonomous and critical thinking and self-determination. The other aspect of sustainability agenda in her teaching is interdisciplinarity and transdisciplinarity and the use of a learner-centred approach.

Inclusive research environment: The power dynamics

The classroom setting of the particular case study chosen for the observation during a year-long protocol is a successful example of a culture of inclusion. By listening to the pupils' voices and valuing their suggestions and efforts, the teacher has managed to change her classroom setting from a highly competitive and result-oriented towards the setting that is inclusive and challenging to all pupils. She has maintained a high achievement culture as a part of school's policy and reached the inclusion of all pupils with the means of inquiry learning. The politics of inclusion suggests that institutionally formed boundaries can be restructured by allowing additional forms of knowledge, additional roles and relations, and other participants to enter the centre where the knowledge production is seen as legitimate by those who are in authority (hooks, 1994). As Foucault (1988) is in line with Sotto (1994) who suggests that individuals can gain freedom by broadening their horizons and seeing new possibilities, thus creating spaces for freedom where imaginative learning may occur.

The teachers in focus group interviews commented that majority of them can stay either within 'the achievement raising discourse' or organise their practice as 'an inclusion discourse'. The teacher whose practice we have studied in depth and in detail was chosen because of her innovative practice to manage inclusive environment for all children by supporting the contribution of each individual participant to reach his or her potential. She developed pupils' ownership of their learning, developed their habit to think about themselves and to reflect on what they have learned. She furthered the politics of inclusivity within the fabric of the existing approaches of knowledge production. One can notice how re-focusing of control of teaching changes from being imposed by the teacher to being initiated by participants of the research. When the external control is being removed, the focus of the power emerges from within the learner.

As the teacher commented:

> There is a thin line between giving space for children to exercise freedom to explore and keeping an eye on them, being available when they need. Children grow in their independence in a way they undertake a responsibility about their teaching. This is how a truly autonomous learning takes place.

Inclusion for the teacher means that all children feel confident in the environment, they are willing to try things out and know that their efforts are valued. The case of this study presents a truly inclusive learning environment. This can be well described by one event reflected in the observation protocol: when the lesson was over, the pupils were so immersed in doing the task that they kept working without noticing the end of the lesson. When the teacher reminded about the time to complete the task, the pupils unwillingly stopped their work. The combination of pupils' voice and self-directed activity leads to a genuine participation, inclusion and belonging.

Sustainability perspective on developing thinking skills and creativity enhanced pedagogy

Sustainability perspective should be based on a holistic experience of a leaner: inquiry learning in contrast to rote learning and drilling, exploring and discovering learning rather than learning from the textbooks, active learning in contrast to reception of ready-

made recopies, gaining new insights rather than acquiring knowledge. Embedding sustainability perspective in the school curriculum remains very significant.

The observed teacher's practice can be well described as sustainable by 'boundary pushing, inventing, boundary breaking,' or as 'willingness to take risks in healthy amounts of flexibility, spontaneity and open mindedness' (Ewing & Gibson, 2007; Kellett, 2010). Her approach to teaching provides a balance between structure and norms, flexibility and improvisation. It acknowledges active participation of each learner in the process of inquiry learning, project-based learning and collaboration. Classroom observation protocols and insights gained as a result of interviews point to a number of sustainability related themes as emerging from the current study: inclusivity, contextualisation (sensitivity to diversity contexts), operating with metaphors, creative learning, the confidence and charisma of the teacher, pupils' ability to reflect upon their learning, and an ongoing tension in maintaining the balance between the norm and the creativity.

Particular attention during the observation was paid to studying teacher's efforts in developing pupils' thinking skills, by taking into account both, the affective and a psychomotor aspect of learning. The teacher achieved high learning outcomes by creating classroom conditions where she showed high attentiveness to each pupil's unique capabilities, understandings, motivations, and prior knowledge. She developed pupils' control over their learning, supported scaffolding of their thinking in order to foster more sophisticated higher-order thinking skills. The teacher has reached this goal by exposing pupils to thinking creatively and critically. The teacher has set the environment for deep thinking by teaching the skills and concepts of thinking, structuring interaction with thinking, and by encouraging learners to think on the meta-cognitive level.

The goal of a truly inclusive research environment in the particular case was reached by establishing collaborative relations with the pupils. Collaboration engages pupils in meta-cognitive thinking and provides scaffolding that supports learning when pupils cannot proceed on their own. The freedom of learning was observed in various ways: by encouraging learners to generate ideas in a small scale inquiry, by posing questions, by developing a culture of independent and group-based learning. The aim of the use of various strategies for developing autonomous thinkers can be viewed during the lessons as a disposition of teacher's mind rather than an occasional practice. The teacher was trying to train pupils to engage in creative thinking by presenting them with complex, open-ended problems that may have many different and possible solutions. The teacher presented a new grammar rule not by explaining it but by allowing the pupils to draw their own model of a grammar rule grounded in their own explanation. Pupils have time to incubate their ideas and to arrive at 'a-ha' moments, as well as correct mistakes themselves.

The latest studies (McWilliam & Dawson, 2008) on creativity indicate that no rules, restrictions can be applied in the process of creative work and that the best way for the teacher to assist pupils is just to get out of their way. The teacher used the following strategies for enhancing pupils' creative thinking: creation of analogies, ability to cross domains, exploration of alternatives by risk taking, imagining from various perspectives, questioning traditional assumptions, exploring the issue from the other point of view and synthesising of 'big picture' scenarios. Creativity in the observed classrooms involved active participation of all pupils and offered an opportunity for inquiry based learning.

By giving the task to her pupils to make a possible list of questions posed from the particular perspective, the teacher lead the pupils to see a broader picture, to view the issue from the social, economic, environmental and other perspectives, thus encouraging deeper and more holistic thinking.

The teacher has fostered creative and innovative thinking by integrating small scale research projects into a curriculum. One of the research projects the teacher has initiated for the pupils was to trace the history of development of innovation of pupils' own choice, to calculate the algorithm of changes that have already taken place historically, and predict the further development of the innovation. This required pupils to choose the issue to be investigated, to learn the historical developments of the issue of one's study, as well as to imagine the future development of the chosen subject. The teacher invited the pupils to set the criteria for the evaluation of the presented projects that are to be presented. The criteria included both, the evaluation of the content, as well as the presentation itself: clarity of structure, logic of presentation, originality, practical usage of the innovation, as well as the quality of communication of the message to the audience, and the addressee in focus. The teacher provided adequate time for creative thinking, rewarded creative ideas, thoughts, allowed mistakes, encouraged the pupils to view the question from various perspectives and to generate multiple hypotheses, thus encouraging meta-level thinking.

By exploring the issue, the pupils viewed it from the social, political and economic perspective. The observed process that took place in the classroom differs from the one with predetermined steps and outcomes. It rather can be described as a process where nobody tells one what the project is going to be, when and for how long it is going to occur, what kind of product will be at the end. Pupils' satisfaction with the result determines the outcome.

CONCLUSION

The future prospectus of education is in educating mindful teachers who do not impart knowledge and skills but develop mindfulness in their pupils and create a culture of thinking in the classroom. Inquiry needs to be cultivated and sustained as a part of a dynamic process of teaching.

The development of a culture of thinking should become a disposition of mind of a teacher rather than be implemented as a fragmentary teaching practice. The key terms describing learning should become: ongoing reflectivity, relational knowing and a mindful embodiment. Inquiry involves dealing with a number of tensions, openness to great ambiguity and uncertainties.

The case study of teaching as an act of creativity and inquiry involves teacher's willingness to take risks, to tolerate ambiguity, high motivation to transform teaching and persistence to do so. The reality of school sets a number of pressures, like fixed curriculum requirements based on core skills, assessment and examination pressures, programme requirements, insufficient time for teachers to promote inquiry learning and the fear factor that restricts schools to reorganise and reshape the existing curriculum.

As Davies (2006) suggests, "combined with skills, knowledge, experience, values and enthusiasm," it is possible to build an inclusive educational environment that is constructive for building creative culture of inquiry in schools (p. 56).

REFERENCES:

Cook-Sather, A., & Shultz, J. (2001). Starting where the learner is: Listening to students. In J. Shultz & A. Cook-Sather (Eds.), *In our own minds: Students' perspectives on school* (pp. 1–17). Lanham, MD: Rowman & Littlefield.

Davies, T. (2006). Creative teaching and learning in Europe: Promoting a new paradigm. *The Curriculum Journal, 17*(1), 37–57.

Ewing, R., & Gibson, R. (2007). Creative teaching or teaching creatively? Using creative arts strategies in pre-service teacher education. *Waikato Journal of Education, 13*, 161–79.

Foucault, M. (1988). Truth, power, self: An interview with Michel Foucault. In L. H. Martin, H. Gutman & P. H. Hutton (Eds.), *Technologies of the Self: A seminar with M. Foucault* (pp. 9–15). Amherst: University of Massachusetts Press.

Freire, P. (1990). *Pedagogy of the oppressed*. New York: Continuum.

hooks, b. (1994). *Teaching to transgress: Education as a practice of freedom*. London: Routledge.

Kellett, M. (2010). *Rethinking children and research. Attitudes in contemporary society*. London: Continuuum.

Kirby, P. (2001). Participatory research in schools. *Forum, 43*(2), 74–77.

Levin, B. (1994). Educational reform and the treatment of students in schools. *Journal of Educational Thought, 28*(1), 88–101.

McWilliam, E., & Dawson, S. (2008). Teaching for creativity: Towards sustainable and replicable pedagogical practice. *Higher Education, 56*, 633–643.

Nieto, S. (2000). *Affirming diversity: The sociopolitical context of multicultural education* (3rd ed.). Needham Heights, MA: Longman.

Noddings, N. (2004). Foreword. In A. M. Sidorkin & C. Bingham (Eds.), *No education without relation* (pp. vii–viii). New York: Peter Lang.

Paterson, S. M. (2012). Supporting young children's explanations through inquiry science in pre-school. *Early Childhood Research Quarterly, 23*(3), 398–408.

Rodgers, C. (2006). Attending to student voice: The role of description feedback in learning and teaching. *Curriculum Inquiry, 36*(2), 209–237.

Sotto, E. (1994). *When teaching becomes learning*. London: Cassel.

Veale, A. (2005). Creative methodologies in research with children and young people. In S. Greene & D. Hogan (Eds.), *Researching children's experience: Approaches and methods* (pp. 253–272). London: Sage.

Social science teachers' views on their experience

Andris Kupšāns

Daugavpils University, Latvia

ABSTRACT

Society faces the need to facilitate preparation of skilled professionals for teaching social sciences. The existing conditions that must be taken into account are as follows: (1) unsustainability of social relations and (2) pre-emptive and personally significant understanding of knowledge in the sphere of social relations which is necessary for teaching. Social conditions and the heterogeneous and complex nature of these processes set the demand for teachers of social sciences to develop an ability to achieve a deeper understanding of the situation and elaborate their own professional views and sustainable action approaches. This study draws on a survey of 107 qualified social science teachers administered with an aim to explore the personal professional experience of social sciences teachers by studying the following: (1) teachers' attitude towards the subject they teach; (2) the model of teacher-learner relations in the process of learning; (3) evaluation of teaching and learning and (4) trends of integrating and being integrated in professional action experience. SPSS software is used in data processing.

Key words: social science teacher, pedagogical experience, self-efficacy, instructionism, constructivism

INTRODUCTION

The 1990s and the first decade of the twenty-first century in Latvia were marked by a range of changes and transformations. The new political and economic situation caused general changes in the society on the whole and also in the Latvian system of education. It had to keep up with the recent developments and better prepare new citizens for life. Due to these shifts, Latvian system of education experienced certain reforms or, more precisely, a change of education paradigm. The system of education in Latvia has now entered the system of the European Union which is dominated by stable academic knowledge and skills. As a result of the ongoing changes, the task of education is to help each learner develop their abilities and grow; acquisition of knowledge must take place along with the formation of learner's character, expanding of the world outlook, and taking social responsibility. This agenda is conditioned by the new understanding of the role of education, which has come to be regarded as a tool of change as it prepares a person for living in a knowledge-based, tolerant, multicultural and rapidly changing society (Šmite, 2004).

Contemporary society is often characterised by such the notions as 'knowledge based society' and 'information society'. It is a new model of social organisation which is positioned as the process of sustainable development of humankind. This development is facilitated by growing knowledge management where society develops as a community of highly educated individuals and where knowledge economy facilitates an increase in the standard of living of the entire society and each individual. At prior stages of the development of humankind, knowledge has never taken the leading position; in each phase of social development, other factors have always played the major role (Karnītis, 2004; Koķe, 2004; Гендина, 2004). However, at the beginning of the twenty-first century, information and knowledge became the basis of the development of entire society's work and life. According to Karnītis (2004), the term 'information based society' on the whole reflects the growing knowledge management, systematisation, and promotion in society, supplementing information in this notion with understanding, awareness, experience, qualification, competence, aptitude, skills and wisdom. In fact information based society principles comply with the ideology of the whole political spectrum and its basic principles – freedom, security, human rights, equal opportunities, unity and long-term stability (Karnītis, 2004). This determines new features in the model of education: information aptitude, lifelong learning and shift from teaching to independent learning (Karnītis, 2004).

In the context of these changes, social sciences occupy an essential place in the system of education in Latvia. The task of the subjects of social sciences is first of all to help learners understand themselves and the surrounding processes, and then take an active part in them by making a conscious justified choice and affecting these processes to a greater or lesser extent. Social sciences are that site in the process and content of learning where both teacher and learners gain new experience and information for this is the sphere that studies change and topical issues by referring to the events of the surrounding society (Patrick, 2002; Tūna, 2002).

Among preconditions for the existence of a system of education, the social desire to prepare the future generation for better life and better future is of great significance. The goal of any education at any level is to help people realise why there are constant changes

in living conditions and how to adapt to them and survive in the dynamic world without losing one's identity. Cooperation based on mutual respect and tolerance, and ability to listen to and respect other person's opinion are significant aspects emphasised in this context by social sciences (and a method of learning them).

Hence, the quality of knowledge gained at school in the sphere of public relations acquires new and valuable significance. As opposed to natural sciences, social sciences are necessarily involved in 'subject-object relations' that they investigate (Gidenss, 1999). Moreover they may be called subject-object relations because their content is formed by all that happens in society. The only (yet major) problem in this respect is to find reasonable proportions between knowledge and skills, especially concerning the acquisition of living skills in a democratic society. As the social science subjects take a significant place in school curriculum, their acquisition along with current social processes actualize the necessity for a competent, flexibly minded and creative teacher.

The goal of social sciences is to facilitate learners' readiness for life activity in contemporary society which subsumes the following:

- awareness of the value of health and life, personal and social responsibility for health and healthy environment;
- ethical quest in the formation of a free, responsible personality;
- ability to think economically and participate in the economic life;
- comprehension, analysis and evaluation of socio-political processes in society and participation in them.

To reach this goal, it is necessary to form a system of teachers' competences and their levels that would provide for teachers' further education and interaction among teacher preparation, self-education and further education (Maslo & Tiļļa, 2002).

According to Maslo and Tiļļa (2002), a contemporary teacher is one who not only manages but also personally evaluates teaching methods and materials and finds an individual approach to facilitate each learner's learning a particular subject. The teacher is also personally responsible for the final outcome – preparing learners for independent choosing of alternative ways of learning (Maslo, Tiļļa, 2002). Therefore, competence is rooted in teacher's ability to 'handle' knowledge, skills and attitudes, to use and improve them.

At present, research skills and a critically analytical approach in the further development of teaching methods and education science are vitally important for teachers. All this is oriented at the development and cultivation of professional and socio-cultural competence that facilitates the formation of teacher-personality compliant with the contemporary situation.

However, as life practice shows, teachers are not always ready for their new role. According to Šmite (2004), research proves that teachers are not oriented at lifelong learning and have difficulty accepting changes to conservative education. And yet work in the sphere of education demands incessant building up and extension of basic knowledge, improvement of basic skills, their constant development, and learning, always and everywhere (Šmite, 2004).

There is a growing need in society to promote preparation of highly qualified professionals for teaching social sciences and improve the professional competences of practicing teachers.

The present conditions to be respected are as follows: (1) unsustainability of social relations and (2) need for preemptive and personally significant understanding about knowledge needed at school in the sphere of public relations.

Social circumstances and the heterogeneous and complicated nature of these processes sets for teachers of social sciences the demands to develop an ability to look into the core of the situation and elaborate their professional views and approaches to sustainable action.

METHOD

To get the notion of the existing situation, the beliefs of the teachers of social sciences on their professional contribution and experience, a survey was administered to 107 teachers of social sciences who work in different schools of Latvia. The sample includes teachers with different duration of experience in teaching social sciences. On the basis of these socio-demographic indicators, respondents were divided into several groups.

The aim of the survey was to explore the personal professional experiences of social science teachers by investigating the following: (1) teachers' attitude towards the subject taught; (2) teacher-learner relationship model in the process of learning; (3) evaluation of teaching and learning and (4) trends of integrating and being integrated in the professional work experience.

The survey method was used because it allows for acquiring extended empirical data which, in turn, enable the researcher to characterise large populations, including teachers.

A written questionnaire with 19 questions was created for the purpose of the study. It includes open (or free) questions. During data processing these questions were coded by uniting them in four qualitative groups that define four criteria. Thus, thematic approach was used to arrive at a four-factor structure.

SPSS software was then used for further data processing (Pallant, 2007).

Replies to the survey questions were classified on a five-point Likert scale (Bhattacherjee, 2012). The major criterion in this gradation is teacher's orientation to instructionism or constructivism in the process of teaching social science (Applefield, Huber, & Moallem, 2001; Darling-Hammond, 2010; Улановский, 2009; Жилин, 2011; Пустовойтов, 2011). Higher evaluation is given if an educator is tended towards a model of teaching that encourages communication, suggests alternative solutions within a given standard, organises the pedagogical process by providing an opportunity for learners to construct knowledge of the world, respects equality of all learners while letting them differ and achieve success in their own various ways (Helds, 2006), and if a teacher critically evaluates the quality of his/her work and is ready to change in the shifting world.

To analyse the structure of questionnaire factors, explorative (research) factor analysis was produced. Factor analysis was accomplished according to the following scheme: extracting factors with the method of principal component analysis followed by Varimax-rotation. Varimax is an orthogonal rotation during which variables with a high factor load are minimised. This is a popular method as it eases factor interpretation. Kaiser-Meyer-Olkin measure of sampling adequacy was 0.735 which proves the adequacy of factor analysis application in analysing the structure of the questionnaire.

FINDINGS

Factor analysis confirmed the two-factor structure of the investigated phenomenon. The extracted factors are, correspondingly, Base functionality (F1) and Methodological and communication proficiency (F2). Base functionality entails the (1) relations of acquired theories and practice in teacher's professional competence; (2) professional certitude and (3) attitude to the learner, oneself, one's work and the subject taught. Methodological and communication proficiency entails (1) such teacher's action which transforms the subject matter of learning into a tool of learning in the classroom and (2) teacher's ability and readiness to cooperate with colleagues.

Two-stage cluster analysis produced by means of SPSS made it possible to distinguish 2 uniform clusters (Figure 1 and Figure 2).
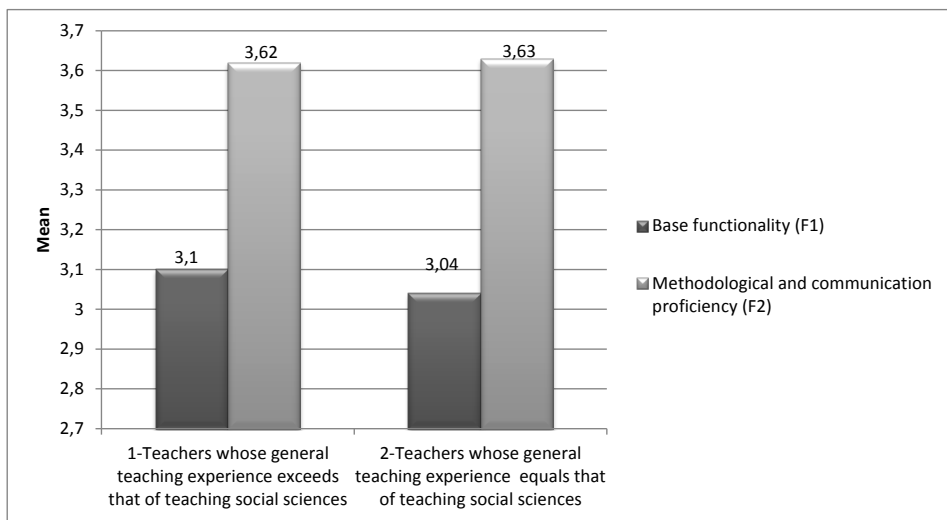

Figure 1. General teaching experience and experience of teaching social science: Base functionality and Methodological and communication proficiency
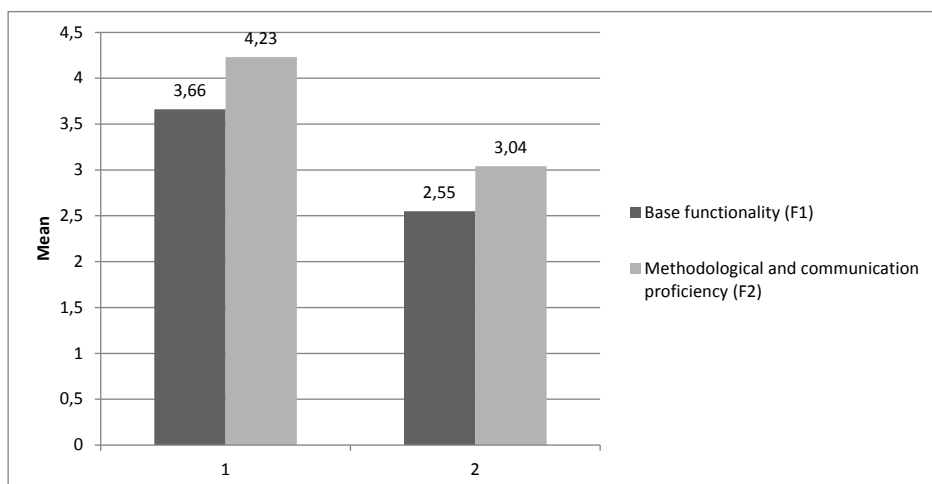

Figure 2. Clusters

367

Variable "CL" (cluster) on the level of statistical trends affects the distribution of the dependent variable "Base functionality" (F1) (mean value of the least value for F1 is observed in *the second cluster, F = 2.245, p = 0.07*).

Variable "Teaching experience" statistically significantly affects the distribution of the variable "Base functionality" (F1) (mean value of the least value for F1 is observed in *the second cluster, F = 18.897, p < 0.001*).

Statistically credible coherence between the independent variables CL and teaching experience is observed (Figure 3 and Figure 4). In the first cluster, "Base functionality" F1 is practically independent of the length of experience, in the second cluster, "Base functionality" F1 is highest for teachers with the experience of 1–5 years, $F = 3.846$, $p = 0.012$.
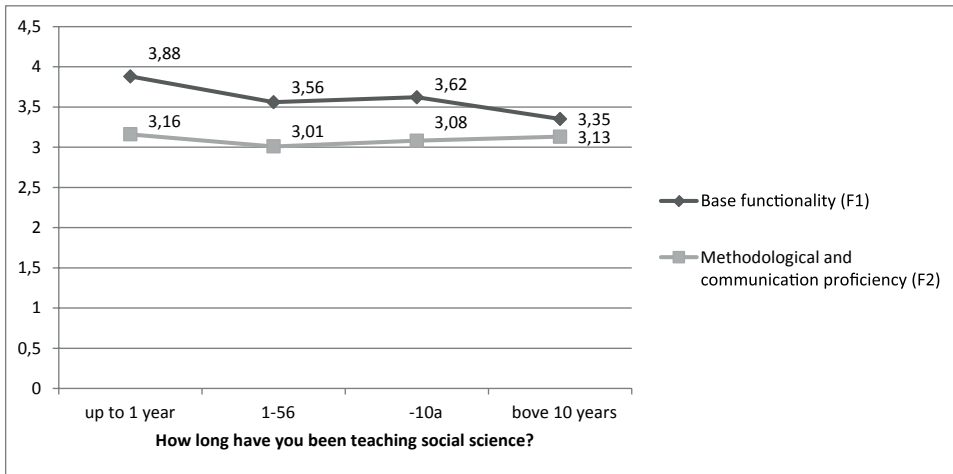

Figure 3. Teaching experience: Base functionality and Methodological and communication proficiency
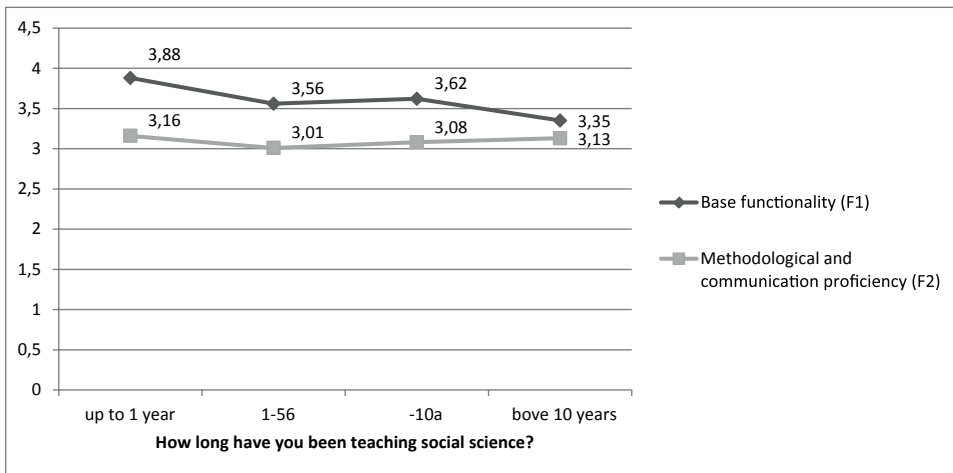

Figure 4. Experience of teaching social sciences: Base functionality and Methodological and communication proficiency

Teachers generally assess social science as a significant and essential subject. We provide some opinions exemplifying this.

> **N30.** *The subject of social science forms the basis of civic society, educates learners to be ready for social action and provides an opportunity to participate in the regulation of one's life.*
>
> **N41.** *The subject of social science is one of the most important subjects of learning nowadays; its main task is creating critically thinking and socially responsible youths.*
>
> **N68.** *This subject enables learners to examine an object from several 'points of view'. It develops ability to think socially. Social science helps learners regard education as a whole, it breaks the notion that the subjects at school exist independently of one another.*
>
> **N105.** *The subject of social science is very important for the development of learners. It is positive that social science was formed as an integrated subject where learners learn to understand various important issues related to society, health, psychology and ethics. The number of classes in social science should be increased, so that learners may have practical classes (with every topic) where they work out projects under the teacher's guidance. It is important because the knowledge and skills acquired in lessons will be creatively applied in practical classes and this is the main skill to develop. Nowadays on labour market there is a need for people who can use their knowledge and skills creatively; therefore, the creative potential of learners must be developed in school.*

It appears that the place and significance of the subject of social science in the overall process of learning is appreciated most of all by teachers with small teaching experience (up to 1 year). These teachers who have just started to teach social sciences are basically enthusiasts of their subject who offer their own vision and provide their point of view, consider that more hours should be given to the subject, emphasise the role of the subject in life skill acquisition and are concerned with the quality of teaching. Teachers whose experience ranges from 1 to 5 years have a positive attitude to the subject, they consider it important and believe that it should be given more hours, but they frequently have no opinion of their own. Teachers with the experience of 6–10 years consider the subject important and the number of lessons sufficient. However, teachers with longer experience more often express a negative rather than positive attitude. They believe that the role of the subject is exaggerated or avoid stating their attitude at all. Apparently, these teachers show more scepticism and negative attitude due to the constant changes in the school routine that they have experienced as a result of political transformations.

In their assessment of the most efficient approach to learning social sciences in basic school – separate subjects of social sciences (and previous teaching standards) or an integrated course of social sciences (new standard) – teachers with the experience up to 1 year most often avoid replying by referring to their small experience of work and claiming 'I don't know'. They do not really understand the point of the question, which is logical, because not all respondents are informed of the time when social sciences were taught as separate subjects. Some respondents from this group are competent enough to provide extended, well justified replies to justify the strong points of their approach. Teachers with the experience from 1 to 5 years express the greatest interest, analyse their approaches most enthusiastically, and enumerate and characterise the strong and weak points of each approach. Teachers with the experience above 6 years show less interest. They sketch out their vision and yet are quite laconic in their formulations. However, as compared to their less experienced colleagues, these teachers take a more active position.

Considering the major problems to be solved to improve the process of learning in social sciences, the above located trend is observed. The least interest in the subject of social sciences is expressed by most experienced teachers (above 10 years). They often express dislike to a certain aspect of the subject without suggesting a productive solution. Teachers with experience up to 10 years have a more positive attitude to the subject. They are interested in improving the process of learning, point out major problems, regard them in a complex way and suggest solutions. It is noteworthy that many among these teachers mention the need for professional development courses. Hence, they are aware that in the contemporary situation when social processes are rapidly developing and intense changes are an organic part of the everyday and professional life, one must constantly improve one's qualification.

Organising the process of learning, teachers with small teaching experience use diverse teaching means, justify the shortcomings of the existing textbooks, try to produce their own teaching materials that are actively used in classes and emphasise the factors affecting the usage of teaching means. This kind of attitude is probably related to the teachers' young age. Young teachers find it easier to use the opportunities provided by modern technologies, they are more flexible in diversifying teaching means. With growing age of teachers, in some cases the range of teaching means and materials grows narrower. However, on the whole all teachers are tended to possibly wider usage of teaching materials and demonstrate self-initiative in designing teaching materials.

Regarding the aspects of teacher-learner cooperation, it must be noted that teachers with smaller experience tend to ignore learners' preferences. Teachers with experience from 6 to 10 years are most likely to accept learners' preferences, while those with more than 10 years of experience tend to ignore them more.

This could mean that young teachers try to conduct the process of learning in the classroom themselves, maybe thus trying to consolidate their authority, and reach good results, while later on cooperation is more emphasised in teacher-learner relations; teachers with experience of more than 10 years, however, tend to assume an instructionist position (Figure 5).
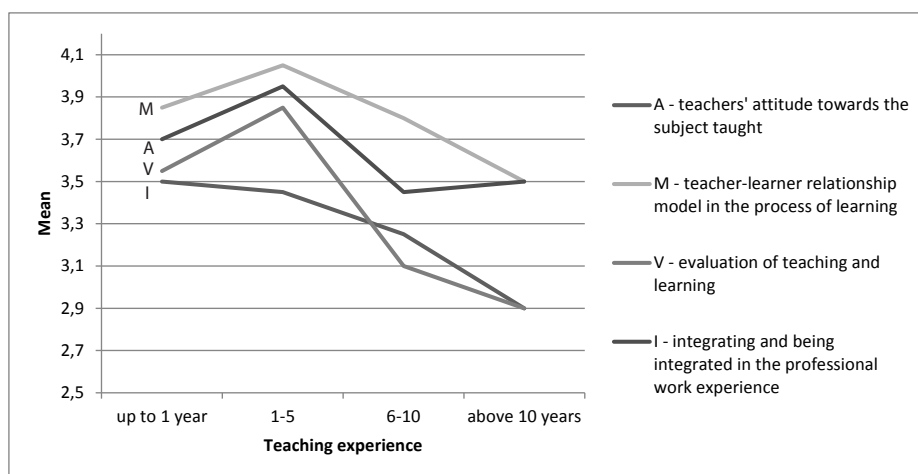

Figure 5. Teaching experience: Criteria

There exists a certain rule that those teachers who have been teaching social sciences throughout their career are more flexible in the use of teaching means. They work out their own materials and use them in classes. They also emphasise the determinants of using teaching means (specific character of the class, topic of the lesson, etc.).

Teachers whose general teaching experience is longer than that of teaching social sciences are more flexible regarding learner evaluation. They apply diverse forms of evaluation, are able to justify the productivity of their application, emphasise the participation of learners in the process of evaluation. For instance,

> N97. *Self-assessment is the most important as only learners themselves know how much work, energy and time they have invested in learning. Working in groups, mutual assessment of group members is efficient. Personal assessment of the teacher cannot be objective as the teacher basically sees the outcome instead of the process which is more important in social science.*

Teachers who had taught other subjects before they started teaching social sciences have a wider vision of the opportunities of integrating social sciences with other subjects (Figure 6). They regard social sciences and other subjects in totality, are able to define the point of and need for inter-subject relatedness, and provide precise characteristics of the bond between a particular subject and social sciences.
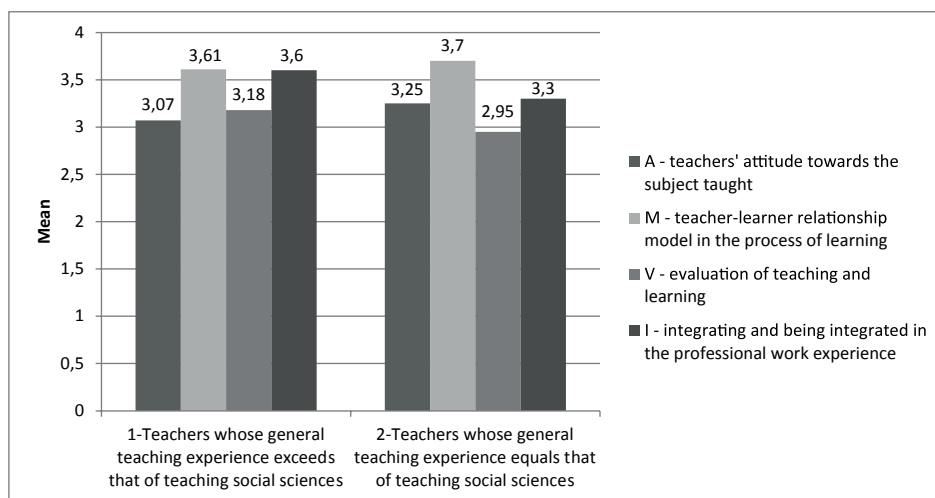
Figure 6. General teaching experience and experience of teaching social sciences: Criteria

CONCLUSION

Social sciences as an academic subject are oriented at the development of learners' life skills. Teachers who help master them needs to expand their personality potential and skill to cooperate with others (learners, colleagues, etc.). One of the opportunities is regular courses of professional competence development. The results of the survey suggest the some salient points for organisers of the courses to consider. Before organising such

courses, the potential audience must be investigated for the research shows that in teacher groups with a different duration of teaching experience (both general and that of teaching social sciences) foregrounding one particular aspect may lead to a failure. A way out could be diversifying the range of the problems discussed or, if possible, drawing up homogeneous groups so that the whole time of the course is spent with maximum efficiency. It could also be possible to form groups that are not homogeneous but consist of teachers with varied experience. In this case, their vision must be similar. Studies must be regular and always topical as time brings the need for adjustments. A problem that was urgent for a teacher at the beginning of his/her career may become marginal due to some new experience and changing world. One should also follow learners' achievement as teachers' vision is subjective and there are more objective indicators, for instance, learners' achievement in Olympiads, final examinations and so on.

ACKNOWLEDGEMENT

REFERENCES:

Applefield, J. M., Huber, R., & Moallem, M. (2001). *Constructivism in theory and practice: Toward a better understanding.* Retrieved January 29, 2012, from http://people.uncw.edu/huberr/constructivism.pdf

Bhattacherjee, A. (2012). *Social science research: Principles, methods, and practices.* Retrieved January 29, 2012, from http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1002&context=oa_textbooks

Darling-Hammond, L. (2010). *Constructing 21st century teacher education.* Retrieved January 29, 2010, from http://chalkboardproject.org/wp-content/uploads/2010/12/Constructing-21st-Century-Tchr-Ed.pdf

Gidenss, E. (1999). *Sabiedrības veidošanās* [Formation of the society]. Rīga: AGB.

Helds, J. (2006). Mācīšanās kā konstruktīvs un sistēmisks jēdziens [Learning as a constructive and systemic notion]. In I. Maslo (Ed.), *No zināšanām uz kompetentu darbību: Mācīšanās antropoloģiskie, ētiskie un sociālkritiskie aspekti* [From knowledge to competent action: Anthropological, ethical, and socio-critical aspects of learning] (pp. 31–35). Rīga: LU Akadēmiskais apgāds.

Karnītis, E. (2004). *Informācijas sabiedrība – Latvijas iespējas un uzdrošināšanās* [Information society – opportunities and challenges of Latvia]. Rīga: Pētergailis.

Koķe, T. (2004). Zināšanu sabiedrība: izpratne un attīstības tendences [Knowledge society: Understanding and development tendencies]. In M. Marnauza (Ed.), *RPIVA Zinātniskie raksti* [RPIVA scientific articles], *4* (pp. 35–40). Rīga: SIA Petrovskis & Ko.

Maslo, I., & Tiļļa, I. (2002). Skolotāju kompetences izpratne teorijas un prakses vienotībā [Teacher competence understanding in the unity of theory and practice]. *Skolotājs* [Teacher], *4*, 8–18.

Pallant, J. (2007). *SPSS survival manual* (3rd ed.). New York: Open University Press.

Patrick, J. J. (2002). Būtiskākie aspekti demokrātijas apguvei skolās [Essential aspects of democracy education in the school]. Paper presented at the international conference *Sociālo zinību loma demokrātiskas sabiedrības veidošanā* [The role of social sciences in development of democratic society], 5 December 2002, Rīga, Latvia. Retrieved January 25, 2012, from http://politika.lv/article/butiskakie-aspekti-demokratijas-apguvei-skolas

Šmite, A. (2004). *Izglītības iestādes vadība: Pedagogs. Organizācija. Pārmaiņas* [Education institution management: Pedagogue. Organization. Changes]. Rīga: RaKa.

Tūna, A. (2002). *SFL projekts "Cilvēks sabiedrībā" – mācīšanās pieredze vairāku gadu garumā* [SFL project "Human in society" – learning experience over several years]. Retrieved August 28, 2008, from http://www.politika.lv

Гендина, Н. (2004). *Концепция информационной культуры личности и международные стандарты информационной грамотности: Гуманитарный подход* [Conception of the information culture of personality and international standards of information literacy]. Retrieved November 17, 2011, from www.evartist.narod.ru/mdo/lit/03/044.doc

Жилин, Д. (2011). Инструктивизм и конструктивизм – диалектически противоположные стратегии обучения [Instructionism and constructivism as dialectally opposed strategies of teaching]. *Педагогика: Научно-теоретический журнал* [Education: Scientific-Theoretical Journal], *5*, 26–36.

Пустовойтов, В. (2011). *Идеи педагогики конструктивизма и тактика личностно ориентированной парадигмы образования* [Ideas of constructivist education and tactics of personality oriented educational paradigm]. Retrieved January 30, 2012, from http://www.emissia.org/offline/2011/1539.htm

Улановский, А. (2009). Конструктивизм, радикальный конструктивизм, социальный конструкционизм: Мир как интерпретация [Constructivism, radical constructivism, social constructivism: World as interpretation]. *Вопросы психологии* [Issues of Psychology], *2*, 35–45.

Earth charter: Values and multicultural approaches

Some basics of education for sustainability from a semiotic point of view

Tuomo Jämsä

University of Eastern Finland, Finland

ABSTRACT

The semiotic approach is not explicit throughout the paper. A great deal of it is an interpretation without a reference to the semiotic theory. In a semiotic sense, all interpretation is that of signs, their meanings and referents. It would have been pointless to explain constantly what the repeating semiotic framework would be like in the proposed interpretation. However, as the title suggests, semiotics is a method of discussion. The aim of the paper is to find out a route to sustainability via education by using the general principles of semiotics and Yuri Lotman's theory of auto communication as guides. It is presumed that the audience is not closely familiar with semiotics. Thus, an introduction to it is necessary. A more detailed presentation would not have been possible. The paper applies the general semiotic method to learning. The starting point is the dangers threatening the life on Earth. The author perceives education as the only way to tackle the risks gradually. Marx sketched a popular model about the life of the humankind with economy as the base and everyday life as the superstructure. Evidently, we need financial sustainability for survival beyond anything else. Sustainable regulation of the economy implies a new holistic view of education. That is the main topic of this paper. The target is called 'sustainable living.' The restructuring of sustainable living will come true in individuals and penetrate through societies. Sustainable education follows a traditional model. The word 'education' usually refers to a process in a child that an adult guides. In this writing, the definition of the word is somewhat different. All experiences have an educational effect. The good, the reasonable approach to life and its perpetuating properties arise, and the humanity, supporting each other, will pick up the baton for the globe.

Key words: semiotics, ecology, sustainability, education for sustainability, sustainable life

A BRIEF SIGHTSEEING ACROSS SEMIOTICS

The double articulation of language means that the human speech realises at two levels: at those of sounds or letters, and meanings. While speaking or writing, the speaker of Finnish can use 21 phonemes – the mental models of sounds and letters. The physical, acoustic or visual stream of expression has a mental counterpart or match – the domain of feelings and understandings usually called meanings. The secret of language hides in the fact that a finite number of units of sounds or letters can create an infinite number of meanings.

A speciality of language is that we can also make meanings without using any sound or letter at all. For instance, the noun phrase 'sauna' in the Finnish sentence 'sauna lämpiää' (the sauna is warming up) contains two coalescent meanings. The word 'sauna' refers in the sentence to a cultural institution and a building as a constituent of it. The verb phrase 'lämpiää' refers to an event connected with the referent of the noun phrase at the moment of speaking. The noun phrase 'sauna' is in the nominative. The case of nominative with the noun phrase has the function to show the topic that the following verb phrase will specify. Semiotically, the sign of the nominative is a zero sign. Linguistics can use the terms 'mark' and 'ending' instead; the nominative is an unmarked case, with no ending. The lack of any sign or mark or ending of the nominative indicates in the sentence that the referent of speech or writing is its topic. The following verb phrase will specify it. Unmarked is in general the most frequent grammatical feature. The verb phrase 'lämpiää' includes two zero signs, those of the present tense and the indicative mood.

The term 'double articulation' dates back to the French linguist André Martinet. Following the model of analysis by his colleague Ferdinand de Saussure, he divides the stream of utterance into two levels: (1) that of morphemes or the smallest meaningful units and (2) that of phonemes out of which the morphemes are built up (Martinet, 1965, p. 21–35.). American linguist Charles F. Hockett sums up the design features in human and animal communication (Hockett, 1960). The types of animal communication do not have anything resembling double articulation, as far as we know; animal signs seem to be conventional signals with a single articulation. In semiotics, the idea of the double articulation or the dual patterning takes centre stage. While taking into account the referents (the objects of inquiry), we might instead talk about triple articulation. Triple articulation is the most widespread type of analysis in current semiotics.

Semiotics has two well-known ancestors: one from Switzerland, another from the USA. The shy professor in general linguistics at Geneva University, Ferdinand de Saussure, realised the two-sided nature of language. In Saussure's grammar, the physical, acoustic or visual signifiers were tied up with their signified counterparts, their mental matches. Saussure also understood that the central principle of language could be applied more comprehensively, in particular to the social life. The word 'mountain', for instance, has a signifier, a physical one because we can hear or see it and write it down, and a signified or a meaning, the mental capacity that can be as such only thought or imagined, or felt. Systemic examination of linguistic meanings is called semantics. If we extend the principle of double articulation outside language, the term used is 'semiotics'.

In a semiotic sense, for example, a woman's dress is a signifier, and the signified, among other things, tells us everything we can think, imagine or feel about it: the dress

itself and the intentions and feelings of the person wearing it. We can place sustainability into the frame of the Saussurean semiotics, too. The word 'sustainability' would be the signifier and everything mentally interlocked with it would be the signified. Together, the signifier and the signified make up the sign. Often, we approach colloquial language and use the word 'sign' for the 'signifier' and the word 'meaning' for the 'signified'.

In 1916, three years after Saussure's death, some of his students published their lecture notes (Saussure, 2012). Structuralism, the methodological mainstream of the 20th century, came into being. Saussure taught a class of general linguistics for the period of just three academic years in the latter half of the first decade of the twentieth century. Each time, he had ten students at most. The Germans call such a discipline 'Orchideenfach'.

Peirce died a year later than Saussure did, but he has laid the foundations for modern semiotics since the 1860s. A wooden trunk filled with Peirce's writings which cover more than 100 000 tightly written sheets of paper was accidentally found in a cellar of the university in the 1950s. It was sold by his widow Judith to her late husband's friend William James, professor of philosophy at Harvard University. Thus far, only about a quarter of the writings have been published. The Indiana and Purdue universities have taken on the job. The writings are published in a chronological order. The latest, eighth, volume from 2009 covers the texts until 1892. The next volume will cover the period from August 1892 until early summer of 1893. In all, the collected writings of Peirce will contain 30 volumes (Annoni, 2011; Peirce, 2012). Perhaps, Peirce is the biggest star in semiotics at present, but, as one can judge from the information above, we know him only in part. The lone man in the attic of his country house 'Arisbe' in Pennsylvania felt always ready to go on with writing, against all odds – he was obviously the only one to believe in what he did.

The next description will roughly sketch how the Peircean semiotic model is applicable in the context of sustainability. Contrary to Saussure, Peirce understood that the semiotic line of thinking was a solution not only to language and the social life but also to all nature, in fact, to everything. If applied to all nature, semiotics must assume that evolution takes shape not only by chance but also by some guiding elements of rationality (Jämsä, 2007). There seem to be different types of sign processes (Kull, 2005). Nevertheless, the same guiding principles of evolution that appear in nature should also come out in life: in plants, animals and humans. The obvious differences are mostly qualitative.

The Peircean semiotic model is triadic. The sign contains, according to Peirce, a sign vehicle, an object and an interpretant. Let us choose the word 'sustainability' as an example. It is the sign vehicle. The object that the word refers to is the concept, and the interpretant primarily embodies the movements of thought between the word and the object. Thoughts and feelings are interpretants. The mental action between the word 'sustainability' and the definition of the matching concept makes up the sign process or semiosis. Everything thought and felt around the concept of sustainability interprets it. In other words, the interpretations are meanings.

Peirce is perhaps the first to illustrate a way of thinking which considers thoughts, attitudes and feelings as signs. He starts the tradition of American pragmatism; Vygotsky is the like pioneer in the Russian educational semiotics – admittedly, only in his final years. The object of sustainability is a creation of the mind, a concept with characteristic features that identify the term. The object in this fundamental sense includes the nucleus of meaning, in other words, the denotative meaning. This is the point of departure. People

are used to thinking there are objects only outside the mind. It is, however, an illusion. We have to understand that the outside objects that we can perceive are secondary ones; in fact, they belong to the context of the primary, mental objects. If they were not secondary, we could not talk about abstract objects at all. For instance, the word 'school' would always refer to a physical property and not to the social institution.

Connotative meanings establish the context of the nucleus of meaning, an extensive personal and social texture. One could call them contextual meanings, as well. Peirce emphasises that the sign processes or semiosis cover everything – not only human and animal acts but also the processes of nature (like formation of galaxies or the capability of quantum gases to fall below the absolute zero).

The main topic of this writing, sustainability is a matter of ecology in the first place. The German biologist Ernst Haeckel (1866/1988, p. 286) coined the term. He defined ecology as the "science of the relations between the organism and the environmental outside world". According to a more recent definition, ecology is a "study of the interrelations between organisms and their environment" (Vogel & Angermann, 1977, p. 199). Winfried Nöth has coined the term 'ecosemiotics' in the title of his article (Nöth, 1998). Nöth departs from the definition of Haeckel, Vogel and Angermann. In his quotes of the term 'Umwelt', like in most of his writings, he puts more weight on the thought of Estonian naturalist Jakob von Uexküll. Uexküll was the first to talk about Umwelt referring to the organism and its environment as an indivisible whole (Uexküll, 1940). Nöth rejects Haeckel's physicalism, his interpretation of the organism and its environment in the concrete, physical world, and focuses on the relationship between the two on a plane of inner interrelation.

Uexküll examined 'Umwelt' from the perspective of a tick; in the first place, he analysed its behaviour – the functions of the agent and the object – as inner events (Jämsä, 2001). A central theme in American pragmatism was the study of the self and the roles of the subject and object. Peirce, James, Dewey and Mead highlight the disparity between the 'I' and the 'me'. A rigorous introduction into their thought would take too far from the pivotal topic. One can distil the problem of the 'I' in the roles of subject and object into the claim that all experiences of the subject, from inside or outside, constitute the object, the 'me'. The subject 'I' shapes and plays the lead when an organism adopts the role of an agent and looks at the self from above. Here, nature is discussed in human terms (cf. Odin, 1996).

In the title of this paper, there are two foci: education for sustainability and the semiotic viewpoint. From the ecological perspective, it means, of course, a concentration on the interplay between humans and their environment. The idea of 'Umwelt' and the 'I – me' survey of American pragmatism defines the guidelines of the discussion. The human agents and the environment, like the 'Umwelt', have both a physical and mental character, and the heart is on the mental role, naturally. The views submitted are in key with deep ecology.

According to Norwegian philosopher Arne Naess (1995), there are two kinds of ecology, the shallow and the deep one. While the shallow approach believes that technology will purify the polluted air and water, the deep approach evaluates pollution from a point of view of the biosphere and considers not only the humankind but also all life and all species as a whole. The shallow approach emphasises the resources for humans while the deep ecology thinks of the resources and habitats for all life forms for their own sake.

The shallow vision pays attention to the human overpopulation and sees it as a problem of developing countries. It assumes that destruction of wild habitats is accepted as an inevitable evil because of the possibilities of living for humans. Deep ecology highlights that the excessive pressures on planetary life stem from an explosion in human population, so the amount of people has to be controlled. The shallow paradigm sees the solution to the poverty of developing countries in the Western model of industry; deep ecology favours cultural diversity and appropriate technologies that are based on the specific character of different cultures. Nature is fragmented in today's world into properties. If we were able to come back to the original deep ecology, we would understand and nurture ecosystems as wholes. In education, the shallow approach stresses the 'hard' sciences that are maintaining the natural magnificence of society. The deep approach emphasises the 'soft' sciences, which stress the importance of local and global cultures (Naess, 1995).

The foregoing part of the article discussed the methodological filter of the article and gave a mainly historical perspective on semiotics. In the next, I will try to fulfil the demands of the title. Evidently, much will have to be ignored. Semiotics is situated in the neighbourhood of philosophy. It shows in the discourse. The text represents an interpretation, in an all-encompassing and semiotic sense. The basics of education for sustainability are those to promote understanding about the global importance of the topic. However, the focus will be on the educational means and the underlying theoretical assumptions. From a semiotic perspective, two topics will be examined closely: the communicative model of Lotman and, in the concluding remarks, a rough semiotic outline of the interplay between the outer and inner moods of being.

THE LAST AGE

If someone were saying we are now living the last age, or even the last hour or minute, he would probably exaggerate. True, there are many people carrying such apocalyptic feelings. Nonetheless, some signs seem to indicate how the business world takes the exhaustion of the Earth to some extent into account. A tourist recently visiting London noticed one subtle gesture: the shopkeepers effectively evaluate sustainability in marketing, more effectively than their colleagues do, say, in Helsinki. Perhaps it is only a trick for raising the status of the store and getting more products sold. Nobody can be sure about the hour. Arne Naess (1995) answered the question in an imagined conversation. He said that after the dark and sad 21st century comes the next one that will be flooded with light.

People accept development in general. The ideology of sustainability is critical for those features of development that threaten lives, the ecological balance, and the survival of Earth. No doubt, human lives and the future of Earth are in danger. The climate change most likely advances unavoidably to the point when return is no longer possible. Air travel is the world's fastest growing source of greenhouse gases. Annually, aviation generates nearly as much CO_2 as all human activities in Africa (cf. Friends of the Earth, 2012). The assumed rates of accretion are robust. The yearly increase in aviation in the Asia/Pacific region is about five per cent. According to the calculations of Airbus, aviation will double during the next 15 years (verbal information). The increase in air transport is a key ratio showing the dominant trends in almost all branches. It is easy to understand

what the seven billion inhabitants of Earth will consume and what the westernisation of the developing superpowers of China, India, Brazil and South Africa will demand.

Current global economic statistics are not encouraging. A conspicuous gap exists between talks and deeds. The train is speeding up in spite of the threat of an eco catastrophe. Rachel Carson published her book "The Silent Spring" in 1962. The Club of Rome has been reminding of the perils of the current lifestyle since 1968. Development has been ubiquitous and unsustainable.

"All life is education and everybody is a teacher and everybody is forever a pupil" (Gudehus, 2012). This well-known quote, which approaches the educational thought of John Dewey, stems from the American psychologist Abraham Maslow. Johan Vilhelm Snellman, Finnish philosopher and a Hegelian, is not far away: "The man is what he makes of himself" (Snellman, 1861/2004, p. 216). In the spirit of the etymological meaning of the word 'education', he defines education as "developing the human inborn nature" (Snellman, 1861/2004, p. 218, 275; see Jämsä, 2006). "Education does not end along with the school or a certain qualification, but all life is the school where the individual changes into a human being," Snellman claims (as cited in Salomaa, 1944, p. 528–589). Plato used the word 'pleonexia' for greed. Snellman also denounced greed and highlighted the significance of the quest for educational values (Salmela, 2012). People are grabbing at belongings, and the wise are advising them to go another path. The deep gulf has always prevailed. Today the gulf is more dangerous than ever.

The drumbeat of the quality media, the conservationists and the intelligentsia about the perilous risks of the overflowing consumerism seems to have been in vain, almost like the talking against smoking. There are several reasons for the inefficiency of the warnings about the dangers of high life. The words of warning, used too often, fade and lose their power. We have blind faith in money. It arises from the withered spiritual values, certain superficiality of culture and the rise of leisure time that draws crowds into a slight style of living with an emphasis on entertainment. For the most of us, money equals freedom. Freedom defines the boundaries of life. Unfortunately, people with enough money do not know what freedom at its best can provide for them. Therefore, in the middle of wealth so many of us are desperate. We obviously do not know how to live. Humans seem to need to face misfortune in order to grow. Trials teach humility.

Money is needed to sustain living in keeping. The movement of sustainability has never questioned the importance of economy. The worship of fortune is, though, a different thing. Pleonexia is the precise matter against which the people supporting the idea of sustainability are fighting. Pleonexia is one of the worst of the human dependencies and threatens to destroy all life. Originally, people used, for instance, coins of copper or precious metal like silver as their money. At the age of fur trade, Finns had squirrel skins, in German 'Mark' and in Finnish 'markka', as their currency unit. Copper, precious metals and squirrel skins had their fluctuating prices, of course, but they were tangible things and people somehow got the relationship between the medium of exchange and the product they were going to sell or buy. Sweden was the first state of Europe to change over into bank notes in 1661. The present financial market with its stocks, bonds and the like has contributed to the huge expansion of venture capitalism and to the fact that it is more than difficult to understand the importance connection between the money or its equivalents and things.

In the last resort, the written or printed documents representing money have only an abstract value based on shared beliefs. Therefore, various speculations govern the financial market. I know one person in London who designs stocks called derivatives. In his mind, the real value of the nominal one in the fiscal market is about a tenth, at most. It is only an impression of his, naturally. In fact, there is no objective measure of the fiscal value of things and their prices. What it comes down to is the nature of value judgements and their propinquity to feelings. The essence of value judgements illustrates, for instance, the auction of one of the four originals of the "Scream" by Edvard Munch for about 120 million dollars. No one can determine the objective value of the pastel, of course. The floating difference between the real and nominal values and the speculation results in the alternation of the notorious flow and ebb of the high tide. The people suffering from the damage are rarely those who run the market at the top of it.

As stated above, the human compulsion to pleonexia is the archenemy of the movement of sustainability. As long as the conduct of nations aims at the development of national income in an unsustainable way, the dominant harmful bias against ecological ideals continues. Economies cannot grow on and on; the potential growth must take place on the conditions of the resources of nature; as human beings, we are equal and have, in principle, the same rights to the global income; we have moral obligations to the poor regardless of the countries they live in. The worry about the uncontrolled economic growth and the persistence of the immense environmental problems has aroused the movement of sustainability. Little has changed in the history of the sustainability movement; the problems of its launch are still relevant. The value of the economy as the most influential outcome of the society has not declined. However, at the same time, the theme of sustainability has significantly escalated.

The relationship of company owners to competitors and in particular to consumers are grounded in moral choices. Ethical violations arise in overfishing, clear-cuttings, the hunting of the endangered species, for instance. The grey territory of law is in meticulous use. The people in the black zone, the criminals, execute corresponding actions as their businesses. Many if not all people perform a double role on the stage of life. It seems as if we troubled ourselves too much with the pursuit of maintaining the façade. The basic questions of right and wrong are often passed by in school. For instance, analysis of literature would provide an easy platform for the treatment of these issues. During the lessons of different subjects, there should always be room for more or less comprehensive deepening conversations. Humanity in a moral sense is one of the highest goals of education.

EDUCATION HAS A LEADING ROLE

The education for a sustainable development and culture is far from being entirely believable as long as the dominance of the economy on the current conditions goes on in the world. A direct attack may not be the best tactics for sustainability. There are roundabout roads. One of them, which perhaps seems to be a bit striking, departs from the social model of Karl Marx. The Marxian diagram about the society has seldom been a tool for an educational discussion, but now a change has taken place. The British education sci-

entists have shown the way. The Marxian image of the society has been under scrutiny. The Education Forum which was founded in 2000 and its five years younger international partner have been in charge of the layout (George, 2011; Forum, 2012). Super celebrities like Chomsky have made keynote talks at the gatherings of the Forum.

As long as we do not contradict the position of the economy in its present sense as the principal point of human life, there is little hope of getting the sustainable values to become effective. Instead of economy, 'sustainable living' constitutes the base in this paper. The idea of 'sustainable living' implies that every human being will live in such a way which fulfils as thoroughly as possible the opportunities for the personal living available to one. As the term 'sustainable development' suggests, the people who feel responsible for sustainability, require the economic growth to continue only on condition that it does not harm nature. Man and Earth shall live in harmony. Supervising that an optimum occurs between the resources of nature and their use is on the agenda of the sustainability movement. It pays to follow the 'aurea mediocritas', the golden mean, in making moral choices. According to Aristotle, the golden mean is the desirable middle between the two extremes: the excess and the lack. Of course, this approach is not relevant only in regards to the use of money. It engages the moral life in its entirety.

In a sense, the pattern of sustainable living, as well, has its origins in Aristotle. The concept of 'education' initially means that something genuine and social – essential to humanity, hidden in the disciple – will emerge. This etymological line moves on with one basic tenet of the Aristotelian metaphysics: that of the potential and the actual (Jämsä, 2006). While a human being grows, the potential, which is worth coming out, becomes actual, little by little. Often, in shorter or longer spaces of time, the actual has a shadowed, unexpected and inexplicable character. In Kantian philosophy, the ego is transcendent. We know the depths of the souls of the pupils and teachers far too well. The recesses of mind are like an unknown country. This sentence is but a reminder of the dilemma of how to rule the human soul. The ideal of sustainability is relatively easy to formulate. To define the mind and make it flourish is an entirely different thing.

The base of sustainable living is in the interplay with the superstructure. Many members of The British and International Education Forums seem to think education has an outstanding monitoring role outside the base, in particular if it means guiding one's own life. In this paper, the word 'education' has a similar sense to the one advocated by thinkers such as Maslow, Dewey and Snellman: everything that happens or is out there or within, is a learning experience. Ultimately, all learning is self-education. The disciples of a sustainable living should learn to prefer anything based on how it supports the Earth and everything that belongs to it, materially and spiritually. Peirce (1893; see also Anderson, 1995) uses the Greek word 'agape' (hence 'agapism'~'agapasm') for the selfless, divine love of the soul that comes out in evolution, and for a similar love that appears in the parental relationship to the offspring. The idea of agape may seem to be much too far removed from the everyday reality, but undoubtedly, humans have a certain potentiality even for such love. Positive values are necessary to fill the void with values closely attached to the present wellbeing. Education teaches people to make choices and to experience life, if possible, in a positive emotional tone. Its core is normative.

The institutional education in schools should expand its concept of education. In an educational society based on sustainability, all kinds of schools should consider how the

individuals acquire knowledge, skills and wisdom. So far, pedagogy has largely ignored the importance of feelings. The idea of sustainability is largely a matter of knowledge, but from the perspective of practice, it is essential to embed the sustainable values in feelings and attitudes, too. Attitudes are models of response to various matters deduced from feelings. One can say they are 'fossilised' feelings. The word 'fossilised' alludes in this context to a significant event and to the impact that arises from it.

I know an old farmer who lives in a village in northern Finland. The village lies by the sea, the Bay of Bothnia. The villagers' livelihood largely depends on fishing. When the old man was a small child, he and his family ate fish soup almost daily. He learnt to disgust the soup; his mother, of course, thought her son was in need of nourishment and forced him to eat, often feeding him with a spoon. The village had a female deacon who was in charge of health care besides religious obligations. She happened to be at the boy's home at mealtime, saw how the boy could not eat up the fish soup, thought it was a violation of the holy food and decided to teach him a lesson. She fed the boy by force. The boy's dread of the fish soup worsened. After that, he never agreed to eat anything with a spoon similar to the one used by the deacon. He began to call that part of the cutlery 'the nurse's spoons'. In figurative English, the expression 'to spoon-feed someone' refers to treating someone with too much attention or advice or teaching someone with methods that are too easy and do not encourage the learner to think independently.

This is an example for how negative feelings may associate with an event and fossilise into attitudes towards the settings and people of that event. The old man said he once had an irrational fear of nurses. They did not disturb him anymore. However, the distaste for fish dishes like that childhood soup had become a mental allergy, which he had not been able to overcome entirely.

The prejudices people have, for instance, towards immigrants with a different appearance may have a similar origin. The same holds good also in other contexts and in the questions of sustainability as well. A simple experience, similar to that described above, may predetermine the steps towards those whose mindsets differ from the majority. Pedagogues should consider that the feelings and attitudes intermingle with each other and guide the students' attention often more than the contents of the subjects to be learnt. The nucleus of theoretical lessons is mostly composed of hard data. The teaching advances according to the textbook page by page. The goal is curricular. The speed used in the lessons, often leading to superficiality, is in harmony with that. Unsurprisingly, there may be altogether too little pedagogic joy, and the teacher forgets whom he or she is talking to: a human being as a highly developed creature with one's thoughts, attitudes and feelings. The teacher perhaps does not always remember that he or she should observe the student as an integrated whole.

Textbooks are a good aid. However, they should not have such a vital role as they now have, for instance, in Finland. The classroom as a group with students and teachers could plan together what they will do and how they will work in other ways than by only using the textbooks. Themes and projects might be at the centre instead. Each student would have a duty of in the project, and the teacher would participate in designing individual and group tasks. Discussion should have a preference. While discussing different topics based on the accomplished tasks, the class will be getting experiences, and a certain holistic view of the problems concerned will emerge.

Literature is a shortcut to real life. The ethical treatment of novels, short stories, poems, and plays is known as moral criticism. Teaching attitudes, for instance, tolerance, demands the attention of students as people who both know and experience the world. This is paramount when the pedagogues support the students' readiness to come across great emotionally loaded issues. Sustainability might belong to the hottest topics, in particular if cut into those sad facts that seem to permeate the relationships between humans and nature, and the probable results in case the present way of life continues. A teacher of sustainability must not be provocative. Telling the truth is enough to make a positive atmosphere in the classroom, and the vision of the students brings about a relevant emotional charge and a proper attitude.

TRANSLATION AND AUTO COMMUNICATION

In the focus of learning, there is always the individual, regardless of the pedagogic surroundings. The English word 'school' means an assemblage of fish, too. Swarm behaviour is one of the main themes of research in ethology, the field of biology investigating animal psychology. The word 'school' referring to fish might have something in common with the school as a pedagogic institution. At the worst, schools have forced their pupils into conformity, the mould. In military service, the routines that date back to the war strategies in the era of the Roman Empire are still in use and parallel, no doubt, the school in its ethological sense. The semiotic-based pedagogy denies all kinds of unthinking conformity and the rote learning though it aims at that all humans clearly realise the necessity of the demands of sustainable development and, in their minds, are free to make their lives worth living.

In a semiotic sense, education is interpretation. According to Peirce, there are three kinds of signs: symbols, icons and indices (see Hoopes, 1991). Indices stand for things that exist in the physical and mental reality. One is watching out of the window. One sees the sky and air to judge how to prepare. Then, he interprets the signs of the sky and air into another sign (or text): the suitable way to clothe oneself. The judging, which results in choosing the right clothing, is a further sign, tightly connected with the former one and illustrates the endless circle of sign processes or semiosis. Icons are signs that resemble the pure things behind them. One sees a cat lying on the floor, and the sun is shining on both. Drawing a picture of sight is interpreting it into another sign. If one says, "The cat lies on the floor," it is a use of symbols, an interpretation of experience into a sentence, a verbal sign or, rather, a sign network. Symbols are primarily items of the mind, but the sentence, as one pronounces or writes it, appears as a physical sign, an index. Most experts of semiotics consider written or spoken expressions as symbols because they primarily determine what the expressions refer to. In a broad sense, the interpretations described might be translations, as well.

 Peirce thought he was a logician in the first place (Zeman, 1997). Drawing inferences is interpretation and, at the same time, translation. Peirce distinguished three types of making inferences: the abductive, inductive and deductive ones. Most people are familiar with induction and deduction, but abduction is for most something new. Peirce did not define his concept of abduction strictly. Perhaps it is enough to understand it as a method of thought which identifies a heretofore unknown object. An example illustrates the point. The audience hears a strange academic expression in a colleague's paper. The context of the word gives hints at how to interpret the expression and thus find out its meaning. The

process may continue long. The members of the audience get additional clues to deduce. All these steps are transitional stages in a journey to an accurate knowledge about the term. Peirce wrote, "abduction is the process of forming explanatory hypotheses" (CP 5.172; see also Paavola, 2006).

Three is the basic number for Peirce. Signs are composed of three items: representamens, objects and interpretants. The following description is a bit simplistic. The action of the mind proceeds in three steps: from feelings to perceptions and wills and finally to laws and concepts. In Peirce, feelings and wills represent the logical basis of Firstness, perceptions the one of Secondness and concepts the one of Thirdness. Concepts and conclusions like sentences and texts composed of concepts are symbols. The term 'law' seems to cover the conclusions and claims derived from other signs. "Omne symbolum de symbol" [A symbol follows from another symbol]. Concepts are of the highest logical rank, the Thirdness. Indeed, they grow out of other symbols, icons and indices. All types of signs exist in the mind. Peirce (2012 and CP 1.2.) developed his doctrine of signs throughout his career. Translation is a change of an item in the mind into another item. The event concerned is called intersemiosis (cf. Torop, 2005). The definition is strong enough to refer to learning as well. When a child hears a new word, she registers the context of its usage, and a paraphrase, a description of meaning may arise in her mind. According to Vygotsky (1986), for instance, the language of thought is not quite the same as that of speech – perhaps it is quite far from it – but there is, however, a typically semiotic link between a sign vehicle and an interpretant. In repeated contexts, the interpretation of the unknown expression extends and sharpens. Every word and the grammatical models of the sentence structures connected with it form a layered whole in the child's mind. Some paraphrases may vanish because they have proven to be worthless while others, perhaps the paraphrases that are parsed furthest, survive and are appropriate for retranslation.

The semiotic interpretation has two main consequences from the viewpoint of pedagogy. First, teachers have to think about their topics as structures composed of the sets of concepts and the relations between them. Students might write down at the beginning of the lesson or the period, for instance, that of sustainability, as follows: how they determine the theme (the concept); what they think is missing to their understanding of sustainability; what they would like to enquire about the problems around it; what is the most appealing to them in the matter. When the class or the stage is being finished, they meet the same questions. In addition to writing, the topics should also be addressed in talks. The written answers ensure that the instructor can properly escort all students.

From the perspective of educational science, there is still a deep gap. Presumably, no one has done a longitudinal study of how the definitions of concepts connected with certain words evolve over the years. Such a study would provide a more stable base, compared to that of today's instruction, for the pedagogical application of concepts.

The Estonian semiotician Yuri Lotman holds the conceptual issue to be primarily translated. "The elementary act of thinking is translation," he writes (2000, pp. 143–144; see also Torop, 2005 and consider the analysis of Peirce and translation ~ learning in the foregoing). Peirce goes even further as he presumes that the mechanism of translation is dialogue. He writes, "All thinking is dialogic in form. Your self of one instant appeals to your deeper self for his assent" (CP 6.338). The Russian tradition since Vygotsky, Voloshinov and Bakhtin in the 1920s pinpoints the significance of dialogue. In the first place, they had understood the acquisition of language as mother-child interaction, as a

social process, which gradually expands in the mind. The social, dialogical roots of the mind remain hidden; their early development takes place mainly in the first years of childhood, outside the active memory. In general, the 'I' is totally unknown to the child, perhaps in consequence of the darkness of memory during the first years until (s)he feels to be an 'I' thanks to the structuring of the mind (Bakhtin, 1992; Irvine, 2012).

Mental acts are, in fact, largely conversations or arguments. In addition to thinking, the character of dialogue prevails in other mental acts like feeling, dreaming, having an attitude towards someone or something and even in the physical acts as far as they involve the monitoring thereof. Lotman (2000) writes, "…the need for dialogue, the dialogic situation, precedes both real dialogue and even the existence of a language in which to conduct it" (p. 33). As mentioned several times before, semiotics calls the ongoing process in and between signs semiosis. The inner life, the use of the languages of thoughts, feelings, and attitudes is of a social nature and may be called intersemiosis, too. While I was writing this paper, I have often felt I had beside several wanderers from my personal past, mostly whispering protests in my ear but passing, now and then, some fragile words of sympathy, too.

The 'I' is not one. Peirce criticised the common misconception that we would be alone while thinking, writing or doing anything in the way shown in the above quote. The mind seems to be a theatre. After Peirce, other influential people of American pragmatism – for instance, William James, John Dewey and George Herbert Mead – have emphasised the various roles of the 'I' and the 'me' and the vital status of dialogue. A similar trend appears in the Russian tradition, as mentioned above. Bakhtin, in particular, would have been worth a wider introduction. He is a highly innovative thinker, but the discussion about him, broad enough for the originality of his thought, would have demanded a too comprehensive space and partly led the treatment out of the way. The social character of the self implies that the path in education for sustainability, true, leads to the individual but at the same time for everybody. It makes us believe that even the teachers of the sustainable culture who get their success poor at present may yet eventually succeed.

The typical models of communication comprise an addresser, a channel, a message and an addressee. Lotman's model of auto communication differs from those in that the addresser and the addressee are the same person. The Lotman's hypothesis of communication is called an 'I – I' model (Andrews, 2003, p. 63), but, obviously, it proceeds with the 'I – me' line of pragmatism. Fundamentally, however, it is original. It tells how someone finds out something and how the message decisively changes when it becomes a lived experience.

The next is a real example of auto communication. One morning, I was reading in the newspaper that a Finnish married couple was murdered abroad. The news transmission highlights striking events; the media are obsessed with distressing news. That is why I hardly took notice of what I had been reading. Later on, I learnt that, in fact, I had met with the couple. The experience of the event radically changed: the empathic personal feelings around it preoccupied me. For quite a while, I could not get over the shock.

Lotman introduces the synopsis of auto communication in his book "Universe of the Mind" (2000). In the next, I roughly sketch what Lotman's philosophy of communication encompasses, applying it to the personal experience I have recounted before. At the first point, while I was reading in the newspaper about the violence, the message was not

clearly coming up out of the stream of consciousness. It represents the message and code 1. It receives and interprets the experiences in a usual way. Most events told about and learnt in the media fade away almost immediately. In auto communication, however, the displacement of context occurs. There is a steep symbolic boundary line, like a place of still waters in a river. After such a place, the stream usually comes to a rapid. As the message is ending up in the symbolic river, the message suddenly revives. In the above example, the resurrection took place because of the information I received from the friends of mine: I recognised the married couple from the news. The displacement of context implies that the message 1 and the code 1 change in the message and code 2. The message, the story I read in the morning is not the same anymore after the displacement. The change of rules stems from the sudden turmoil of the emotional flow that I had equated with the event. The news of the paper starts to go round in circles in my mind.

The experience associates with the phenomenon called the 'broken record'. The term dates back to the era of the acetate LP records. A scratch on a phonograph record caused the needle or stylus to stay in the same groove and to play it repeatedly. The occurrence of repetition engages the mind particularly in the private emotional experiences, typically due to success and insults and, especially, to grief after big personal losses and the like. The English word 'haunting' describes a matter that continually recurs to mind.

The Lotman's model of auto communication involves a hypothetical description of the conceptual translation, too (cf. Torop, 2010). As such, it is a viable aid in the pedagogical practice. The core of a blueprint for lessons is composed of the parsed structures of the concepts central in the contents of each lesson. Of course, it does not mean that teachers should try to awaken strong personal experiences in their students. The students need, however, lived experiences to learn something beyond the routine (see Stables, 2005). A displacement of context is not too far a target while designing a learning module of the sustainable culture. Pedagogical projects may expect a fair success with such a fascinating theme as sustainability. The teachers of sustainability need a comprehensive, even international cooperation.

The theory of auto communication is just a start. It opens the door for a scrutiny of how the concepts relate to each other and how their structures vary in the course of life.

SEMIOTICS AND EDUCATION – CONCLUDING REMARKS

Practically, what we call education is schooling. The aim of schooling is to provide learners with knowhow: knowledge in various appreciated and indispensable fields of society and exploration and skills to apply this knowledge in practice.

Greek slaves, the most original pedagogues in the etymological sense of the word, took their protégés from and to school. Learning what it involves being sustainable means a return to the thoroughfares from home to school, not only for the kids, but also for everybody at all ages. In philosophy, ethics scrutinises the choices of values. There are three partially overlapping main directions in ethics: consequentialism, deontological ethics and virtue ethics (see, for instance, Blackburn, 1996). If one thinks the value of an action derives from the values of its consequences, one follows consequentialism. If someone emphasises what one's duty or right is, one conforms to the direction of deontological

ethics. If one decides to follow the way that gives one happiness and goodness, one comes to believe in virtue ethics. In practice, all three thoroughfares lead to sustainability.

The point is that people must think and act in a manner that supports the inner world, the microcosm, and the outer world, the macrocosm. In the commerce between both, the key is in the microcosm, the person who interprets both his or her inmost and outmost and everything between and prefers acting in a sustainable way. Being in the world is largely a consequence of private education in the deepest and broadest sense of the word. True, the expressions 'private' and 'social' are different sides of the same coin. One's activities may build on the duty one has adopted in the course of living from sources essentially educational. Naturally, there is a reverse direction from duty to goodness. It is exactly the way of living the deontological ethics highlights.

All experiences include mental objects, but not necessarily physical ones. Mental acts may refer outside or inside the mind or both. The physical and/or mental activities such as writing and daydreaming or cutting firewood refer from the mind to the outside objects or the reverse. Experiences roughly divide into two: single episodes with feelings and emotions tying the episodes together, and more or less permanent emotional influences from outside and/or inside. The division is, of course, only suggestive, and the sections are overlapping. The episodes are chains of experiences that link to a single event in mind, for instance, the first school day. The event stands out from the stream of usual mental happenings. It has such a strong emotional charge that many people remember the day as a significant whole or its partial episodes until the last days of their lives. The emotional charge makes the whole and parts memorable. The emotional participation in any action whatsoever gives it exceptional importance.

The mind is the midpoint of the individual universe. The inside and exterior are usually inseparable. The semiotic analysis can be performed bi-directionally, from sign to meaning and vice versa. Let us examine a trivial example. Someone wants to prepare oneself properly, and to do that, one goes out-of-doors or looks out of the window. The cloud in a fair or ugly weather or air and coldness or warmth constitutes a serious sign for the purpose. The cloud watched can refer to a huge amount of things. The meteorologists define it a cumulus. The definition of a cumulus contains one set of its meanings. Perhaps more noteworthy is that they use the cloud types, also the cumulus, to do their work, the weather forecast. The intuitive interpretation of ordinary people is usually different. Watching the cloud in sunshine provokes a good mood. The outer preoccupies the inner, and distinguishing the boundary between the two is a difficult task. Semiosis goes around in circles. A part of the meaning or the full range of meanings can be a new starting point of analysis. Anyhow, someone examining the weather, air and temperature to properly prepare oneself probably comes to a conclusion.

The key to the semiotic interpretation of life is in the analysis of experiences. Eventually, everything takes place in the mind. The significance of feelings has remained in the background of semiotics, thus far. Mental acts divide into two: on the one hand, into the relationship between the mind and a physical episode in which the body and the senses take the lead, and, on the other hand, in the relationship between mind and feelings. Emotional semiosis takes place in the interplay between the mind, which guides some physical act (like writing or firewood logging) or any other action, and the emotional undertone attached to it. Such is the map of living. It is a crucial concern while discussing sustainable living, in particular, teaching and learning it from a semiotic point of view.

This article is only a preliminary introduction to semiotics from the perspective of teaching and learning. Semiotics is a consistent procedure for the analysis of mental acts. The task is extremely demanding, but, no doubt, prerequisites of success exist. Thus far, semiotics is used much too little to marshal and describe the typical paths of the mind. Knowledge of them could help teaching and learning decisively and enhance the education of such extensive projects as that of sustainable development.

REFERENCES:

Anderson, D. R. (1995). Peirce's agape and the generality of concern. *International Journal for Philosophy of Religion, 37*(2), 103–112.

Andrews, E. (2003). *Conversations with Lotman. Semiotics in language, literature & cognition.* Toronto: Toronto University Incorporated.

Annoni, M. (2011). World report: The Peirce edition project. *SemiotiX*, XN-5. Retrieved August 17, 2012, from http://semiotics-in-place-a-report-on- the-peirce-edition-project/

Bakhtin, M. M. (1992). *The dialogic imagination: Four essays.* Austin: University of Texas Press.

Blackburn, S. (1996). *Oxford dictionary of philosophy*. Oxford and New York: Oxford University Press.

Forum. (2012). *Welcome to the education forum*. Retrieved February 10, 2012, from http:// www.educationforum. ipbhost.com

Friends of the Earth. (2012). *Aviation and global climate change*. Retrieved September 20, 2012, from www.foe.co.uk/resource/reports/climate_change.pdf

de George, R. T. (2011). Marx, liberty and democracy. In J. O. Burke, L. Crocker & L. H. Legters (Eds.), *Marxism and the good society* (pp. 7–31). Cambridge: Cambridge University Press.

Gudehus, R. (2012). *Quotations*. Retrieved September 10, 2012, from http://www.chara.gsu. edu/~gudehus/Quotations/quotations_lmn.html

Haeckel, E. (1866/1988). *Generelle morphologie des organismus*: *Allgemeine Entwicklungsgeschichte*. Berlin: de Gruyter.

Hockett, C. F. (1960). The origin of speech. *Scientific American, 203*, 89–97.

Hoopes, J. (1991). *Peirce on signs*. Chapel Hill and London: The University of North Carolina Press.

Irvine, M. (2012). *Mikhail Bakhtin. Main theories: Dialogism, polyphony, heteroglossia, open interpretation*. Retrieved September 14, 2012, from http://ww9.georgetown.edu/faculty/irvinem/theory/ bakhtin – maintheory.html

Jämsä, T. (2001). Jakob von Uexküll's theory of sign and meaning from a philosophical, semiotic, and linguistic point of view. *Semiotica, 134*(1/4), 481–551.

Jämsä, T. (2006). The concept of sustainable development. In A. Pipere (Ed.), *Education and sustainable development: First steps toward changes, 1*, (pp. 5–30). Daugavpils: Daugavpils University Publishing House "Saule".

Jämsä, T. (2007). Semiosis in evolution. In M. Barbieri (Ed.), *Introduction to biosemiotics: The new biological synthesis* (pp. 69–100). Berlin: Springer.

Kull, K. (2005). Semiosphere and a dual ecology: Paradoxes of communication. *Sign Systems Studies, 33*(1), 175–189.

Lotman, Y. M. (1992/2000). *Universe of the mind: A semiotic theory of culture.* Bloomington, Ind.: Indiana University Press.

Martinet, A. (1965). *Linguistique synchronique: Études et recherches*. Paris: Presses Universitaires de France.

Naess, A. (1995). The deep ecological movement. Some philosophical aspects. In G. Sessions (Ed.), *Deep ecology for the 21st century: Readings on the philosophy and practice of the new environmentalism* (pp. 64–84). Boston and London: Shambhala.

Nöth, W. (1998). Ecosemiotics. *Sign Systems Studies, 26*, 332–343.

Odin, S. (1996). *The social self in Zen and American pragmatism*. Albany: State University of New York Press.

Paavola, S. (2006). *On the origin of ideas: An abductivist approach to discovery.* Doctoral thesis. In M. Kopperi, P. Raatikainen, Panu and Petri Ylikoski, P. Österman & B. Österman (Eds.), *Philosophical studies from the University of Helsinki, 15.* Helsinki: Department of Philosophy. Department of Social and Moral Philosophy.

Peirce, C. S. (1893). Evolutionary love. *The Monist, 3*(1), 176–200, for "agapism" see p. 188. Reprinted in Collected Papers, vol. 6, paragraphs 287–317, for the word "agapism" see paragraph 302.

Peirce, C. S. (1931–1958). CP = *Collected papers of Charles Sanders Peirce,* 1–8. Edited by C. Hartshorne, P. Weiss & A. W. Burks. Cambridge, Mass.: Harvard University Press.

Peirce, C. S. (2012). *Links to the Peirce Edition Project (P. E. P.) online*. Retrieved August 17, 2012, from www.cspeirce.com/PEP.htm

Peirce, C. S. (2013). *What is a sign?* Retrieved March 20, 2013, from www.marxists.org/reference/subject/philosophy/works/us/peirce1.htm

Salmela, S. (2012). Vapaa järki ahneuden kahleissa [The free intellect in the bondage of greed]. *Kasvatus & Aika* [Education & Time], *6*(1*)*, 56–61.

Salomaa, J. E. (1944). *J. V. Snellman: Elämä ja filosofia* [J. V. Snellman: Life and philosophy]. Porvoo: WSOY.

de Saussure, F. (1916/2012). *Course in general linguistics.* Forgotten Books Press: publisher of e-books, retrievable by the name of it.

Schurz, G. (2008). The meta-inductivist's winning strategy in the prediction game: A new approach to Hume's problem. *Philosophy of Science, 75*(3), 278–305.

Snellman, J. V. (1861/2004). Kasvatustieteen luentosarjan käsikirjoitus, kevätlukukausi 1861 [Manuscript for a lecture series about education, the spring semester 1861]. *Kootut teokset* [Complete works], *17*, 215–303. Helsinki: Opetusministeriö [Ministry of Education].

Torop, P. (2005). Semiosphere and/as the research object of semiotics of culture. *Sign Systems Studies, 33*(1), 159–173.

Torop, P. (2008.) Translation as communication and auto-communication. *Sign Systems Studies, 36*(2), 253–257.

Stables, A. (2005). *Living and learning in semiotic engagement: A new theory of education*. Lampeter and Ceredigion: The Edwin Mellen Press.

von Uexküll, J. (1940). *Bedeutungslehre* [English translation]. Leipzig: Barth.

Vogel, G., & Angermann, H. (1977). *Dtv-Atlas zur Biologie* [English translation]. 12th ed. München: dtv.

Vygotsky, L. S. (1986). *Thought and language*. Cambridge, Mass.: The MIT Press.

Zeman, J. (1997). Peirce's graphs. In D. Lukose, H. Delugach, M. Keeler, & J. Sowa (Eds.), *Conceptual structures: Fulfilling Peirce's dream. Fifth International Conference of Conceptual Structures in Seattle, Washington, USA* (pp. 12–24). Berlin, Heidelberg and New York: Springer.

Nature tourism terminology suffers from fuzziness - conceptually and ethically contested or empty catchwords?

Maria Paasirinne

University of Eastern Finland, Finland

ABSTRACT

This article attempts to clarify nature tourism terminology. It is based on a study in which some basic American English and Finnish concepts and terms concerning nature tourism were analyzed.

Prototypes and their suitability for creating the general picture and mapping the mental structures in an abstract language field were studied. The study explored the possibility to approach the concepts of nature tourism by formulating prototype descriptions for some terms. My examples are sustainable tourism and wilderness tourism.

In prototype theory the aim is not to give an exhaustive definition, because this is regarded as impossible, but to list the most frequent and common attributes that a concept could have. Prototype theory suggests that human categorization is essentially a matter of both human experience and imagination and also culture.

The Finnish terms were usually translated literally from the English terms, even though the concepts associated with them were quite different, e.g. nature tourism terms contained a number of different meaning elements, sometimes ecological or even religious aspects. Slightly normative recommendations of change are made.

Keywords: prototype theory, sustainable tourism, wilderness tourism, nature tourism terminology

INTRODUCTION

Nature tourism terminology has fuzziness. Buckley (1994, 664) claims that "a precise definition of ecotourism is perhaps unnecessary unless the term is used in legal or administrative documents, such as planning and development control instruments or grant guidelines for funding agencies". However, I agree with Scace et al (1992, 13) when they point out that there is a need to define terminology; and with Momforth (1993, 11) when he states that an attempt to organize the terms concerning tourism in nature may be important; and with Condit (1995, 6, 11) when he encapsulates it all by saying that "nature and tourism are too valuable to be neglected without developing normative concepts of nature tourism".

Tourism is the world's largest service sector industry, in terms of international trade (Law, Alan 2008). The demand for nature-based tourism has steadily grown and is the most rapidly expanding sector within tourism across Europe and elsewhere. A report, presented at the 19th session of the UNWTO General Assembly, confirms that international tourism will continue to grow in a sustained manner in the next two decades. (UNWTO 2011)

As a result, an average of 43 million additional international tourists will join the tourism marketplace every year. The problems resulting from this growth have created the phenomenon of nature tourism or ecotourism. In the early 1990's nature tourism research was done in university faculties of forestry, but in the beginning of 2000 international cooperation in nature tourism research started in Finland. (Näkökulmia....., 2005, 29) Nature tourism is one of the most researched topics in tourism research, but the problem of terminological fuzziness remains the same as at the beginning of this study in 1997. Nowadays, nature tourism has no commonly used definition in Finland: for example snowmobiling or cottage holidays can be regarded as nature tourism. (Murroksen...., 2011, 36)

The division of "bad" mass tourism and "good" nature tourism has been challenged in the current tourism research debate. Wheeler (1995, 38 – 49) states that the tourist industry is using "green" concepts to improve its own image while in reality it is continuing its short-term commercial profits strategy. There have been many attempts to define sustainable tourism or ecotourism in the literature (e.g. Hemmi 1994); and some researchers feel that there is already a sustainable tourism "overload" problem (Environmental..., 2000)

CANADA AND FINLAND

Nature experiences in Canada and in Finland consist partly of the same kinds of phenomena, for example the northern lights, pine forests, and severe winters; and both countries attract tourists with the same kind of interests, such as beautiful and unspoilt nature, salmon and pine forests. Furthermore the social conditions are similar, for example no wars or political conflicts have an effect on incoming tourism.

Canada Directorate Tourism believed almost 20 years ago (Adventure Travel….1995: 15) that Canada has the potential to become a world leader in adventure travel, which is one of the nature-related forms of tourism. In Finland people understand the significance of the natural environment, including its potential for tourism. In 1996 Finland's tourism

policy aimed to establish Finland as the leader among the Baltic Sea countries, providing tourism experiences in summer and winter nature tourism (MEK 1996).

In 2006 Mecklenburg-Vorpommern in Germany was named as priority area coordinator for tourism. The first co-operative action is to "highlight and optimize the sustainable tourism potential" of the Baltic Sea Region by establishing an environmentally-friendly tourism strategy in the Baltic Sea Region (including Russia). This strategy could include the harmonization of standards, the development of similar projects in different regions, joint marketing of the region and cooperation on projects (EU Strategy for Baltic Sea Region 2007 – 2013). Probably nature tourism terminology will become wider if tourist companies offer their services in the same brochures under the same umbrella term "sustainable tourism destinations". Moreover, more inextricable and disorganized terms can be avoided when projects are gathered together in the name of business. This would be the moment for a clear terminology analysis in the field, but is it considered to be important?

FUZZINESS

All of the ecotourism definitions are replete with elusive concepts, such as conservation and sustainability (Bjork, 2007: 27). There is no clear agreement on the definition of sustainable tourism and it can be expressed in various ways: adventure travel, alternative travel, ecotourism, nature viewing, nature-based tourism, nature tourism, wilderness tourism, nature observation, nature-based tourism, conservation-supporting tourism, environmentally responsible tourism, sanctuary travel, appropriate tourism, sustainable tourism development, nature appreciation, green tourism, natural environment tourism, wildland tourism etc (e.g. Higham, 2007; Buckley, 2009) . The usage of terms may give an impression that every term represents a different concept, though this is unlikely to be true; see e.g. table 1 below which shows the number of terms meaning nature or natural environment.

Table 1. The number of terms referring to sustainable tourism in randomly picked tourist brochures in Canada and Finland 1995 – 2011.

Marketing terminologies used by tour operators:	Number of terms
special-interest tourism	30
adventure tourism	18
responsible tourism	17
green tourism	12
wildlife tourism	10
ecotourism	10
alternative tourism	7
sustainable tourism	7
nature tourism	5
soft tourism	3
ethical tourism	3
appropriate tourism	1

Some of the concepts overlap, while some of the terms are virtually synonymous. It is hard to define the exact attributes that a certain concept can actually have without proper research. Also cultural differences would be valuable to notice. (e.g. Fennell 2003; Diamantis 1999; Sirakaya et al. 1999).

Risto Haarala (1981, 15) defines a term as an expression whose meaning can be interpreted without context. When a term is put into context, it will not affect any change in its meaning. He states that the meaning of a term in a special language field depends on the definition rather than the context. The definitions of the terms are important, but the term wilderness is sometimes used as a synonym for nature in travel brochures. For example, a tourist brochure may say "Experience the wilderness in the Canadian Rockies". According to Haarala the context does not change the meaning of the term. Here the meaning of wilderness has changed to mean the same as nature. The term nature is replaced with wilderness perhaps because it is more attractive than the old and worn-out nature-term. This implies that people can always use the term wilderness when referring to nature, if they want to. Among other researchers Ville Hallikainen has tried to compare dominant mental images of wilderness in Finland and America, but still, there is no doubt that the term sustainable tourism as well as ecotourism is not a very well defined one even if it is a useful concept (c.f. Higham, 2007, 2).

SYSTEM OF CONCEPTS

Zawada & Swanepoel (1994, 255) state that traditionally there are two competing concept theories in the study of categorization: classical theory (which is same as the terminology theory) and prototype theory. The essential difference, basically, lies in their different epistemological commitments. The most structuralist frameworks within the classical concept model are embedded in a number of objectivist epistemological commitments. The most important of these are firstly that concepts and the conceptual features of which they are made up are no more than replicas or mirror representations of the objective structure of the world; and secondly, concepts reflect the "essence" of the entities, relations, processes, etc. that make up this world. Prototype theory suggests that prototypes are "superficial and may result from many factors" (Lakoff, 1997), and the nature of defining features is interactional and idealized.

The views of the classical theory on the nature of the defining features of concepts and those of scientific concepts in terminology theory are summarized in table 2.

Table 2. Different views on the nature, role, and cognitive status of the defining features of concepts. Source: Zawada & Swanepoel 1994: 256, modified.

	TERMINOLOGY THEORY	PROTOTYPE THEORY
THE NATURE OF DEFINING FEATURES	- fixed - inherent - decontextualized	- not inherent - not objectively in the world - interactional - graded - abstract - idealized - perceptual - cultural
THE ROLE OF FEATURES IN DEFINING A CONCEPT	- essential - necessary and sufficient conditions	- functional - family resemblances - clusters
THE OBJECTIVE STATUS OF DEFINING FEATURES	- objectively identify referents in the world - are ultimately definable by primitive features	- holistic gestalts

According to Felber (1984, 117) a characteristic is an element of a concept which describes or identifies certain qualities of a specific object. Characteristics are used for comparing and classifying, and for formulating the definitions of concepts, and in selecting the terms assigned to them. Characteristics are classified as intrinsic on the one hand, i.e. inherent – especially those of design (shape and size), material, colour, etc – and extrinsic on the other hand – those of purpose, functioning, performance, location and positioning in the assembly; characteristics of origin, e.g. method of manufacture; discovered; describer; inventor; producer; country of origin or supplier. It is impossible to find easily any of these attributes when we consider the concepts nature or wilderness. This indicates that it is impossible to construct a concept system as is normally done in terminology work. The theory is basically culture-specific and not objective, as was thought.

PROTOTYPES

In terminology work, the aim is to list the attributes the concept appears to have. According to Peter Weissenhofer (1995, 41), terminology work aims at very strict delimitation and precise definition of concepts, so that communication will not suffer from ambiguity and inefficiency. The aim of prototype theory is not to give an exhaustive definition, because this is regarded as impossible. I follow Eysenck & Keane's (1990, 264) view that the membership of a certain category is determined by the similarity of an object's attributes to the category's prototype, whether that prototype be represented by attributes or an exemplar of the category.

According to the prototype theory a person possesses holistic representations or ideas based on previous experiences that reveal the attributes which are typical of a certain concept. In other words, the attributes are interactional and based on individual experiences of physical, social and cultural surroundings.

In figure 1. Hallikainen (1993, 60) shows that the experience of the environment, in other words, the way in which people perceive the environment around them, varies

among persons. Interwoven mental impressions, a person's previous experiences, and genotype all have an effect on the formation of experience. The subject's mood and individual expectations, as well as state of mind at the particular moment all have an effect on the quality of the experience. It is also worth taking note of what Erik Cohen (1979, 194) has said about "realizing" the environment in a tourist location. He claims that "the various modes of touristic experiences differ in the ease of their realization". "The more 'profound' the mode of experience, (....) the harder it becomes to realize it".
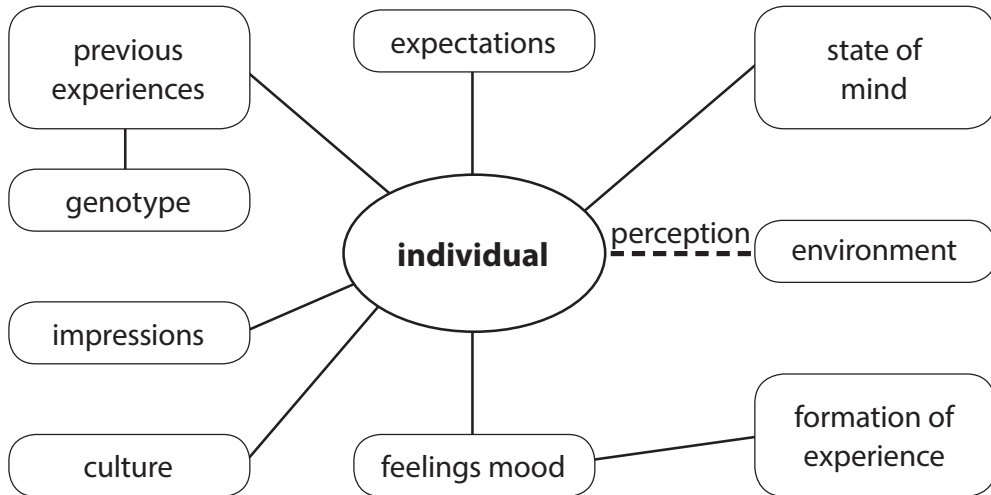

Figure 1 Formation of Experience of the Environment; source: Hallikainen 1993: 60, modified

Smyth et al. (1994, 65 – 66) have observed that one of the most basic ways to organize what we know is to put things into groups; and if we lack this ability every single object or event in the environment has to be treated as something new. We categorize, i.e. we are making up our minds about the meaning of things and how to behave towards them. According to Rosch and Mervis and Rosch (1975, 1977), people seem to have "an amalgam of ideal category characteristics" in their minds. When other, new items can be matched against the attributes of this prototype and if the match is reasonably good, they are considered to be members of the particular category, though not necessarily very good ones.

Prototype theory is said to be one of the most powerful psycholinguistic theories (e.g. Zawada & Swanepoel, 1994, 258). Eleanor Rosch (1977; Rosch & Mervis, 1975) showed that people do not categorize reality according to binary attributes which belong to the category or do not belong to it (cf. classical theory, which insists that every category is a group of necessary and sufficient attributes), but rather according to prototypes which do not have clear-cut boundaries at all. Fred Karlsson (1994, 193 – 194) points out that a prototype will be determined by the typical outlook or function of the item or subject.
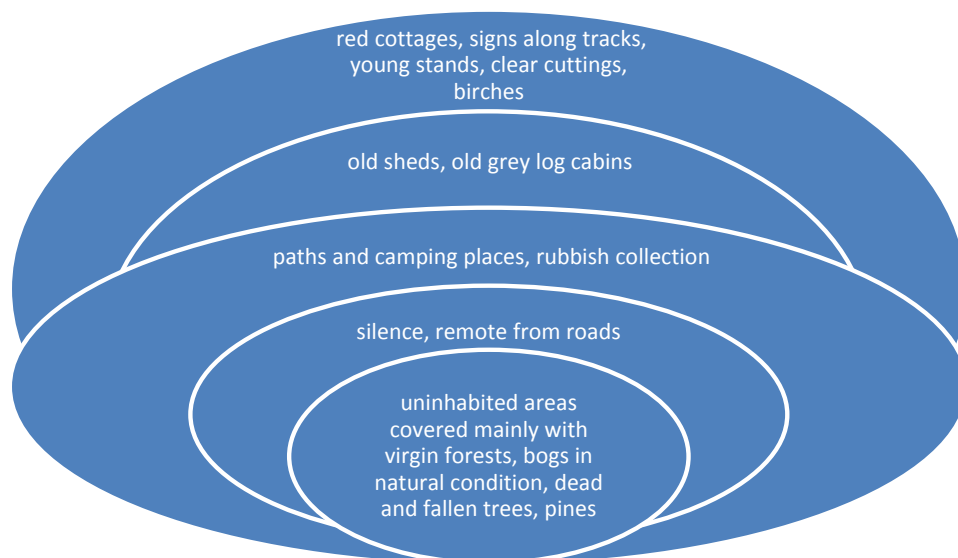
Figure 2. Prototypicality of Finnish wilderness according to Hallikainen 2000 (c.f. Linke et al. 1991: 158; Aitchinson 1987:54)

The empirical evidence against the classical approach centres on the following themes (e.g. Zawada & Swanepoel 1994, 258 – 259): Members of the categories are regarded as members on the basis of a so-called family resemblance model, in which members share some but not all properties. Certain peripheral members of the category may, however, have no features in common at all. Some members of the category are shown to be more representative or better examples of a category; i.e. categories are structured around central members, and these categories have fuzzy boundaries. These characteristics are seen as typical of the notion of "prototypicality" (Geeraerts 1989, 592 – 593).

In my opinion, prototype theory might introduce new possibilities for understanding concepts. In an abstract language field, the attributes which a particular term can have are constructed in the person's mind. Some kind of an amalgam of ideal category attributes is present in people's minds, and the individual category member possesses all or most of these attributes representing the prototype. Other items can be matched against the attributes of this prototype, and if the match is reasonably good they are considered to be members of the respective category. These attributes cannot always be seen or measured as stated in an orthodox theory of terminology, but as I see it, prototypes are useful for creating the general picture and mapping mental structures in an abstract language field.

Furthermore, the aim of prototype theory is not to give an exhaustive definition, which is regarded as impossible, because of fuzziness or arbitrariness. We behave as if we know what the centre of the category is and compare new items to this. Specific concepts do not arise in isolation, but are all interrelated into our general knowledge of the world. We should bear in mind the fact that it is extremely difficult to analyze the attributes of a prototype, since identification criteria are interwoven with stored knowledge.

DATA

The term inventory in English was compiled from sources that were in use both in the US and Canada. My sources consisted of brochures about nature tourism, official documents, such as law texts and annual reports from the Canadian Ministry of the Environment, Lands and Parks; various English and Canadian English vocabularies, dictionaries, magazines, tourism textbooks; some interviews conducted by phone or personally with people involved in nature tourism; and a film of Yellowstone Park.

The accumulation of data was carried out in Finland following the same method. As in Canada, I used the terms nature and wilderness as my tools to define and analyze nature tourism terms because I wanted to find out the meaning of these terms in two different cultures. Nature tourism in Canada is more advanced than in Finland and this meant the research suffered from the resulting deficiency of the relevant nature tourism literature in Finland when the project was started in autumn 1995. In 2012 there was an abundant amount of printed material available in Finland, too.

METHODOLOGY

The practical terminology work was carried out in several stages. The first task was the collection of the data. In doing this standard procedures in terminology work were followed. Specifically the STS Terminology Work Handbook (1989, 142) states that when doing terminology work, it is necessary to have: printed, "authorized" material, such as law texts; material accepted by scholars, such as textbooks and dictionaries; current material, such as brochures and reports and oral sources, such as specialists.

The second task was the accumulation of terminological documentation in English: a term inventory. The instructions for terminology theory in the SFS Terminology Work Handbook (1989: 142) state that a term inventory is necessary, because it helps to find the exact terms which are used in the language field studied. 122 English pre-terms were extracted from the sources. By "pre-term" is meant a term which might become the final term, the term which I wanted to analyse. When doing this work I was systematically following the guidelines of terminology theory. I concentrated on the sections or parts of the material found in the indices by focusing on some "key" terms, such as nature tourism, ecotourism, and sustainable tourism.

I went through the 122 pre-terms systematically and selected the terms that I thought to be commonly used. In this I used intuition, based on fourteen years spent working in tourism business and studying tourism. Then I weighted significance of the terms and determined their occurrence empirically. The criterion for selecting these terms was clear; they had to be "basic" terms in nature tourism. By "basic" I mean the most commonly used terms nowadays in nature tourism books and brochures.

A 'term' could be either a word or a phrase, so I collected single words or certain groups of words or complete phrases, e.g. ecotourism, alternative form of tourism or travel that minimally affects the environment. This method helped me to analyse larger entities at the same time and to show me their relevance to my paper. As Picht & Draskau (1985: 167) advise, all relevant information relating to concepts, such as terms, definitions

(also in the broader sense), explanations, graphic representations, and other useful and relevant data, such as grammar, recommendations about the usage of the term, and of course, the source and its page number, were also collected at this stage. These descriptions were my main focus in the study. Sometimes from the same source I could find not only the terms, but also the definitions. The definitions helped me to identify relevant attributes that I could analyze later. In other words, a ready-made definition contained a lot of important information for my study. As at this point I followed terminology theory, I continued to select the exact terms from my list, and eventually, I ended up with 55 nature tourism terms and 11 descriptions.

I created five methodological tools which helped me to distil the most important attributes and to formulate the prototype descriptions for the terms. The methodological tools were target group (**who** made the trip), location (**where** was the trip made to), mobility (**how** were the tourists transported), purpose (**why** was the trip being made) and focus (**what** was done there). I chose these tools because they seemed to give me valuable information from many angles. I gathered these elements and the most repetitive attributes I decided to carry through to my descriptions.

RESULTS

The largest group of attributes I could find in my data were adjectives. These adjectives attached to and associated with the terms were analyzed by first counting their frequency and their significance was weighed by counting their number in the data. Adjectives were, for example "rewarding", "strenuous", "of short duration", "romanticizing", "small-scale", "elite", "humble", "strictly guided" etc. My empirical observation was that when subjects were asked to write down examples of a particular category they were more likely to mention the most typical members first, as Rosch (1975, 573 – 605) had noticed, too. There were many informants who first mentioned e.g. "silence" or "by foot"

Locations varied between "nature park" and "backwoods". The purposes were "exploration", "isolation", "fleeing from everyday routines", "excelling oneself", "spending one's time" etc. What people were doing there (focuses) were "isolation", "fishing", "seeing", "trekking", "resting" and "thinking". Target groups were, among others, "tourists", "the masses", "school children" and "environmentalists". The ways people moved in the natural environment (mobility) were "by car", "not by car", "by public transport" and so on.

These attributes are found as a result of an empirical analysis: the concept adventure travel is shown to have attributes, such as "wilderness setting", "thrill-seeking" and "physical interest". Sustainable tourism, in turn, has attributes like "special interest" or "small-scale accommodation".

The wilderness tourism term can be compared with some other nature tourism terms in the table no. 3. There the most important attributes of the terms are collected to show distinctions among them. For example wilderness tourism highlights doing: research, education or interpretive programs; sanctuary travel or nature tourism is just being and enjoying; and adventure travel includes high or low levels of physical activity. And this term in turn can be divided into hard adventure travel and soft adventure travel.

Table no. 3. The most important attributes associated to English nature tourism terms

Term	Target group	Location	Mobility	Purpose	Focus
nature tourism		- nature setting		- opportunity of immersing himself in nature - experience, enjoy and learn about the natural environment	- enjoying a scenic view
adventure travel		- unusual, exotic, remote, wilderness setting	- some form of unconventional means of transportation - human-powered	- nature observation	- high (hard adventure travel) or low levels of physical activity (soft adventure travel)
wilderness tourism	- individuals - small groups	- far away from the nearest person	- foot travel	- renewal of mind and spirit or religious experience	- researsh, education, interpretive programs
ecotourism		- undisturbed natural area		- respecting attitude towards the host community and culture	
green tourism	- "culture vulture" - volunteer - unpaid assistant - Indiana Jones-type	- everywhere		- encourages, promotes personal intellectual and spiritual growth and satisfaction	- more meaningful, challenging adventurous experiences
sanctuary travel		- nature		- ethical dimensions to experience something beautiful deep inside	- beeing

1. WILDERNESS TOURISM

The prototype definition I created on the basis of the attributes of "wilderness tourism" collected is: Wilderness tourism is a form of sustainable tourism and adventure travel that is far away from the nearest person, alone with nature in roadless, undeveloped natural areas with no modern amenities. Wilderness activity is restricted to foot travel, research, education and interpretive programs and done by individuals or small groups in order to have "natural experiences". Wilderness is where the effects of man are not apparent: construction of roads, development of recreational facilities, removal of trees, and no prohibition of hunting. What makes the wilderness experience unique is the tranquillity, peace and silence to be found in the wilderness, and the opportunity it affords for contemplation. We have agreed not to drive our automobiles into cathedrals, concert halls, art museums, legislative assemblies, private bedrooms and the other sanctums of our culture; we might like to treat our national parks with the same deference, for they, too, are holy places. Synonyms for wilderness appreciation are wilderness adventure, wilderness recreation, wilderness tourism and wilderness travel.

2. SUSTAINABLE TOURISM

The prototype definition I created on the basis of the attributes of "sustainable tourism" collected is: Sustainable tourism is a form of nature tourism. It is small-scale, locally planned and managed, environmentally sensitive, stable and long term tourism that involves knowledge and preparation from participants. Special interests, such as natural history, ornithology, botanizing, whale-watching, photography, relived history, culture, native crafts, native cooking, painting, and the education of the tourist, limit the number of tourists and tours. Sustainable tourism involves the education of local people and guides and local financial gain and requires the 'good' behaviour of tourists, respect for the local cultural & physical environment, the use of existing infrastructure, selectivity and limitation of development, preservation of the local environment and local culture, avoiding the imposition of Western culture, the tourist integrated as a part of the local community. Synonyms are sustainable tourism development, alternative travel, alternative tourism, alternative form of tourism, tourism alternatives, responsible travel, responsible tourism, appropriate tourism, environmentally sustainable form of tourism and wildlife tourism. (cf. the International Academy for the Study of Tourism)

When carrying the analysis I kept in mind that family resemblance increases if an item shares more properties with members of its own category and decreases if the item shares more properties with members of other categories. A category may therefore involve a list of the relevant attributes, and by counting the most frequent attributes (adjectives + 5 tools) of each of my terms, I tried to formulate my final prototypic descriptions. The meaning of a concept could be captured by a conjunctive list of attributes. These attributes are small, atomic units which are the basic building blocks of concepts.

Instead of formulating a system of concepts (which is the aim in terminology theory) I tried to draw up a satellite model based on mind-mapping techniques in order to help me see if there would be some kind of a structure of the nature tourism terms (see Table 3). I tried to keep similar terms physically close to each other in the satellites. In my scheme, the concepts that are further away are placed physically further away. I tried to formulate the descriptions from the tourist's point of view. In other words, I tried to understand the experience that the tourist has in nature.

DISCUSSION

The purpose of the research was to demonstrate that it is not always possible to build a system of concepts which goes together with distinctive terms. Instead of creating a system of concepts, which is the aim of terminology work, prototypes and their suitability for creating the general picture and mapping the mental structures in an abstract language field were studied. The concepts wilderness and sustainable are conceptually and ethically contested. There is a confusion in the terminology and in spite of everything that has been written and said, we do not seem to have made a great progress in clearly defining sustainable tourism and understanding it (cf. Environmental..., 2000).

According to cognitive linguistics individual categories can be explained in relation to human cognition activity. The human senses reflect the way of experiencing the world,

culture and modes of interaction. Cognition can be understood broadly including cultural and human modes of interaction. Sustainable tourism has been considered more an ideal than reality, but can we say what is ideal in various cultural surroundings without culture-specific prototypes?

Natural categories can be unified and organized around the representative or prototypic category exemplars. Some category exemplars better epitomize the essential meaning of the concept than others and these prototypes serve as reference points in the identification of new category members. Thinking about prototypes brings order to the structure of fuzzy categories. If the structure of natural categories can be simplified or clarified by focusing on prototypic exemplars, so, too, can the mental representations for the categories. A prototype helps to summarize the central tendency and the variability in the features of category members. In so doing, a prototype reduces an enormous quantity of information into a rather neat capsule summary; that representation can then help the perceiver to identify new category members – to answer the question, "what is that?" (cf. Niedenthan & Cantor, 1983, 25)

Sustainable tourism is an umbrella term for all the terms referring to nature tourism. When I examine the terms nature tourism and nature travel, both of the terms are assigned to the same concept. However, although both the terms refer to the same concept, the latter term highlights the aspect of travelling in nature, whereas the former implies the environmental aspect; that the tourism is being carried out in nature.

What is then sustainable tourism? If in Finland fishing is considered as sustainable tourism, even if fish are killed (Condit, 1995, 38 – 40) and fishing in Canada is not sustainable tourism, how can we translate the terms so that individuals can classify this form of tourism in the right category. There is no clear or strict boundary in this, because in Finland hunting is not included under sustainable tourism. Furthermore, in Canada neither fishing, hunting, snowmobiling nor ice fishing are considered to be nature tourism. In Finland downhill skiing is not included under nature tourism, even though it is one form of nature travel in Canada. Wilderness tourism is a virtual impossibility, and indeed a contradiction in terms: since anywhere where tourist facilities are organized ceases to be a wilderness. Thus wilderness tourism is a conceptual impossibility. How can a tourist have a hike in wilderness? The term of an individual there maybe should be a traveller or hiker, but as tourism indicates the consumptive side of travelling, I would not recommend the usage of tourist when referring to nature travel. There is always the division of bad tourism and good nature tourism. The fuzzy structure of natural categories, and the flexibility with which they are utilized by non-experts, becomes even more apparent in marketing.

Some of these terms are in danger of being exploited as empty "catch-words", purposely or not. Sometimes using wilderness tourism or sustainable tourism terms when advertising their destination is a way to allow companies to relieve their bad consciences for the damage their activities cause to the natural and social environment. The same applies to the individual who wants to visit nature without harming the environment; he or she can fly thousands of kilometres to an overseas destination and make a helitour to watch whales, or birds high in the mountains, if the trip is advertised as "wilderness tour". Furthermore, prototype theory is apt for translators. In the domain of a nature setting, the prototype also provides information about the likely ecotour. Natural categories

are useful not only in making identifications and predictions about potential category members, but in making personal decisions about which nature tours to buy and what places to visit. By using the information in prototypes, individuals can test the match of a nature tour to their own taste.

REFERENCES:

Adventure Travel in Canada (1995). *An Overview*. Canada Directorate Tourism. Canada.

Aitchinson, J. (1987). *Words in the Mind. An Introduction to the Mental Lexicon*. Great Britain: Basil Blackwell. T. J. Press Ltd: Padstow.

Buckley, R. (1994). "A Framework for Ecotourism". In *Annals of Tourism Research*. A Social Sciences Journal. Vol. 2, number 3: Pergamon Press.

Buckley, R. (2009). *Ecotourism. Principles and Practices*. CAB International. UK: Wallingford: Cambridge University Press. Cambridge.

Cohen, E. (1979). A Phenomenology of Tourist Experiences. (pp. 179-201) In *Sociology*, 13 (2).

Condit, S. (1995). *Luontomatkailun käsite ja normatiiviset tavoitteet.* (The concepts and normative aims of nature tourism.) Serie A. 9. Joensuu: University of Joensuu. Publication of the Continuing Education Centre.

Björk, P. (2007). Definition Paradoxes: From concept to definition. In *Critical Issues in Ecotourism – Understanding a Complex Tourism Definition*, James Higham (Ed.). Great Britain: Elsevier Ltd.

Felber, H. (1984). *Terminology Manual*. Unesco and Infoterm.

Graham, D. (1996) (Professor, Faculty of Social Sciences, the University of West Indes, Barbados) *Personal communication in symposium "Paradigms in Tourism Research".* University of Jyväskylä Finland.

Geeraerts, Dirk (1989). "Introduction: prospects and problems of prototype theory" (pp. 587–612) . In *Linguistics* vol. 27, no 4.

Haarala, R. (1981). *Sanastotyön opas*. (Terminology work handbook). Kotimaisten kielten tutkimus-keskuksen julkaisuja 16. Helsinki: Valtion painatuskeskus.

Hallikainen, V. (1993). *Erämaan käsite ja kokeminen, suomalaisten erämaamielikuva, erämaiden virkisty-skäyttö ja arvostus.* (The concept of wilderness areas in Finland, their use and appreciation) Lisensiaatintutkielma. Metsätieteellinen tiedekunta metsänhoitotiede. Joensuu: Joensuun yliopisto (University of Joensuu).

Hallikainen, V. (1998). *The Finnish Wilderness Experience.* Dissertation. Metsäntutkimuslaitoksen tiedonantoja 711.

Hemmi, J. (1994). "Ekoturismin käsite ja sisältö". In Matkailun vetovoimatekijät tutkimuskohteena, Seppo Aho (Ed.). Oulun yliopisto: Pohjois-Suomen tutkimuslaitos.

Jantzen, R. (1996). (President in Nature Venture Tours in Burnaby, Canada). *Feedback to my reseach letter and telephone conversation.*

Karlsson, F. (1994). *Yleinen kielitiede*. Helsinki: Yliopistopaino.

McKercher, B. (1996). "Differences between Tourism and Recreation in Parks" (pp. 563 – 575). In *Annals of Tourism Research*, 23 (3).

Lakoff, G. (1987). *Women, Fire and Dangerous Things*. What Categories Reveal about the Mind. Chicago: The University of Chicago Press.

MEK (1996). Matkailun edistämiskeskus (Finnish Tourist Board) ; director Bengt Pihlström.

Momforth, M. (1993). *Eco-tourism: Terminology and Definitions.* Research Report Series. No. 1. University of Plymouth.

Niedenthal, P. M. & Cantor, N. (1983). *Making Use of Social Prototypes: From Fuzzy Concepts to Firm Decisions.* Institute for Social Research, University of Michigan. In http://deepblue.lib.umich.edu/bitstream/handle/2027.42/24702/0000121.pdf;jsessionid=6A16EFF2C5D4FE6FB616BEDF8B4BE44D?sequence=1; searched 7th Feb 2013

Näkökulmia luontomatkailuun ja sen tulevaisuuteen (Perspectives on nature tourism and its future) (2005). Eeva Koivula and Olli Saastamoinen (Ed.). Metsätieteellinen tiedekunta. Tiedonantoja 165; University of Joensuu.

Picht, H. & Draskau, J. (1985). *Terminology. An Introduction.* The Copenhagen School of Economics. England: University of Surrey.

A Protected Areas Strategy for British Columbia, Outdoor Recreation in British Columbia (1994). Supply and Demand Issues and Trends. Background Papers. The Protected Areas Component of B.C.'s Land Use Strategy. Province of British Columbia.

Rosch, Eleanor & Mervis, Carolyn (1975). An article "Family Resemblances: Studies in the Internal Structure of Categories" (pp. 573 – 605) in *Cognitive Psychology* 7.

Rosch, E. (1977). Human Categorization. In N. Warren's (Ed.) *Studies in Cross-Cultural Psychology.* London: Academic.

Scace, R. C. & Grifone, E. & Usher. R. (1992). *Ecotourism in Canada.* Canadian Environmental Advisory Council. Canada: Ottawa.

Stevenson, Harold & Wyman, Bruce (2007). *The facts on File Dictionary of Environmental Science.* New York.

Smyth, M. M., Collins, A. F., Morris, P. E. & Levy, P. (1994). *Cognition in Action.* United Kingdom: Lawrence Erlbaum Associates Ltd. BPC Wheatons Ltd. Exeter.

Wahlström, E., Hallanaro, E-L. & Reinikainen, T. (1993). *The State of the Finnish Environment.* Environment Data Centre & Ministry of the Environment Finland. National Board of Waters and Environment. Forssa: Forssan kirjapaino.

Waterman, L. & G. (1993). *Wilderness Ethics. Preserving the Spirit of Wilderness.* Woodstock. Vt. The Countryman Press.

Whelan, T. (1991). "Ecotourism and Its Role in Sustainable Development". In *Nature Tourism, Managing for the Environment.* The United States of America: Island Press.

Zawada, B. & Swanepoel, P. (1994). "On the Empirical Adequacy of Terminological Concept Theories: The Case for Prototype Theory" (pp. 253 – 275). In *Terminology* vol. 1 (2). John Benjamin Publishing Co.

Östman, J-O. (2000). Merkityksen ajankohtaiset haasteet yleiselle kielitieteelle. In *Merkillinen merkitys* (The importance of current challenges to general linguistics in "Strange" Meaning)) Anu Airola, Heikki J. Koskinen, Veera Mustonen (Eds.). Helsinki: Gaudeamus. Oy Yliopistokustannus University Press Finland. (https://helda.helsinki.fi/bitstream/handle/10224/3610/ostman69-84.pdf?sequence=1; searched: 7th Feb 2013)

Part II

Sustainable early childhood education (ECE) and preschool education

Pedagogical systems theory as a cornerstone of sustainable early childhood and preschool education

Ulla Härkönen

University of Eastern Finland, Finland

ABSTRACT

This paper will describe the background of the author's work and thinking and the development of her pedagogical systems theory in early childhood and preschool education as well as its focal concepts and insights as the result of long-term processes of her career. The holistic, systemic and possibly sustainable nature of the theory will be highlighted, and the paper will aim to show which kinds of qualitative features pedagogical systems theory may have for sustainable education, for sustainable teacher education and for a sustainable future. These kinds of qualitative features will be seen as important, because they can make this theory useful to act in theoretical and in practical contexts in a sustainable way. These qualitative features will enhance the learning processes of student teachers and of children. At best the integration of pedagogical systems theory in education at large will save time and effort to avoid such problems as theoretical confusion and a lack of motivation and skills. The theory ought to stimulate critical and creative thinking. This original theory and the qualitative features described are analyzed from appropriate texts by methods of content analysis in order to ask if the pedagogical systems theory has qualitative features of sustainable development or sustainability to generate criticism, fresh ideas and to create sustainable education, sustainable teacher education and a sustainable future.

Key words: pedagogical systems theory, early childhood education, preschool education, content analysis, sustainable education

INTRODUCTION

I have created a new theory for early childhood and preschool education. Officially in Finland preschool belongs to early childhood education. That is why the title of this theory can be briefly called the pedagogical systems theory for early childhood education. This theory applies also to school education. The main idea in this article will be to analyze which qualitative features this theory has in itself to meet the future challenges of sustainable development or sustainability, in education for sustainable development, in sustainable teacher education, and at the very first and basic period of a person's life, which means early childhood education.

Description of the author's background and the contexts for systems thinking

It is useful, specifically in this article, to explain to the reader the most important contexts of my background. These contexts will show the roots of the theory and will give some tools to understand the theory that I have created during my professional career. The theory is called the pedagogical systems theory for early childhood education.

In the following text I have <u>underlined</u>, **emboldened** and sometimes *italicized* significant words, expressions and phrases. This is because they may have meaningful connections with later texts.

The work of mine has significant contexts from my experiences in childhood and my own education, from experiences as a professional kindergarten teacher and as a university lecturer in early childhood education, and as a professor in education, especially in early childhood education. In practice this happened in the Finnish <u>national context</u>.

In my childhood I lived at home playing and working in my six person –family. This <u>local context</u> and an <u>ecological environmental context</u> was the countryside with home, farm, animals, fields and forests. <u>Play, work and leisure time</u> fluctuated in a natural rhythm without any lessons. In my clear childhood memories, all activities were pleasing. Retrospectively, learning to work has been a valuable heritage. The most important and the most natural educator was life itself. The whole personality - emotional, social, cognitive and physical – soaked up their nutrition from an existence <u>close to nature.</u>

In the countryside there were no kindergartens nor were they needed. I went to school at the age of six, a quite early age when considering the long six kilometres walk. In autumn and in spring, when the ice on the lake was weak, the distance was even nine kilometres. These kinds of things, like many others, developed good health and the so-called Finnish "sisu". The countryside life taught me to see people, work, nature and living together in a chronological process as a whole functional and workable system, where people lived and <u>thought in a holistic and detailed way</u>. Analyzed later by scientific concepts, the local context contained an <u>ecological context</u>, a <u>nature context</u>, and a <u>social context</u> with people. All in all, it was a <u>holistic systemic context</u>. (Wolff, 2011; Härkönen & Jämsä, 2006.)

I loved school. Many memories from the basic school (*kansakoulu*, elementary school at that time in Finland) are quite clear and positive in my mind. Teaching and educating methods were those of the 50's and the 60's, full of teachers' authority. However pupils respected the teachers and liked their school. This school was closed a few years ago,

because the number of pupils had decreased from about one hundred to below twenty. Village people, former pupils, now own the school and keep it as their special place for free-time activities.

With the encouragement of the basic school teachers, I was sent to the upper secondary school (*lukio* in Finnish) in the village centre. Foreign languages and several subjects now became my favoured focus. The construction of the scientific blocks for the basis of scientific thinking and <u>scientific context</u> could go forward.

It is worth mentioning that at the upper secondary school I was educated in the so-called long mathematics course. Mathematics, in addition to many social science subjects, has influenced scientific thinking in creating a new *qualitative systems* theory. Mathematics has contributed quantitative thinking but also significantly my qualitative thinking. It is said in Kvale's (1996, 1) methodological book, that "the qualitative research interview attempts to understand the world from the subjects' points of view, to unfold the meaning of peoples' experiences, to uncover their lived world prior to scientific explanations". In my mind, perhaps because of mathematics and especially of geometry, *qualitative thinking* needs also skills to plan hypotheses and to think logically and to reason in both deductive and inductive argumentation. (See e.g. Kvale, 1996; Niiniluoto, 2002; Strauss, 1987; Williams & May, 1996). I have also learned through my own studies how objective and common ways of thinking arise from subjective thinking and also from the texts (e.g. Härkönen, 1991; 1996; 1999; 2002 a; 2003 a; b; c; d; Õvermann et al., 1979; 1983).

Natural sciences, such as physics and chemistry, have enhanced my education, as well as different areas of the arts, especially the fine arts and theatre. The literature of the social sciences has also formed a meaningful context for understanding the social and political structure and life. Later these experiences led to a ten year period in local politics and as an amateur actress in theatre, and further education of societal literature. (E.g. Halsall, 2008; Kaesler, 2003; McLaren & Giarelli, 1995; Popper, 2000.)

After graduation from upper secondary school I was admitted to study kindergarten teacher pedagogy. The focus of kindergarten teacher education was especially Froebilian pedagogy and its philosophy (see Fröbel, 2012), and other theories, too (e.g. Papadopoulou, 2008). For me this meant becoming acquainted with the <u>pedagogical context</u>. Also theories of developmental psychology were studied, above all Piaget's theory. Practice periods were very important and carefully guided by teachers and lecturers. After graduation in early childhood education I worked in kindergartens in the <u>practical context</u> for three very important years. <u>Practice and work</u> have been a very basic experience for understanding small children's education and education in general. It is difficult to understand how institutional early childhood education can be understood as a coherent whole without practical educational experience.

I then continued my studies in university while working as a lecturer and subsequently as a professor in early childhood education. The <u>academic context</u> was now the main context and content. At that time, a new form of kindergarten teacher education (as it was named) was started in Finland at a few universities, such as the one I worked in. This time, from the middle of the 70's onward, was full of innovative problem solving and creation of new <u>scientific basis for early childhood education science,</u> which had not been taught in universities before this time in Finland. This kind of education was innovated by a <u>scientific context</u>.

My own kindergarten teacher education occurred at the very beginning of the 70's. It was already based on an <u>international context</u>. This context means Europe and Scandinavia and other neighbouring countries. The <u>historical context</u> and the basic roots of the Finnish early childhood education pedagogy have come from Europe, especially Germany. (Ojala, 1985.) During my professional career in education, and especially in early childhood education, at university the international contexts of my work have become worldwide. International contexts offered at the same time many kinds of <u>scientific contexts</u>. The ingredients for developing education science and the new theoretical principles were accumulated consistently.

The decade of the 70's was a time when for instance the <u>topic of peace</u> was prominent also in curricula of early childhood education. Now *peace* is again mentioned in connection with sustainable development (Learning for the future ..., 2011, 6). Simonstein (2008, p. 37–42) writes that peace is conceived as a social project based on justice, respect for the rights of others and of nations associated with international solidarity." --- "Educating for peace is educating for justice; for this reason, new ways of perceiving, acting and thinking in social and environmental policies are necessary." In Simonstein's view it is possible to contribute to change through educational programmes for peace from early childhood.

The international organization NORD LILIA (Arnesen, 1995, 117; Härkönen, 1995) has meant a lot to me in developing views on <u>work and gender</u>. The main topic of Nord Lilia was gender equality. I took part in this project with the process of my doctoral dissertation (Härkönen, 1996). The <u>context of gender equality</u> principles has formed one very central part of my theoretical thinking in children's education, and in general. Today the connections of gender issue to sustainability have since become an **undeniable fact** (see e.g. SD Features UN Decade of Education for Sustainable Development, 2013). Also <u>work</u> and work education have connections to the concept of <u>practice,</u> which has been often mentioned in the texts on sustainable development and in sustainable education.

UNESCO has meant a lot in teaching about sustainable development. In 1999 The United Nations Scientific and Cultural Organization (UNESCO) and York University in Canada established a UNESCO Chair to provide advice to UNESCO and teacher training institutions on <u>reorienting teacher training to address sustainable development</u> (UNESCO Chair in Reorienting… 2011). Charles Hopkins, a former superintendent of curriculum with the Toronto Board of Education and international leader in the evolution of education towards sustainable development, was appointed to the Chair. Hopkins has established a collaborative international network of numerous teacher education institutions. One of the networks was founded in Europe at the Daugavpils University. I was invited to join to this network in 2002 at the very beginning of its activities. Later the network was named as Journal of Teacher Education for Sustainability/Baltic and Black Sea Circle Consortium (JTEFS/BBCC). This organization has its own journal, the Journal of Teacher Education for Sustainability (2013), which earlier was the Journal of Teacher Education and Training (sustainability was the main topic already then). Every year the organization holds a conference in one of the member countries. In 2012 I organized the international conference of JTEFS/BBCC at the University of Eastern Finland in Finland, and I acted as the editor of the Conference Proceedings 2012 (the book in hand). The conference in 2013 will take place in St. Petersburg.

These kinds of long term activities and professional and scientific networks have offered possibilities to learn about sustainability, especially about how this concept could

penetrate teacher education. The <u>context of the concept of sustainability</u> came to be a strong new theoretical challenge (e.g. Elliot, 2006). The world-wide views revealed new reasons for the importance of <u>global contexts</u>.

The association of European Early Childhood Education Research Association (EECERA) has offered especially the <u>context of early childhood education</u>. From there it has been possible to access up-to-date topics on early childhood education. It has been possible to compare my own ideas to those of EECERA's. EECERA is an independent, self-governing, international association which promotes and disseminates multi-disciplinary research on early childhood and its applications to policy and practice (European Early Childhood Education..., 2012).

Many different science fields have influenced educational science and thus educational theories, too. In addition to educational science, I have studied developmental psychology, psychology, sociology, social sciences and also folk science. Later I was active for a ten year period in politics. That kind of work has taught much about the thinking of politicians and showed the limited position of education in the <u>context of policy making</u>. (E.g. Haldane, 2004.) Usually the position of education does not reach any high level. My cultural activities included also amateur dramatics. All of these, <u>societal and political contexts</u> with <u>cultural</u> and <u>psychological context</u> have offered new experiences and knowledge.

The <u>main scientific field</u>, to which this article is focusing, is <u>early childhood education science</u>. In Finland preschool education belongs to early childhood education. Some professional persons have suggested that early childhood education mean the ages of 0–8/9 years. In general, many professionals see that early childhood pedagogy has much to give for teaching and learning at least in the first two school years. However, administratively in Finland, early childhood education means children from birth to seven years old. In this article the concept of early childhood education adheres to the administrative rule, and the concept comprises also preschool.

My motivation focused on education of the person. But the specific motivation focused on the education of a <u>child</u>. Already at a young age I was sure about the basic meanings of the very first years of the person for the whole development and life. Studying educational sciences revealed different contexts, but the <u>context of early childhood education</u> has been the core context throughout my career. Education always contains <u>future thinking</u> combined with <u>history</u> and the <u>present time</u>.

In my background there are several contexts, and these contexts have had an influence on my educational thinking and theoretical orientation. I always wanted to see and learn deeper and further. I consider language to be in a central position when thinking about and reading different texts on the same issues. This led me to understand interpretation, meanings, and systems thinking.

When systems and systems thinking opened new doors for me it was again a new way to see things. Originally I found systems thinking from philosophical-pedagogues' thinking while studying their pedagogical ideologies. Only then I begin to hunt out books on systems thinking. It is noteworthy that systems theories or systems thinking are nowhere prominent in Finnish educational literature. The basics of systems thinking, I found then, were Rapoport (1968), Parsons (1968), Gochman (1968), and then to Checkland (1981), Chang-Gen (1990), Luhmann (1995), Heylighen, Joslyn and Turchin (1999), and Senge

(2012). Several recently published books, for instance Georgiou (2007) and Gharajedaghi (2011) and others, are waiting on the bookshelf to be read.

The different contexts mentioned above can be categorized for instance in the following way: historical, modern time and future-oriented contexts, national and international contexts, local and global or worldwide contexts, nature, society and culture contexts, practical and scientific (academic) contexts, holistic and systemic and detailed thinking contexts, human being and children contexts, practical and theoretical (academic) educational contexts, educational pedagogical contexts with psychological, artistic, societal and political, natural, mathematical and language contexts. All this culminates in early childhood education science. Work, gender, and play, leisure time and peace have been in the middle of the whole view with the emerging principle of a sustainable view.

Compared to the four areas of early childhood education this can be summarized as follows: I have been acquainted with education in practice, in science, in this subject in teacher education, and in the culture of educational thinking. As to sustainability I have become familiar with societal, political and cultural contexts, and environmental contexts, but not so clearly ecological and hardly at all economic contexts. (Later in this article more about these concepts.)

The new emerging theory and sustainability in early childhood education

There are numerous simultaneous contextual areas in early childhood education. Both national and international ideas and views on education are connected in it and these ideas have historical contexts. In practice and in theory early childhood education has been and will be a crucial dimension of pedagogics, so it needs both scientific and practical pedagogical professionalism. What is the situation today? Some critical questions and observations can be observed in modern Finnish early childhood education.

It can be noticed that for instance the roots of Finnish early childhood education come from international educational history, which means that our educational history belongs to the same international tradition as other nations. (Ojala, 1985.) It has been found that historical educational ideologies have been so powerful that they have an impact today and in the future. They have been modern in their own time, and they still may form modern contexts for education if they are familiar to educators and researchers. Worth mentioning is that Froebel's main book Die Menschenerziehung (Fröbel, 2012; 1826) has just been translated into Finnish by professor emerita Aili Helenius in 2012. The title of the book is in Finnish *Ihmisten kasvatus*. It was translated into Swedish in 1920s by an unknown translator. Professor Jan-Erik Johansson (1995) edited this early Swedish translation, which was published under the Swedish title Människans fostran. Compared to Sweden we Finns are late, but the work done by Helenius must be regarded as historically significant. It is good to know that these books are not only history; they are contemporary and also the future of education.

International Froebel conferences, seminars and summer courses are often organized in different countries and cities. I participated in the Froebel conference in 2006 in Dublin (Härkönen, 2006b). In summer 2007 I visited the Froebel summer course in Germany, where I found also SINA Spielzeug toy factory which produced Froebel's blocks. Montessori Associations are working actively around the world. For instance in

2006 I was invited to speak on gender themes (Härkönen, 2007c) in Diyarbakir in Turkey, where one participant, Cheryl Ferreira, talked on the Montessori approach (Ferreira, 2007). Ferreira is from India, an expert on Montessori pedagogy; she worked in the Maria Montessori Training Organisation in Great Britain and she travels around the world to speak about Montessori pedagogy. These are only a few examples but they speak about how these pedagogies live on in today's educational fields. But is this enough?

When reading the contemporary literature of Finnish early childhood education it can be noticed that the theoretical framework and references combine thoughts coming only from the present day, from international research colleagues and/or from school education and usually from other scientific approaches than from pedagogical education science. And at the same time, at least during the last ten years, very concerned texts have been published telling about the lack of pedagogical skills of the different professional groups working in kindergartens. It has been noticed that education based on general social sciences cannot sufficiently develop pedagogical professional skills. These things indicate a low level of professionalism. (E.g. Varhaiskasvatus 2000-luvulla?, 2008.)

Today we have a great lack of kindergarten teachers in Finland. It has been noticed that their pedagogical education focuses on the needs of small children's care, education and teaching. This focus is right. However, if quality and a high level of education are the goal, perhaps also the content of kindergarten teacher education could be studied. The new generation has been educated in universities (in Finland), but no research has been done about the appositeness of the content of their syllabus for early childhood education. For instance, we ought to query the theoretical bases of the teaching in universities. The question is: Could the academic kindergarten teacher education in universities be better for the qualitative features needed in early childhood education? And could it meet the future's problematic challenges as to sustainability, to which today's curricula, Basics on preschool curriculum 2010 (2010) or National Curriculum Guidelines on ECEC in Finland (2003) do not pay much attention.

How is the situation of the scientific background of the persons assessing the academic posts in early childhood education in Finland? In the article by Husa and Kinos (2005, p. 133–151) the influence of psychology in early childhood education is noticed. They say that "psychological knowledge is appreciated by applicants, experts and appointees." They also say that "it may also be stated that academic early childhood education is a research, application, and special field of psychology." In practice, most professors who have acted as reviewers of doctoral dissertations in early childhood education area have been professors of psychology; some have come from (school) education science (didactics) and some few from the sociological sciences. We need professors whose doctoral degree is based on education science, and who in addition have a background in normal full-length kindergarten teacher education and in a professional work in practice. From 2009 I have been the first - or second, depending of how to asses - professor in Finland with all these qualifications in early childhood education. Today in 2013, in the official post of professor in early childhood education we still have only a few professors from early childhood education background qualifications.

I remember the EECERA conference several years ago, in which Professor Christine Pascal said in her speech that we need professors whose background is in early childhood education and its practice. She challenged these persons to step forward. These things

will be historical facts when assessed later. Because any field of science must focus on what is most relevant to it, our responsibility will be to <u>strengthen pedagogical early childhood education science</u>.

In scientific texts the context of modernity seems to be cool to many students. They may not perhaps at all get acquainted with historical pedagogical ideas and roots in kindergarten teacher education curricula. In students' minds those ideas seem to be too old, history is old and long, and it might take too much time to read. After that they never get to know that their nice ideas, for instance about play (Frost, 2010) and about child-centred education, have very long traditions and that there are numerous different theories on them from all over the world. (Hytönen, 1992; Sugrue, 1997.) What does this kind of educational culture mean for practical education and the educational atmosphere in society? (See e.g. Härkönen, 2008 a; 2008 b.) Students ought to have the possibility to learn to understand what *'classical'* means, if it is question about theory or pedagogy. It means the capacity comprehend core and meaningful educational things over historical periods. Cohen and Manion (1994, p. 46) write: *"Historical research in education can also show how and why educational theories and practices developed. It enables educationalists to use former practices to evaluate newer, emerging ones."*

These examples indicate the <u>meaning of education history</u> and of knowing and understanding it. The person who wants to become a kindergarten teacher, just as I did at the beginning of the 70's, is going to be a part of her or his own time. But 40 years in historical thinking is a very short time. In order to know and understand more and beyond her or his own time about education, educating oneself hard and deeply, reading, researching and cultivating oneself in many ways are needed. Finding new challenges, competences, knowledge and skills will be needed for transforming the future (Education on the path to sustainability, 2012).

The historical point of view is a basis, but what else is needed in this pedagogical field? We construct history while living always toward the future. Which kind of future is a better future? We may even ask: Do we have any pedagogical ideology or theory which could be the origin of any new direction or of any new view, which could be worth leaving in future history? The new <u>theory also in itself</u> ought to answer the challenges of today and of the future. It must be quite many sided but be able to focus on its own field. The core question from a theoretical point of view is: Which kind of theory ought it to be to contain early childhood education in a possible holistic way? What should the holistic thinking entail if it is to answer also the challenges of sustainability in education, especially in early childhood education? (Learning for the future ..., 2011.)

The new generation of kindergarten teachers ought to have sufficiently long education, in which the historical and modern, international and national, local and global and the many other contexts mentioned for instance above, could be present. Educational knowledge, pedagogical skills and personality development ought to have the possibility to grow enough to create many sided, holistic and <u>sustainable contexts of pedagogy</u>. (Education on the path to sustainability, 2012; Härkönen & Jämsä, 2006; Learning for the future ..., 2011.)

The modernity of the world and global contexts have offered challenges that have not been earlier so clear or known in the way they are nowadays. Today everyone has at least heard about <u>sustainability</u>. The reasons for this are in the circumstances of all liv-

ing things: they are at risk. This issue concerns the sustainability of the societal, cultural, ecological and economic contexts.

Julie M. Davis (2008, p. 18) writes: "Education for sustainability in the early years is a significantly under-practised, under-resourced and under-examined field, even though young children are the ones who will bear the consequences of our actions and inactions on sustainability-related issues." --- "The implications for early learning for sustainability are obvious."

Sustainable development (Education on the path to sustainability, 2012; Elliot, 2006; Dreo, 2006) is a serious problem for education and teacher education and also for education theories: which kind of education theory can involve all the above mentioned contexts and all the contexts, the societal, cultural, ecological and economic contexts, within the theory itself? This question must be confronted before all others, because the theory itself must be sustainable in its features. It is argued in Learning for the future..., (2011, 2) that at present, education often contributes to unsustainable life styles. This must be the other way around: education must be made sustainable, and the new theory must be sustainable already in itself.

It is difficult for adult persons to change their ingrained habits. But small children can rapidly learn new ways of thinking and acting. Also the education process of early childhood teachers will be a very important context where new knowledge could be spread. In the curricula of teacher education there ought to be such theories embedded within the courses that can influence the student teachers. Sustainable theoretical context can offer new scientific views for sustainable scientific thinking.

The new theory for early childhood education began to emerge in my mind and then develop in the 80's. Before that, after my own teacher education and education practice in kindergartens and working as a lecturer at university, all the single different core units, needed for the basis of the new theory, were already at hand. My creative constructing process began to emerge.

Up to now I have written dissertations, books and several scientific articles in which I have constructed step by step the new theory of pedagogical systems theory for early childhood education.

Due to earlier studies by Härkönen it is already known that this new theory has qualitative features of historical, modern and future-oriented, holistic and systemic features and is a pedagogical theory focusing namely on early childhood education. (Härkönen, 2009; 2011.) But this theory needs to be sufficiently powerful to rectify the situation and to remedy problems in today's education and contemporary theories. I am now examining if this theory has still other main qualitative features. Because the theory is modern and future-oriented it ought to answer the challenges of sustainable development or sustainability. Some new concepts are needed, and they will be defined in the text below.

Why study theories? Theories, especially the main central theory in the science field in question, have a great influence in teacher education. Teacher education ought to rise to the challenges of sustainability. Research activities must be focused on the issue of the teacher education for sustainability, and in connection to that on the sustainability of *theories* in teacher education. That is why the pedagogical systems theory must be studied, developed and critiqued for improving the inclusion of ideas about sustainability.

PROBLEMS OF THIS STUDY

The focused problems while analysing the data in this article are as follows: What are the **connections between the pedagogical systems theory for early childhood education (PST for ECE) and the qualitative features of the concept of sustainable development (SD)or sustainability (S).**

In order to suggest answers we must ask the sub-questions which are studied in the following order:

1. Which kinds of main qualitative features does the pedagogical systems theory for early childhood education involve?
2. Which kinds of qualitative features does the concept of sustainable development or sustainability involve?
3. What are the pillars of the concept of sustainable development or sustainability?
4. Which kinds of qualitative features do the pillars of the concept of sustainable development or sustainability involve?
5. Which kinds of qualitative features does the education for sustainable development or sustainability involve?
6. Which kinds of qualitative features does the teacher education for sustainable development or sustainability involve?
7. Which kinds of qualitative features does a sustainable future involve?
8. How could the connections among different areas of sustainable qualitative features be modelled?
9. Are there sufficient connections of sustainable qualitative features among different studied areas in order that the pedagogical systems theory for early childhood education is sustainable in itself?
10. Does the concept of sustainability offer sufficient critical criteria for the pedagogical system theory for early childhood education that it can be considered a critical theory?

METHODOLOGICAL BASIS AND METHODS

This study, as well as the previous studies on pedagogical systems theory, is based on an objective- hermeneutic methodology (Õvermann et al., 1979; 1983). That is because it is seen to be quite obvious that educational texts are generated from practical educational reality; the texts also influence back to practice (Härkönen, 1996; 1999; Checkland, 1981). In this study the question is about language, definitions, concepts, meanings and interpretations. Text analyses, logical deduction and induction and argumentation as also models are included in my work. (Rapoport, 1968; Ritchie & Lewis, 2003; Strauss, 1987.) Theories are lingual objects and qualitative entities. In teacher education theories can bring about change in individuals' mind. There is an urgent need for social and individual changes and this could lead to the dominance of a qualitative approach in ESD research (Ely et al., 1991; Salite et al., 2007; Winter & Firth, 2007; Tormey et al., 2008; see Reunamo & Pipere, 2011, p. 111).

The main results are collected from the basis of qualitative features found from the literature of pedagogical systems theory and from the texts about sustainable development or sustainability, both contextualized in teacher education and future orientation. These qualitative features of different question areas are compared with each other in a way similar to cross tabulation. The results are found from the selected texts by interpreting and reasoning and by using matrices devised by me. (Feldman, 1995.) In addition there are now references on sustainability.

Answers to the questions follow the process of creating the theory: what has been already done, what is going on here, and what will be done afterwards.

RESULTS

Qualitative features of the pedagogical systems theory for early childhood education

The next two sections, *Pedagogical, systemic, holistic and historical theory*, and *Finding the extensions and the intensions of the concept of early childhood education*, will suggest answers to the first question of this study: Which kinds of main qualitative features does the pedagogical systems theory for early childhood education involve?

Analysing and seeking the central qualitative features of the pedagogical systems theory will begin from my earlier work on early childhood education from the first phase of creating the theory and continuing through all the subsequent periods (see Härkönen, 2011, pp. 47-65). - I have underlined, **emboldened** and sometimes *italicized* significant words, expressions and phrases. This is because they may involve meaningful connections with previous and later texts.

Pedagogical, systemic, holistic and historical theory

As mentioned above, I have developed a pedagogical systems theory for early childhood education. The creation process has been a long-term process from the beginning of the 80's to now and will continue in the future. The main focus of the pedagogical systems theory is institutional early childhood education and children under the school age of seven, thus including preschool. The place for home education and for influences of the other societal institutions is within the scope of the theory.

It has already been mentioned above that pedagogical systems theory is historical, modern, future-oriented, pedagogical, holistic, systemic and linked with sustainability. Now the theory will be critically reviewed, asking if these qualitative features are really included and if some more qualitative features can be found and added.

Analysing the pedagogical systems theory for early childhood education needs more exact concepts which must be defined, in spite of a large number of definitions, for instance in the following way below. Qualitative features that involve sustainable meanings can be found in definitions, documents and scientific texts.

The word **holism** means *"all, whole, entire, total"*. "The idea is that natural systems (physical, biological, chemical, social, economic, mental, linguistic, etc.) and their properties, should be viewed as wholes, not as collections of parts. This often includes the view that systems somehow function as wholes and that their functioning cannot be fully

understood solely in terms of their component parts." (Holism in science, 2013; Härkönen & Jämsä, 2007, pp. 54–55.)

"A **system** is a set of interacting or interdependent components forming an integrated whole or a set of elements (often called *'components'*) and relationships which are different from relationships of the set or its elements to other elements or sets." --- "A **subsystem** is a set of elements, which is a system itself, and a component of a larger system." --- "A **cultural system** may be defined as the interaction of different elements of culture. While a cultural system is quite different from a social system, sometimes both systems together are referred to as the **socio-cultural system**." --- "An **economic system** is a mechanism (social institution) which deals with the production, distribution and consumption of goods and services in a particular society. The economic system is composed of people, institutions and their relationships to resources, such as the convention of property. It addresses the problems of economics, such as the allocation and scarcity of resources." (System, 2013.) "A **holistic system** is any set (group) of interdependent or temporally interacting parts. *Parts* are generally systems themselves and are composed of other parts, just as systems are generally parts or *holons* of other systems." (Systems thinking, 2013; see also Hopkins, 2006.)

"In the latter half of the 20th century, holism led to **systems thinking** and its derivatives, like the sciences of chaos and complexity."---" Systems in biology, psychology, or sociology are frequently so complex that their behaviour is, or appears, "new" or "emergent": it cannot be deduced from the properties of the elements alone. (Holism in science, 2013.) Systems thinking is a style of thinking and reasoning and problem solving. It starts from the recognition of system properties in a given problem. "Systems thinking techniques may be used to study any kind of system — natural, scientific, engineered, human, or **conceptual**" (Systems thinking, 2013).

Rapoport (1968, pp. 452–453) says that the definition of systems should also consider the *language*, not only the physical systems. He writes (p. 453) that "social scientists speak of economic and political systems; philosophers, about systems of thought."---"In the larger sense, a *language system* may also include the referential world and even the speakers." In accordance with Parsons (1968), the human action has its subsystems, among which one is a cultural system. It comprises the language, communication, beliefs and ideas. Chang-Gen (1990) divides real systems into categories like the natural systems, the social systems and the systems of thinking. (Härkönen, 2009, p. 79.)

"**Systems theory** views the world as a complex system of interconnected parts. A system can be mapped by defining its boundary; this means choosing which entities are inside the system and which are outside – part of the environment. Simplified representations (models) of the system can be made in order to understand it and to predict or impact its future behaviour. These models may define the structure and/or the behaviour of the system." (System, 2013.) "A system comprises multiple views. For man-made systems it may include such views as planning, requirement (analysis), design, implementation, deployment, structure, behaviour, input data, and output data views. A **system model** is required to describe and represent all these multiple views." There are many types of systems that can be analyzed both quantitatively and **qualitatively**. (System, 2013.) Systems theory and systems thinking are connected also to **systems pedagogy** and linked often to constructivism (Gudjons, 2003, pp. 46-47).

For this article the main periods of my research with their focuses and results can be separated from the whole process (Härkönen, 2011). The focus of the first studies was on the <u>historical context</u> of the theories on early childhood education. This phase contained study texts, international articles and text books particularly on the pedagogical theories of Friedrich Froebel (1782–1852), Rudolf Steiner (1861–1925), John Dewey (1859–1952), Maria Montessori (1870–1952), Helen Parkhurst (1887–1973), Célestin Freinet (1896–1966), Vasili Suchomlinsky (1918–1970), Aleksander Sutherland Neill (1883—1973), Loris Malaguzzi (1920–1994) and Paulo Freire (1921–1997) (e.g. Härkönen, 1983; 1991; 1992a; 1992b; 1993; see also Papdopoulou, 2008). A content analysis of different texts was done, and models of the textual results were presented.

 At that time I studied work education in small children's education analyzed through the texts of Froebel, Montessori, Steiner, Dewey and Neill (Härkönen, 1983; 1991; 1993). In order to get clarity about work education all the theories, texts and materials had to be read. In all the texts of these pedagogues work education formed one part of the whole pedagogical theory, and the results might be modelled as one part of a whole pedagogical model (Härkönen, 2004; 2006b). These studies gave me my first insight into the **holistic educational views** and **systems thinking.** They could be found from the above mentioned philosophy-pedagogues' own educational thinking. Later I found and presented the connections of work education to gender equality (Härkönen, 1996; 2007c) and to sustainability (Härkönen, 2004; 2007b; 2011). It has been obvious that historical educational approaches when they emerged were very modern and drew fierce criticism. But because of their qualitative features they still today can act as a construction base **for modern educational views**.

All of these famous pedagogues have their own pedagogical theory with philosophical perspectives and practical pedagogy. In which way are all the parts of the philosophical views and levels connected to each other, or are they separate from each other? What very significant feature did I find from pedagogues' thinking? It is a question of **systems thinking** (marked with black lines in figure 1). (Härkönen, 2003b; 2003c; 2008a; 2008b.) Although the pedagogues themselves had not identified it with this concept, it was noticeable for me in the texts. Systems thinking reveals for instance the following ideas: *because* these main values are important in education, also children's play *is* important; *if* this kind of goal is wanted to be valid it means also that work education must be valid; or in pedagogy there must be *a relationship between* basic activities, play, work, teaching, celebrations and excursions. *All these parts comprise the whole* phenomenon, and so on (examples by my evaluation results). Of course, statements need to be validated by the theories in question.
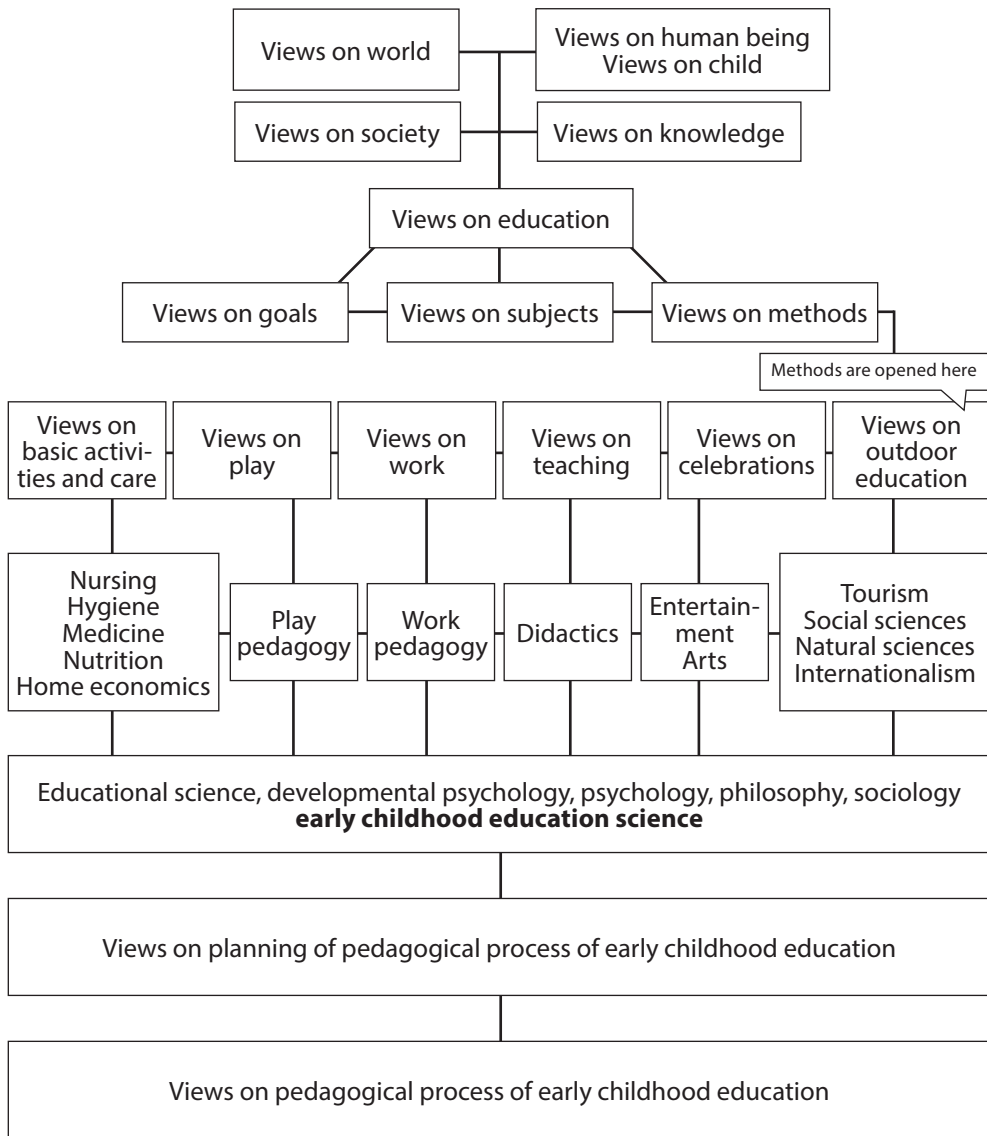
Figure 1. General systems model of early childhood education and preschool thinking. Härkönen Ulla 2013.

During the process of studying the above mentioned historical philosophy-pedagogues I realised that the model construction of all the pedagogues seemed to be similar, although the content of the main categories varied due to their philosophical approach. This means that over long historical periods there have been **the same main categories** of early childhood education theories. This result is meaningful for the further development of the theory (figure 1). It was possible for me to realise the next idea: in education there have been the same main conceptual categories or contexts over time. Every one of the pedagogues has held them to be important, even unavoidable contexts in education. This tells

us about the qualitative features of these main categories: they are **historically sustainable** educational features. However, the content of the main categories has varied and can vary from time to time and with the culture context. This tells us that the contents of the main categories are **historical modifications.** On the basis of the mentioned categories a new model was created (figure 1). This model is a general systems model without the name of any pedagogue. The categories were named on the basis of the central content of the category.

The next idea was also important: because in historical education culture, and also today, the several historical pedagogical ideologies can be found (e.g. Basics of Preschool Curriculum 2010, pp. 50–53), so the content of the categories must be written in the plural form: **views.** This kind of result gives an understanding about the **modern democratic society** in which **many different views**, for instance different theories, live together influencing early childhood education area and each other, too. This tells about **pluralism,** and that pluralistic attitudes are needed. This kind of culture presumes democracy and **tolerance** towards other views. (Flathman, 2005; Härkönen, 2003a; 2003b; 2003c; 2006a; 2006b; 2008a; Katzenstein, 2010.)

In the pedagogical systems theory a **holistic view** of educational theory can be shown. The factors forming it are as follows: the scope of the theory, the wholeness of the model, the clarity and sustainability of the main categories, a variety of different content views, and systems thinking which connects all the elements together in a systemic way.

Inside holistic and systemic views, and also in my systems theory, a **chronological process** is obvious and it is a part of the whole systemic structure. (Härkönen, 2006b; 2007a.) A chronological process and a plurality of views will turn attention to **future thinking**. This means that real, serious challenges are found to be waiting for answers. Pedagogical systems theory and its models may have possibilities to suggest answers. Then one can begin to draw conclusions through theory, the model and its parts in order to find new ideas and see how ideas cause changes in other parts of the model and at the same time in the whole theory. In figure 1 the model in question is illustrated.

Finding the extensions and the intensions of the concept of early childhood education

The second focus of my studies was aimed to the **national context** of the theories from different science, used in early childhood education pedagogy in Finland from the 70's to the early years of 2000. This phase consisted of study texts, articles and Finnish text books on the theories of different disciplines in the area of early childhood education. Naturally, the **international context** with international literature was present in this study problem, too. (Härkönen, 2003a; 2003b; 2006b; 2008a; 2011.)

The results of these studies showed the approximate number of theories, their scientific fields, and also some chronological changes of status of each theory in early childhood pedagogy in Finland. The main result was to see and clarify the position of explicitly **pedagogical theories** in these texts, which diminished at the same time as developmental theories, psychological theories and also social theories appeared and increased. However, the phenomenon in **focus has been, still is and will be education, institutional pedagogy and pedagogical activity in practice**. After such results the main point was to put pedagogical theories of early childhood education to the fore and show

their significance in pedagogy. **The theory must focus on the phenomenon on which it is meant to focus**. (Härkönen, 2008a; 2008b; 2009; 2010; 2011.) These results gave more reasons to delve more deeply into the pedagogical systems theory which is based on historical pedagogical theories, and which is inclusive enough to address several issues at the same time. So, the ideas of **historical** and **pedagogical** principles had shown their necessity and their **sustainable** features.

During this study phase in one extensive study (Härkönen, 2003a) the question was about definitions of early childhood education in Finnish text books. The data was textual, and several slightly varying kinds of definitions of the concept of early childhood education could be found in the collected material. This kind of data is **qualitative**, written **conceptual text.** The definitions and several kinds of text fragments are interpreted by me. Interpretation of the definitions has also been in the minds of those who wrote the texts. Similarly I have tried to find the meanings of the texts and the objects on which they are meant to focus. This kind of process needs interpretation from the writers and the researcher. Interpretation reveals the **diversity of the meanings of concepts;** it reveals also a **subjectivity of language**. But researching texts sufficiently shows that the meanings and principles or constructions within the texts are shared. They can be common to the people who are living in the same era, in the same culture, in the same society, in the same historical process, or who are constructing together the same unknown future. The text will reveal also the **nature of its objectivity**. (Härkönen, 1996; 1999, pp. 149–165; Õvermann et al., 1979; 1983.)

There was a time when I had two types of educational texts: first, historical, extensive and profound international texts on education, some as old as 250 years, and secondly those which are narrow, new and national Finnish educational texts, the oldest of which are only 40 years old. These texts could be compared to each other. Several important results were found from this kind of study process. Historical theories are philosophical, broad descriptions of educational theory. (E.g. Härkönen, 2009.) In contemporary Finnish texts there are many different separate issues, many of which do not fit together. Some of them are fashionable and many have contrasting views to each other. Practical problem solving and also educational thinking trying to develop new views on education require deeper knowledge. **Historical views together with contemporary ones** are able to cover holistically the **core contexts of educational thought** which have been and always are necessary elements in education. The **core values** (Haldane, 2004; Härkönen, 2008b) in educational texts, in practical education and in education culture are found within the core contexts. The question is about education in a **linguistic and in a practical** sense. It has been so also in historically.

In the analysis processes of the texts the following two concepts have proved to be very useful: **extensions and intensions** (Härkönen, since 2003a in several references; figure 2). A concept can have different extensions, areas or dimensions, about which the same concept will be used. The concept has its own intensions on the basis of which the concept is defined and known. If the concept is used in more than one extension area the intensions of all those extensions must be the same. Otherwise the same concept cannot be used in other extensions. (Härkönen, 2003a, pp. 71–73.) Thus, for instance, *preschool* ought to have the same intensions as *early childhood education* if *preschool* is intended to belong within and be considered as *early childhood education*.
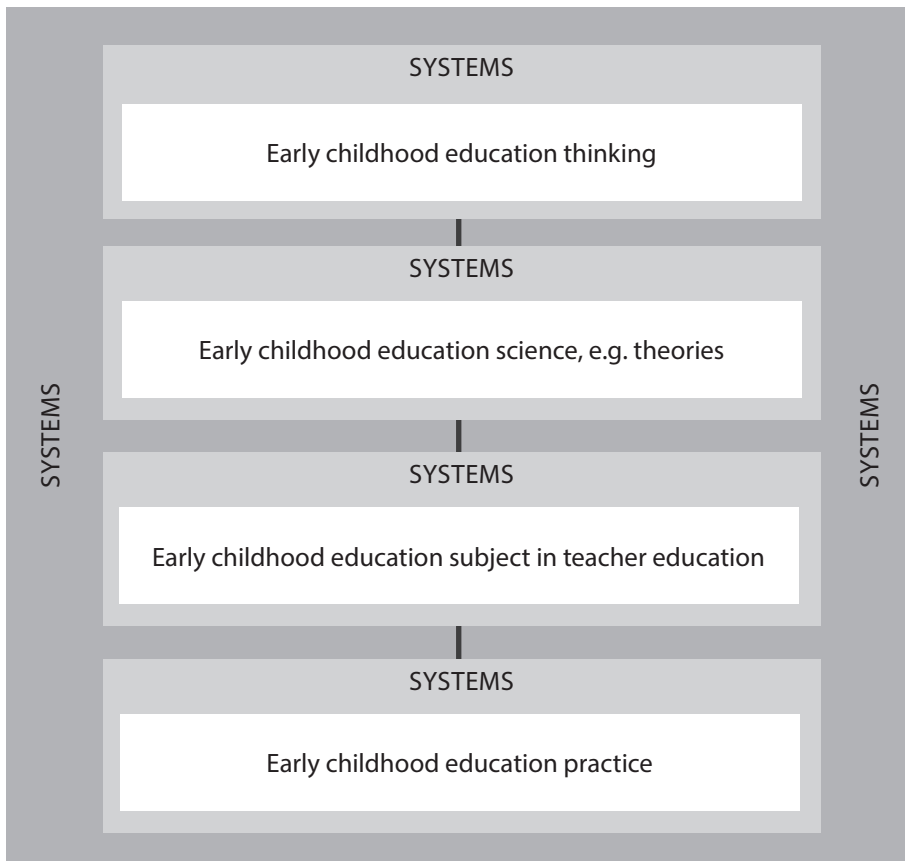
Figure 2. The four extensions of the early childhood education concept as a systems model. Härkönen Ulla 2013.

If the intensions of the concept of the preschool are nearer the intensions of basic school education, preschool begins to mean the basic school education, also in practice. It is noticeable that by changing the intensions, which mean the contents of the concept, also the extensions, which mean areas of the concept, can gradually alter in education culture. These kinds of modifications have and also are occurring, sometimes unconsciously. The consequences may have also negative impacts in society.

In Finnish early childhood education literature from the 70's to now the concept 'early childhood education' has changed in its extensions and intensions. (Härkönen, 2003a.) At the beginning it had one extension: early childhood education practice, but soon in addition to that one more: early childhood education science. In the 80's one extension more was found in the literature: early childhood education subject (in teacher education). I demonstrated at the beginning of 2000 the existence of a fourth extension: early childhood education thinking, which is in society and culture together. From this extension, for instance, laws, statutes and curricula arise. The four mentioned extensions exist in reality and can work also in our minds in a systemic way as systems of their own. This way of thinking shows how, for instance, early childhood education practice acts in connection

with all the other three extensions, not separate from them. (Figure 2.) Language analysis and the linguistic theories of the concepts have revealed both subjective interpretation but also a social objectivity (Härkönen, 1996; 1999, pp. 149–165; Õvermann et al., 1979; 1983). This gives a sustainable structure and clarity to educational texts and thinking. It also means possibilities to find sustainable features for education and adds to the reliability and credibility of basic ideas in education (Patton, 2002, p. 546).

Qualitative features of the concept of sustainable development or sustainability

The answers to the second question of the study are presented in this section: Which kinds of qualitative features does the concept of sustainable development or sustainability involve?

As is observed in the Introduction of the author's background and contexts for systems thinking, I have participated in the international project group of teacher education for sustainability from 2002, established in Latvia at the Daugavpils University. This project, JTEFS/BBCC, acts under UNESCO's main project and has been active during the sustainable development decade. During the ten years from 2002 to 2012 **sustainable development, sustainable education, sustainable teacher education and sustainable future** have been the focus of the conferences and research work. The main question area has stimulated a number of researchers' work: how the concept of sustainability could penetrate teacher education in all the fields of sciences and in all the subjects, not only in the natural sciences and in environmental subjects. The concept of **sustainability** is now the main criterion in several problem solving tasks. The worldwide challenges gave me wider views to the global context in its strict meaning.

These questions are not easy and there have not been many available texts about **teacher education for sustainability, and very few about kindergarten teacher education for sustainability,** which deals with the basic issues and learning experiences interwoven into the very beginning of person's life. However and more generally, during these years the work done on sustainability has been creative and trail blazing for a new way of thinking. The main question has focused on teacher education, on all kinds of teacher education in whatever subjects and science areas and at all ages of children. In many studies the main concept of **sustainability, and in addition, systems thinking and a holistic way of thinking** have been presented for instance in publications of the project. (E.g. Versita, 2013; ISE page of publications, 2013.)

My task has been **to create a new theory for early childhood and preschool education and then to point out its connections to sustainability**. The origin of the theory was already in the 80's as remarked earlier. Systems thinking and the drafts for the models were formulated especially during the 90's (Härkönen, 1983; 1991; 1992a; 1992b; 1993; 1995; 1996) and later in many presentations and in publications. (E.g. Härkönen, 2002b; 2003c; 2003d; 2004; 2006a; 2007a; 2007b; 2009; 2011.) Particularly, because of a presentation on the topic of gender which was dealt with the systems thinking in early childhood education in Belgium in 2002, I was invited to the JTEFS/BBCC project. (Härkönen, 2002b.) The pedagogical systems theory, systems thinking and the ways to design models about the different topics were developed, but the questions why and for what reason to plan a new theory in that way were all the time in my mind. The concepts of sustainable development

and sustainability gave reasonable, rational, logical and sensible challenges and answers. The concepts of sustainable development and sustainability have demanded special familiarity in applying them to education, to teacher education areas and to early childhood education and finally to the pedagogical systems theory. This work can be separated from the whole development process of the pedagogical systems theory.

In order to find answers to the research questions concerning sustainable development and sustainability defining some of the main concepts is needed. There are long scientific and non-scientific processes full of different definitions derived from many kinds of approaches. Only a few definitions will be used in this article.

In 1987, the United Nations released the Brundtland Report, which included what is now one of the most widely recognised definitions of sustainable development: "**Sustainable development** is development that meets the **needs of the present** without compromising the ability of **future generations** to meet their own needs" (Dréo, 2006). Sustainable development is described by the United Nations Economic Commission for Europe (UNECE) Strategy for Education for Sustainable Development as being "underpinned by an **ethic of solidarity, equality and mutual respect among people, countries, cultures and generations**; it is development in **harmony with nature…"** This definition is consistent with the former one. (Learning for the future ..., 2011, p. 2; see also Education on the path to sustainability ...., 2012, p. 17.) Literally, sustainable development refers to maintaining development over time (Elliott, 2006, p. 9). By the early 1990s, it was suggested that there were more than 70 definitions of sustainable development in circulation (see Sustainable development. Kuvat aiheesta ..., 2013). Evidently, different disciplines have influenced and contributed to the sustainable debate. (Elliott, 2006, p. 9.) I want to point out especially one dimension in Elliot's book (pp. 140–188): it is about **sustainable rural livelihood**. Agriculture has a multifunctional role for sustainable development (Elliot, 2006, p. 141).

The concept **sustainability** has been used as a synonym for the concept of sustainable development (Sustainable development, 2013) but can, according to Sterling (2003, p. 5), be perceived as a catch-all to include also the terms 'sustainability education', 'environmental education', 'education for sustainable development', 'education for sustainability' and 'education for sustainable future' (see Jämsä, 2006, p. 12). In this article they are used synonymously.

The pillars of the concept of sustainable development or sustainability

Here are the answers to the third question of the study: What are the pillars of the concept of sustainable development or sustainability?

Sustainable development or sustainability has been divided into parts in several different ways, which are conceived as parts, pillars, circles, concept areas, schemes, realms. One way to divide them is in the following source in which environment, economic and social scheme are shown in the file of sustainable development (Dréo, 2006). In the document Education on the path to sustainability ... (2012, p. 17) it is said that s**ustainability** is bound up with a large number of requirements. They must include a good life **for all human beings**, then **ecological, economic and socio-cultural objectives must be integrated**, the **value judgements** needed for goal-setting and problem-solving must be arrived at **in a participative fashion** in a **dialogue** involving **all of society**, and a **global** as well as a **long-term perspective** must be taken account.

In my view sustainability can also illustrate the inner and general meanings of the concepts of different schemes or circles or pillars or parts of the concept of sustainable development or sustainability. Circles of **sustainability** are illustrated prominently for instance in the net. In very many figures the concept of environment is meant. Sometimes environment is changed to the concept of ecology. There are four concept areas in one source: **economics, ecology, politics and culture** (Circles of Sustainability, 2013). This definition is not quite clear with education, but for instance **organizations, communication, dialogue and ethics** belong there under the concept of politics, and **beliefs and meaning, gender and generations, health and wellbeing and learning** belong under the concept of culture. In some other models the concept politics is put in the place of the concept of society. One clear scheme can be found in the source (Travelplanner, 2008), in which there are three circles: **ecology, economy and society.** The fourth circle, **environment,** is put to the background. In this article the above mentioned three circles are taken into account (see also figure 3). According to Education on the path to sustainability ... (2012, p. 17) the next pillars are used in this article: **socio-cultural sustainability, ecological sustainability, and economic sustainability** (see figure 3).

Qualitative features of the pillars of the concept of sustainable development or sustainability

Answers are suggested here for the fourth question: Which kinds of qualitative features do the pillars of the concept of sustainable development or sustainability involve? The pillars here are chosen as follows: socio-cultural sustainability, ecological sustainability, and economic sustainability.

There cannot be found a definition specifically for the concept of **socio-cultural sustainability**, although cultural sustainability is placed in many texts inside societal sustainability. The work by Hutchins and Sutherland (2008) An exploration of measures of social sustainability and their application to supply chain decisions speaks about **sustainability and corporate social responsibility.** The definition of corporate social responsibility (CSR) often advocates **ethical behaviour** with respect to these systems. As more corporations commit to sustainability and CSR policies, there is increasing pressure to consider social impacts throughout the supply chain.

The Network of Excellence "Sustainable development in a diverse world" (2006), sponsored by the European Union, integrates multidisciplinary capacities and interprets cultural diversity as a key element of a new strategy for sustainable development. **Cultural diversity** (2013) **is the quality** of diverse or different cultures, as opposed to monoculture, as in global monoculture, or a homogenization of cultures, akin to cultural decay. The phrase cultural diversity can also refer to having different cultures **respect each other's differences**. The phrase "cultural diversity" is also sometimes used to mean the **variety of human societies or cultures in a specific region**, or in the world as a whole. The **culturally destructive process of globalization is often said to have a negative effect on the world's cultural diversity.** (See also Tolonen, Palmu, Lappalainen & Kurki, 2012.)

The Circles of Sustainability approach defines the **cultural domain as practices, discourses, and material expressions**, which, over time, express continuities and discontinuities of social meaning. However, culture falls within the social/socio-political dimension of sustainability, and therefore the proposal for adding a fourth "cultural" dimension has not been widely accepted. (Sustainable development, 2013.)

Severe problems arise while trying to find definitions about the chosen three concept areas. Several topics linked with **ecological sustainability** indicate **biological and environmental** perspectives, etc. There are for instance contrasting approaches between old and newer theories on that kind of sustainability. Bowers' (2000) article studies how **computers affect education**, **cultural diversity, and the prospects of ecological sustainability**. This is a double-edged sword: "The apparent gains in efficiency, like other seemingly benevolent technical changes, have a shadow side that those who promote the benefits of computer technology largely ignore." In my mind this was enough to find context for the concept of ecological sustainability. My conclusion is the features of sustainable development or sustainability should be applied more to the ecological domain.

Trying to find a clear definition of the concept of **economic sustainability** also meets difficulties. Articles with economic issues were not easy to find. But one article was a stimulating discovery, Human Development and Economic Sustainability, by Anand and Sen (2000). It discusses how humans link with sustainable development. They write in the abstract: "This paper attempts to integrate the concern for **human development** in the present with that in the future. In arguing for sustainable human development, it appeals to the notion of ethical "universalism"—an elementary demand for impartiality of claims—applied within and between generations. Economic sustainability is often seen as a matter of intergenerational equity, but the specification of what is to be sustained is not always straightforward. The addendum explores the relationship between distributional equity, sustainable development, optimal growth, and pure time preference."

The another article by Li and Löfgren (2000) argues that earlier there had been "an increasing interest in the study of **economic sustainability and its relationship with natural resources**". Their paper attempts "to shed some light on the issue by taking into account the individual variations in time preferences for **consumption and resource amenity**". The welfare implications of the optimal path are also discussed.

Dividing these three or four pillars of the concept of sustainability may not be quite useful in this study. The main concept is sustainability, and it has been suggested that sustainability can be applied not only to those three or four areas but also to any kind of topic of life. A very important summarizing is in Hutchins and Sutherland (2008): "Sustainability recognizes the **interdependence of ecological, social, and economic systems** – the **three pillars of sustainability**." This idea also is in line with systems thinking.

Qualitative features of education for sustainable development or sustainability

This section offers some answers to the fifth question of the study: Which kinds of qualitative features does the education for sustainable development or sustainability involve? Educational theories belong to the education sector which belongs to the socio-cultural area, which, with systems and holistic thinking, has connections to all the other sustainable areas and at the same time to sustainable development.

Chapter 36 of Agenda 21 was the first document to describe the concept of **education for sustainable development (ESD).** This section identified four major thrusts to begin the work of ESD: (1) improve basic education, (2) reorient existing education to address sustainable development, (3) develop public understanding and awareness, and (4) provide training for all sectors of society including business, industry, and govern-

ment. (Guidelines and recommendations ..., 2005.) According to Education on the Path to Sustainability (2012, p. 17) education for sustainable development essentially means **integrating the idea of sustainability and the goals of sustainable development in the education system**. --- the conceptualisation of sustainability has to be based on that of the United Nations and its accompanying requirements. This leads to the **distinction between** education for sustainable development and, for example, global learning, environmental education or political education. Certainly, what education for sustainable development does **not** mean is for instance the question of how to create learning processes so that the learning outcomes are lasting." I understand the latter utterance to mean that if learning outcomes do not involve sustainable features they are not worth lasting. Learning outcomes ought to involve sustainable features, and also in that case always learning new sustainable things is needed. I suppose this interpretation will be in line with what is said below by United Nations.

The United Nations has defined major key **education action** areas and themes or thrusts for education for sustainable development (SD Features, 2013):

"Access to basic education remains a problem for many, especially girls and illiterate adults. The quality of basic education must improve to focus on imparting knowledge, skills, values and perspectives throughout a lifetime that encourage and support citizens to lead sustainable lives.

1. Reorienting existing education programmes: Rethinking and revising education from **nursery school through university** to include more **principles, knowledge, skills, perspectives and** values related to sustainability in each of the three realms: **social, environmental, and economic**, important to our current and future societies. This should be done in a **holistic and interdisciplinary** manner. The best chance of success of education for sustainable development lies not in a separate programme but in embedding its vision within other initiatives.

2. Developing **public awareness** and understanding of sustainability: To make progress towards more sustainable societies requires a population that is aware of the goals of sustainability and has the knowledge and the skills to contribute towards those goals. An informed citizenry and knowledgeable consumers can help communities and governments enact sustainability measures and move towards more sustainable societies.

3. Training: All sectors of the workforce can contribute to **local, regional and national** sustainability. The development of specialized training programmes to ensure that all sectors of the workforce have the knowledge and skills necessary to perform their **work in a sustainable manner**, has been identified as a **critical component** of education for sustainable development."

From the same reference, SD Features (2013), some examples are quoted here. It is argued there that "several key themes are critical priorities for planning programmes and activities while elaborating the implementation scheme". One important area mentioned in the UN programme is gender equality: "The pursuit of **gender equality** is central to sustainable development where each member of society respects others and plays a role in which they can fulfil their potential. The broader goal of gender equality is a societal goal to

which education, along with all other social institutions, must contribute. Discrimination based on sex is often structurally embedded. In many societies women bear the major burden of responsibility for food production and child-rearing, they are excluded from family and community decisions affecting them, and they have little or no access to the means of income generation. Gender issues must therefore be mainstreamed throughout educational planning --- from infrastructure planning to material development to pedagogical processes. The full and equal engagement of women is crucial to ensuring a sustainable future."

The above mentioned reference (SD Features, 2013) deals with **culture**: "Cultural Diversity: Our rich diversity . . . is our collective strength" (Johannesburg Declaration, 2002). Education must respect diversity. The **values, diversity, knowledge, languages and worldviews** associated with culture, predetermine the way issues of education for sustainable development, are dealt with in **specific national contexts**. ESD aims at promoting teaching which respects **indigenous and traditional knowledge**, and encourages the use of indigenous languages in education and the integration of worldviews and perspectives on sustainability into education programmes at all levels. The **preservation of cultures is linked to economic development**. Cultures must be respected as the living and dynamic contexts within which human beings find their values and identity." (See also Haldane, 2004.)

> **"Peace and security** *are fundamental to human dignity and development. The sustainable development of any culture is always endangered by a situation of insecurity and conflict. These result in significant human tragedies, overwhelming health systems, destroying homes, schools and often whole communities, and leading to increasing numbers of displaced people and refugees. Education for sustainable development plays a key role in promoting* **values for peace**." (SD Features, 2013.)

The Johannesburg Declaration (2002, p. 10) also speaks about **diversity** as well as many central features connected to sustainability. "Sustainable diversity is a critical requirement for **intangible development**, and without intangible development there can be no sustainable development. In spite of many efforts to envision development in a **holistic manner**, and to see people, **values** and social capital as an integral part of development, there remains a powerful tendency to define and measure development..."---"... our ideas for sustainable development must tap both **diversity and dialogue** on a global basis."---"The central idea for organizing such an approach is the idea of **sustainable diversity**."---"**Cultural diversity** may be defined as a principle for organizing sustainable **cultural plurality**, both within and across societies."---"Sustainability may be defined as a criterion..."---"UNESCO should insist that sustainability from the point of view of plurality cannot be divorced from sustainability in regard to economic development. This approach to sustainability recognizes that **collective human action** requires both **planning and motivation**, and that collective motivation can only spring from cultures as integrated frameworks **of meaning, belief, knowledge and value.** In short, **sustainability is indivisible in its multiple dimensions (aesthetic, economic, political, etc**)."---"**angible heritage** is a form of congealed **cultural value**, and insofar as all communities possess ideas about cultural value, cultural diversity also enhances tangible heritage."

Qualitative features of the teacher education for sustainable development or sustainability

I turn now to the sixth question of the study: Which kinds of qualitative features does the teacher education for sustainable development or sustainability involve?

UNESCO has published the Guidelines and recommendations for **reorienting teacher education to address sustainability** (2005). In the recommendations on ministerial and national involvement it is said (p. 34) for instance that the ministries ought to "work with national publishers and textbook committees **to infuse sustainability into textbooks at all levels**." In the recommendations on community and **regional/provincial involvement** (p. 36), it is hoped that (p. 37) it is important to "establish regional teacher-education groups to develop sustainability-related modules and relevant literature, which should be made available on a regional scale." In the recommendations on change within institutions of higher education (p. 39) it is said that "**interdisciplinary courses** in sustainability to fulfil degree requirements **across disciplinary faculties**" ought to be established. Also "student groups and organizations" ought to engage in activity to reorient to sustainability. In recommendations to the faculties it is said (p. 41) that it educational opportunities ought to be provided to "ensure that every **member of the faculty of education understands the need for ESD**, how it is relevant to teacher education in both improving **quality basic education** and **reorienting existing** education, and how each faculty member can contribute to the overall effort." It is also recommended (p. 44) that we ought to "**demonstrate pedagogical techniques** that foster higher-order thinking skills, support decision-making, involve participatory learning, and stimulate the formulation of questions." We ought to (p. 44) "discuss **social equity (e.g., gender, racial, ethnic, and generational)** with student teachers and identify ways in which the local community **exhibits social tolerance, societal intolerance, equity, and discrimination.**" We ought (p. 44) to "request that student teachers **analyze the mandated curriculum** they will be teaching to identify topics and themes **related to sustainability** and those that are **linked to local sustainability issues.**" It can be concluded (UNESCO, 2009; see Reunamo & Pipere, 2011, p. 111) that learning to influence systems and participate in decision making are, moreover, globally-recognized goals of education for sustainable development (ESD).

Pressoir (2008, p. 61) asks how educators and teachers could work on the topics of sustainable education or sustainability. She suggests a methodology such as a problem-solving approach in ECE (preschool projects), contents such as environmental issues and rules, and promoting values (human and children's rights) and attitudes, and strategies such as children's and parents and teachers' interactions related to these issues. Pressoir (2008, 61) also reminds that "in order to accelerate the changes, ECE/ESD should be part of a broader change in the entire educational system: this is in line with the United Nations Decade of Education for Sustainable Development (2005—2014)."

Qualitative features of the sustainable future

I now offer some short notes for the seventh question of the study: Which kinds of qualitative features does a sustainable future involve?

Envisioning change to a **sustainable future** covers competences relating to three dimensions of (Learning to the future ..., 2011, pp. 9–10): **learning from the past**, **inspiring**

engagement in the present and **exploring alternative futures**. The process towards future "draws upon **scientific evidence**, uncovers **current beliefs** and a**ssumptions** that underlie **our choices** and **encourages creative thinking** about a **wide range of possibilities**."--- "Education for sustainable development (ESD) should emphasize approaches that are intended to **lead to positive futures for people and nature**, rather than those that simply do less harm." ---"**Achieving transformation** covers competences at three levels: **transformations of the educators**, **transformation of pedagogy** which means **approaches to teaching and learning**, and **transformation of the education system as a whole**." ---"... change is needed to ensure that the system **provides education that predisposes learners to consider sustainability across their life choices**." This **cannot be happen alone**. We need "**critical competences** such as **understanding the need for transformation**, and **openness to change** and a range of collaborative skills."

Modelling the connections among different areas of sustainable qualitative features

This section elucidates the answer to the eight question of the study: How could the connections among different areas of sustainable qualitative features be modelled? In practice this question deals with all the ten research questions of the study. Below is an illustration prepared by me to show how the mentioned areas are connected to each other due to their sustainable qualitative features.

To repeat in greater detail: What kinds of connections do the pedagogical systems theory for early childhood education, and qualitative features of the concept of sustainable development or sustainability, and the qualitative features of the pillars, and qualitative features of education for sustainable development or sustainability, and qualitative features of teacher education for sustainable development or sustainability, and qualitative features of sustainable future involve? Do these possible connections make the pedagogical systems theory for early childhood education a sustainable theory in itself?

In summary: Especially and eventually, my interest here focuses on the connections among the pedagogical systems theory (PST) for early childhood education (ECE) and sustainable development (SD) or sustainability (S) in a teacher education context. Figure 3 shows the arranged order of the areas at issue.

Figure 3 can work as a model of all the processes and question areas in which qualitative answers can be formed. It can be seen that the aim with the mentioned theory is to test it all the time in order to develop it further.
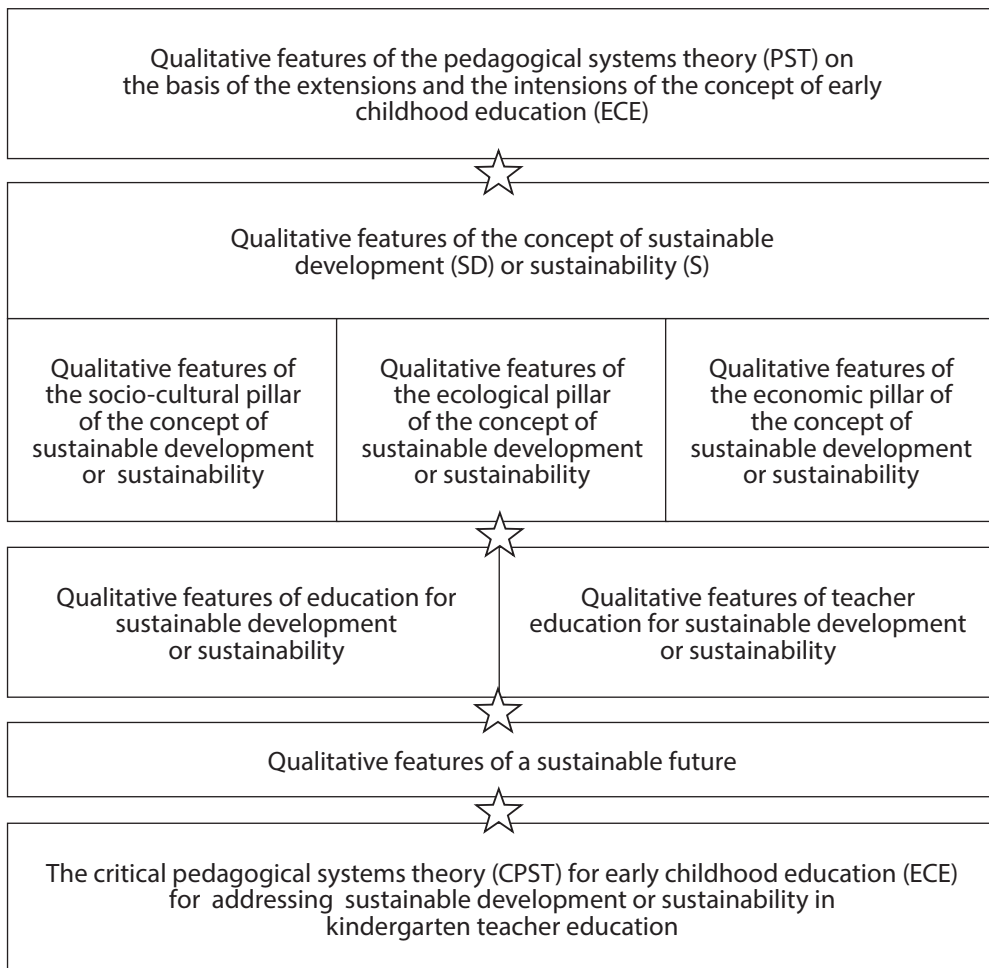
Figure 3. Connections among the pedagogical systems theory for early childhood education (PST for ECE) and the qualitative features of the concept of sustainable development (SD) or sustainability (S). Härkönen Ulla 2013.

The sustainable qualitative features and the pedagogical systems theory of early childhood education

I have created the new pedagogical systems theory for early childhood and preschool education. I have aimed to analyze which kinds of qualitative features of sustainable development or sustainability the pedagogical systems theory for early childhood and preschool education involve in order to act for sustainable teacher education and for a sustainable future (figure 3).

This section deals with the ninth questions of this study: Are there sufficient connections of sustainable qualitative features among different studied areas in order that the pedagogical systems theory for early childhood education is sustainable in itself?

At the beginning of the study I wrote an introduction about my own historical background from my childhood through my own education, schooling, own student years,

and through periods of creating the new systems theory. I found nearly the same living, studying and productive contexts and qualitative features from all the important periods of my life. Those contexts and qualitative features can be said to be some kinds of dimensions of my life and my professional content and development. It was almost a miracle for me to notice how the enthusiasms of childhood have grown so straight into the content of my adulthood and professional career.

The connections between the contexts of my early background and the contexts of the pedagogical systems theory can be categorized for instance in the following way: historical, modern and future-oriented contexts, national and international contexts, local and global or worldwide contexts, nature and society and culture contexts, practical and scientific (academic) contexts, holistic and systemic and detailed thinking contexts, human being and children contexts, practical and theoretical (academic) educational contexts, educational pedagogical contexts with psychological, artistic, societal and political, natural, mathematical and language contexts. All this culminates in early childhood education science. Work, gender, and creating the new whole theory for early childhood education, have been central in my later research work with the emerging principles of systems thinking and sustainable views.

Special qualitative features of the pedagogical systems theory have been as follows: historical, holistic, systemic, pedagogic, qualitative, conceptual, linguistic, interpretative, semiotic, meaning-carrying, pluralistic, diverse, democratic, tolerant, chronologic, modern, future-oriented, modifying and sustainable. The theory has a theoretical and a practical side, subjective and objective meanings, and conceptual extensions and intensions. Some of these qualitative features have connections to the above-mentioned contexts and some of these have connections to the concepts of sustainable development or sustainability and to sustainable teacher education and to a sustainable future.

The concepts and phrases of sustainable development, sustainability, education for sustainable development, and sustainable teacher education are now presented more fully in connection with the pedagogical systems theory. These concepts can work as necessary criticism for the theory to provide better answers to today's pedagogical recession as a science and in practice, and in aiming to today's and the future quality for sustainability.

Speaking about sustainable development and sustainability includes the needs of the present, the needs of future generations, ethics, solidarity, equality, mutual respect, harmony with nature, sustainable livelihood, integration, value judgement, participative ways of life, dialogue, the whole of society, all people, global, and long-term perspectives.

The pillars or circles of the concept of sustainable development or sustainability proved to act as application areas for the above mentioned head concepts. The sociocultural pillar is the main circle for education, and naturally for teacher education and its different contents such as theories and curricula. Ecological subjects can be easily situated within pedagogical systems theory, but no pillars ought to be separated from the whole system. Circles need integration in order to speak about sustainable development. The economic pillar is seldom connected to education texts, or such texts to the economic pillar. In any case, education and teacher education have, and also theories may have, great economic impact.

In the texts dealing with the pillars or circles of the concept of sustainable development or sustainability, the pillars incorporate social responsibility, ethical behaviour,

cultural diversity, equality, respect for each other's differences, variety of human societies or cultures, and sustainable relationship between economic sustainability and natural resources. When speaking about computers' effect on education also cultural diversity and the prospect of ecological sustainability must be taken account. All the pillars or circles should be integrated in a holistic and interdisciplinary manner. The areas of these pillars or circles must have connections with all the others under scrutiny.

Education for sustainable development or sustainability means integrating the idea of sustainability and the goals of sustainable development in the education system. Rethinking and revising must be done from nursery school through university, involving principles, knowledge, skills, perspectives and values. Public awareness, local, regional and national sectors are needed. The critical component in education must work toward sustainability. The pursuit of gender equality is a central task. Cultural diversity, values, knowledge, language and worldviews must be associated with culture in national contexts. Indigenous and traditional knowledge, peace and security are important. Preservation of cultures is linked to economic development. Diversity and dialogue, cultural plurality, intangible and tangible heritage must be respected in a holistic and sustainable manner. Plurality needs collective human action, planning and motivation. Sustainability is indivisible in its multiple dimensions. Here are numerous qualitative features which have connections to the pedagogical systems theory and also to the next area, to sustainable teacher education.

Teacher education must be reoriented to address sustainability, which means publishers, textbook committees at all levels and curricula. I have been astonished that nothing has been said about the significance of theories, but of course theories are inside the curricula, textbooks and publications. Reorienting to address sustainability in teacher education requires regional and provincial involvement, interdisciplinary courses, faculties and their members who understand these things, and pedagogical techniques. Social equity - like gender, racial, ethnic, and generational equity - is a valuable attitude, and discrimination and intolerance must be exposed and corrected. Students ought to learn to discuss these kinds of issues. These values and activities have again connections to the above areas and also to the next one, the future.

Envisioning change for a sustainable future covers learning from the past, inspiring engagement in the present and exploring alternative futures. This needs scientific, creative, critical, open and positive thinking, which then open a wide range of possibilities. Education ought to encourage learners to consider sustainability and understanding the need for transformation and collaborative work.

In summary, there can be found so many connections and shared sustainable qualitative features among the pedagogical systems theory and all the other studied areas that the answer to the ninth study question is: there are sufficient connections and sustainable qualitative features that the pedagogical systems theory for early childhood education is sustainable in itself.

Critical criteria of the pedagogical system theory for early childhood education

This section will answer the tenth question: Does the concept of sustainability offer sufficient critical criteria for the pedagogical system theory for early childhood education that it can be considered a critical theory?

In a longer form the question could be: Does the concept of sustainability offer critical criteria for the pedagogical system theory for early childhood education to address the shortcomings of today's pedagogy and future challenges of sustainable development or sustainability? These questions are many sided and involve answers to all the other questions. This section can include also the conclusion and discussion of the study.

The pedagogical systems theory in itself has connections to the concepts of sustainable development, sustainability, sustainable education, sustainable teacher education and a sustainable future. The connection lies especially in sustainable teacher education while speaking about educational theory. I have intended to define the main concepts linked with sustainability only in a general way, because the main idea of the theory's sustainability lies in its intensions and their context. This means for instance in play, in basic activities, in good planning of education, in values and in ideologies and so on (see the figure 1). But the general connections of the theory to sustainability are found and shown in this article.

> "**Critical theory** *is a school of thought that stresses the reflective assessment and critique of society and culture by applying knowledge from the social sciences and the humanities. As a term, critical theory has two meanings with different origins and histories: the first originated in sociology and the second originated in literary criticism ---." "---the theorist Max Horkheimer described a theory as critical insofar as it seeks "to liberate human beings from the circumstances that enslave them."" --- "Martin Jay has stated that the first generation of critical theory is best understood as not promoting a specific philosophical agenda or a specific ideology, but as "a gadfly of other systems". ---"The two meanings of critical theory — from different intellectual traditions associated with the meaning of* **criticism and critique**—*derive ultimately from the Greek word kritikos meaning judgment or discernment, and in their present forms go back to the 18th century."---"* **Critical social theory** *is --- a form of self-reflective knowledge involving both understanding and theoretical explanation to reduce entrapment in systems of domination or dependence, obeying the emancipatory interest in expanding the scope of autonomy and reducing the scope of domination."---"* **Critical theory in literature** *and the humanities in general does not necessarily involve a normative dimension, whereas critical social theory does, either through criticizing society from some general theory of values, norms, or "oughts," or through criticizing it in terms of its own espoused values."* (Critical theory, From Wikipedia, 2013.)

Within the concept of sustainable development or sustainability numerous concepts, such as critical component, critical thinking, critical competences, openness to change, and transformations of the educators and transformation of the education systems as a whole **refer to critics, change and transformations**. The pedagogical system theory can act as a good way of planning education practice, teacher education, and curricula in society and culture. For assessing these things the systems theory is a very suitable scheme. The same scheme can act as a basis for planning new transformed curricula or any other new plan. This means that intensions of the extensions can be planned along sustainable values while extensions are stable because they are mentioned to be sustainable.

As illustrated in figure 2, the extensions of the concept of early childhood education are as follows: early childhood education practice, early childhood education subject (in kindergarten teacher education), early childhood education science, and early childhood

education thinking (in society and culture). In the extension area of practice the pedagogical system theory in itself, as a whole and in its details, has numerous sustainable qualitative features to criticize and change early childhood education practice to act in a sustainable way. This kind of pedagogical systems theory offers possibilities to carry features which can fulfil criteria of sustainable teacher education. This theory of education forms a holistic way of thinking. It offers a cultural learning environment, because student teachers can learn the holistic and diverse models about education and planning possibilities. The holistic and systemic nature of the theory will be highlighted, and these features help us to understand the multiple dimensions of early education in relation to the practice of education. These features enhance the processes of learning, socialisation and cultural development in occupational education. The integration of the pedagogical systems theory in education at large will at best save time and effort to avoid such problems as theoretical confusion and a lack of motivation and skills. The theory can stimulate critical and creative thinking and develop towards multiple transformed perspectives. (Patton, 2002, pp. 546, 548–549.) The theory can change educational scientific thinking and research. This theory has already been applied in numerous research topics supervised by me. Student teachers have been very enthusiastic about its impacts. The theory can influence all the extensions and intensions of the concept of early childhood education. The new pedagogical systems theory will act in a sustainable way as a basis for pedagogical practice, in science itself, in curricula and in teaching kindergarten teacher education, and in general thinking in education culture and shared culture throughout society.

The problems of modern and future society may be so complicated and challenging that they cannot be solved without systems thinking. Especially in teacher education the theory of the main focus – education – is significant; it can have a social usefulness. It has a possibility to involve sustainable views and models for the teachers' and children's own development, for today's pedagogy, and for the future.

In summary, it can be said that the pedagogical systems theory for early childhood education has sufficient qualitative features to change, address and transform kindergarten teacher education towards sustainability. The pedagogical systems theory for early childhood education will be a sustainable critical theory. Demanding sustainability and **critical features** for a theory makes it still more complex entity (Patton, 2002, pp. 119–123).

VALIDITY AND RELIABILITY

In this kind of study in which the question is of language, definitions, concepts, meanings and interpretations, it is possible that the credibility of the results can questioned. But language and interpretations are not errors in themselves; they are always connected. Concepts and definitions and basic knowledge are based on international documents and reviewed scientific texts. The fact is that the issues are large and concepts have a great number of definitions and things have a long history. In addition concepts and reasoning within these kinds of topics are on an abstract level. These phenomena can make the meaning of concepts ambiguous and subjective. Ambiguous meanings can make it difficult to control the study. It is also important to notice when the text is written by one or more persons and when it is the product, for instance, of an official international organiza-

tion. The texts of dissertations, scientific books and papers are controlled, presented and published in scientific journals and similar contexts.

I have been conscious of these kinds of problems and have been constantly striving to avoid consequent errors. I have also done this kind of textual and content analyses in many studies.

As to the subjectivity and objectivity of the texts, methodologically I represent the approach under which there are also an objective reality and objective meanings within the texts and concepts, and objective meanings are filtered into the referential texts. Especially high level academic texts like those of UNESCO and international academic books must have a high level of credibility. It is recommended that the reader seek the possibility to understand how the analysis was done, especially in qualitative studies. In this text the significant words and phrases are emboldened so that the reader might follow what I have assessed to be important. (Ely, Anzul, Friedman & McCormack Steinmetz, 1991, pp. 93–99.)

In my mind, the fact that many-sided question areas of this study can be arranged clearly in relation to each other after content analyses will add to and also prove the credibility of the results. (Patton, 2002.)

CONTINUING RESEARCH

Continuing research could focus on an issue and criterion that have here been left aside, for instance residual questions especially about economic connections to pedagogical systems theory. This question may be a difficult issue at least in official documents, in educational dissertations and in other studies, at least in qualitative research. Here some logical reasoning is suggested about the cause and effect: if it is a holistic and systems-based, well-focused theory in use in teacher education, it can be reasoned that the effects are good and learning can happen in a shorter time without confusion and the need for relearning. This is in my opinion a real economic saving but at the same time a sustainable way to educate a new generation of teachers. This question is a useful topic for continuing research.

Continuing research could focus more exactly on the intensions of the concept of early childhood education and through it on the pedagogical systems theory. This is a very important area, because these elements carry possibilities for either a healthy, sustainable education or an unhealthy, unsustainable education. These knowledge areas have also formed the basis for the systems theory. These intensions are seen in figure 1 inside the oval circles. These intensions can be treated as extensions and their own intensions can be found by studying their qualitative features. The great number of the increasingly exact views of the contents would be found with this method. One example is children's play, play pedagogy, theories on play, and so on. It is obvious that these issues have countless numbers of connections to the question of sustainability.

In this study the general term has been sustainability. But it has a contrary, non-sustainability. In education, in teacher education and in theories, recognition of non-sustainable features is as important as that of sustainable features. In future, seeking the sustainable and also unsustainable connections among the pedagogical systems theory,

extensions and intensions, and sustainable development or sustainability (figure 1 and figure 3) offers endless topics for research. The question about change and transforming may lie among sustainability and non-sustainability. It is not sustainable attitude to be too naive.

Understanding the value of values will be sine qua non. In my mind *values* are the elements that could tell much about sustainability or non-sustainability. This theory and process of creation has the potential to reveal new theoretical constructs and practical applications now and in the future.

I believe with Kaga (2008, p. 53): "One effective way to construct a just and sustainable world is to pay attention to early childhood: to ensure adequate care and development for all children and to teach them the kinds of knowledge, skills and values – such as empathy, sharing, respect for others, love for nature – that promote sustainability from a very early age."

REFERENCES

Anand, S., & Sen, A. (2000). Human development and economic sustainability. World Development, 28, 2029–2049. Retrieved May 11. 2013 from http://dx.doi.org/10.1016/S0305-750X(00)00071-1,

Arnesen, A-L. (ed.) (1995). Gender and equality as quality in school and teacher education. In *Final Report from the 3-year Nordic projects on gender and equal opportunities in teacher education Nord Lilia, (p. 117).* Oslo: Nordic Council of Ministers. Oslo College - Bislet Publications. Special Edition A/1995. Oslo College, School of Education.

[*Basics on preschool curriculum 2010.* (2010).] *Esiopetuksen opetussuunnitelman perusteet 2010.* (2010). Retrieved in March 30.2013, from http://www.oph.fi/download/131115_Esiopetuksen_opetussu-unnitelman_perusteet_2010.pdf

Bowers, C.A. (2000). *Let them eat data: how computers affect education, cultural diversity, and the prospects of ecological sustainability.* Georgia, Athens: University of Georgia Press. British Library of Congress Cataloging-in-Publication Data. USA: Maple-Vail. Retrieved May 11. 2013 from http://www.google.fi/books?hl=fi&lr=&id=vgmlKGdMyWMC&oi=fnd&pg=PR7&dq=ecological+sustainability&ots=43AmpyH1Qs&sig=A82Vh4qAmrZMBB74tDLgi-mjEvY&redir_esc=y

Bruntland, G. (ed.). (1987). *Our Common Future: The World Commission on Environment and Development.* Oxford: Oxford University Press.

Chang-Gen (1990). Major systems theories throughout the world. *Behavioral Science* 35, 79–103.

Checkland, P. (1981). *Systems thinking, systems practice.* Chishester: John Wiley & Sons.

Circles of sustainability. (2013, April 25). Retrieved May 1, 2013, from http://en.wikipedia.org/wiki/Circles_of_Sustainability and from https://upload.wikimedia.org/wikipedia/commons/9/96/Circles_of_Sustainability_image_%28assessment_-_Melbourne_2011%29.jpg

Cohen, L., & Manion, L. (1994). *Research methods in education* (4th ed.). London, New York: Routledge.

Critical theory, From Wikipedia. (2013, May 13). Retrieved June 1, 2013 from http://en.wikipedia.org/wiki/Critical_theory

Cultural diversity. (2013, May 8) Retrieved May 11, 2013 from http://en.wikipedia.org/wiki/Cultural_diversity

Davis, J. M. (2008). A case for participatory, whole-of-settings approaches. In I. Pramling Samuelsson, & Y. Kaga (Eds.) *Contribution of early childhood education to a sustainable society, (*pp. 18–24). Paris: UNESCO. France.

Dréo, J. (2006). *File: Sustainable development.svg*. Retrieved May 1, 2013, from https://en.wikipedia.org/wiki/File:Sustainable_development.svg#file

Education on the path to sustainability. Proposal of an indicator set to evaluate education for sustainable development. (2012). Allgemeine Ökologie zur Diskussion gestellt, 13, 2012. University of Bern: Interdisciplinary Centre for General Ecology (IKAÖ).

Elliot, J.A. (2006). *An Introduction to sustainable development.* 3rd edition. London and New York: Routledge Taylor & Francis Group.

Ely, M., Anzul, M., Friedman, T., & McCormack Steinmetz, A. (1991). *Doing qualitative research: Circles within circles.* London, New York, Philadelphia: The Falmer Press.

European Early Childhood Education Research Association (EECERA). (2012). Retrieved April 3, 2013, from http://www.eecera.org/

Feldman, M. (1995). Strategies for interpreting qualitative data. *Qualitative Research Methods Series,* 33. A Sage Publication University paper.

Ferreira, C. (2007). What is the Montessori approach? In Konuralp, Iren, & Ayten Tekay (eds.). *Symposium on alternative education models for the 0-6 age group,)*pp. 58–63). Diyarbakir: Kamer Foundation Publications.

Flathman, R. E. (2005). *Pluralism & liberal democracy.* Baltimore: The Johns Hopkins University Press.

Frost, J.L. (2010). *A History of children's play and play environments. Toward a contemporary child-saving movement.* New York, UK: Routledge Taylor & Francis Group.

Fröbel, F. (2012; 1826). *Die Menschenerziehung.* Die Menschenerziehung. Die Erziehungs-, Unterrichs- und Lehrkunst, angestrebt in der allgemeinen deutschen Erzienhunganstalt zu Keilhau. Translated into Finnish and edited by Aili Helenius (2012) *Ihmisten kasvatus.* Helsinki: Kirja kerrallaan.

Georgiou, I. (2007). *Thinking through systems thinking.* London and New York, Routledge: Taylor & Francis Group.

Gharajedaghi, J. (2011). *Systems thinking. Managing chaos and complexity.* 3rd Edition. Elsevier: Morgan Kaufmann.

Gochman (1968). Psychologicalstems. In D. L. Sills (red.) *International Encyclopedia of the Social Sciences,* 15, (pp. 486–495). The MacMillan Company & The Free Press.

Gudjons, H. (2003). *Pädagogische Grundwissen.* 8. Auflage. Bad Heilbrunn/OBB.: Verlag Julius Klinkhardt.

Guidelines and recommendations for reorienting teacher education to address sustainability. (2005, October) *Education for sustainable development in action, Technical Paper No. 2,* UNESCO. Retrieved May 1, 2013, from http://unesdoc.unesco.org/images/0014/001433/143370E.pdf

Haldane, J. (ed.) (2004). Values, education and the human world. Essays on education, culture, politics, religion and science. *St. Andrews Studies in Philosophy and Public Affairs.* UK: Imprint Academic; USA: Imprint Academic Philosophy Documentation Center.

Halsall, F. (2008). *Systems of art. Art, history and systems theory.* Bern: Peter Lang AG. International Academic Publishers.

Heylighen, F., Joslyn, C. &, Turchin, V. (1999, October 27; modified from the original October, 1. 1993). What are Cybernetics and System Science? In F. Heylighen, C. Joslyn, & V. Turchin (eds.) *Principia Cypernetica Web* (Principia Cypernetica, Brussels), Retrieved 26. May, 2013 from http://pespmc1.vub.ac.be/CYBSWHAT.html

Holism in science. (2013, May 6). Retrieved May 7, 2013, from http://en.wikipedia.org/wiki/Holism

Hopkins, C. (2006). Education for sustainable development: Holistic understanding of our world. Presentation. In Müyesser Ceylan/Detlev Lindau-Bank (ed.) *Between Holistic Education and Teacher Training. 3rd International Journal of Teacher Education and Training Conference. Post-Conference Book* (pp. 149–162). Caritas Sozialwerk Dinklage, Dinklage Hochschule Vechta.

Hutchins, M.J., & Sutherland, J.W. (2008). An exploration of measures of social sustainability and their application to supply chain decisions. *Journal of Cleaner Production,* 16 (15), 1688–1698. Retrieved May 11, 2013 from http://dx.doi.org/10.1016/j.jclepro.2008.06.001

Husa, S., & Kinos, J. (2005). Academisation of early childhood education. *Scandinavian Journal of Educational Research*, 49 (2), 133–151. Routledge Tylor & Francis Group.

Hytönen, J. (1992). *Lapsikeskeinen kasvatus.* [*Child-centred education*] Juva: WSOY.

Härkönen, U. (1983). Pienten lasten työkasvatus Fröbelin, Steinerin ja Montessorin kasvatusajattelussa. Savonlinna, Joensuu: Joensuun yliopisto. Savonlinnan opettajankoulutuslaitos. *Kasvatustieteen pro-gradu -tutkielma.* [Small children's work education in educational thinking of Froebel, Steiner and Montessori. Savonlinna. Joensuu: Savonlinna Teacher Education. *Master thesis.*]

Härkönen, U. (1991). Työkasvatusajattelun systeeminen tutkimus - Tulevaisuuden näkökulma pienten lasten työkasvatukseen. Joensuun yliopisto. Kasvatustieteiden tiedekunnan tutkimuksia 38. Joensuu. *Lisensiaattitutkimus.* ISSN 0781-2329. ISBN 951-708-018-2. (With English summary). [Systemic study on work education thinking – Future-oriented approach to small children's workeducation]. Research in Faculty of Education Science 38. *Licentiate thesis.* Joensuu: Joensuu University Press.

Härkönen, U. (1992a). Työleikkiä vai leikkityötä? *Lapsemme* 3/1992, 42–43. (Käsittelee Freinet'n kasvatusajattelua.) [Workspiel or spielwork? *Our Children* 3/1992, 42–43. (About Freinet's educational thinking)]

Härkönen, U. (1992b). Pedagogien ajatuksia pienten lasten kasvatuksesta. *Lapsen maailma*, 12/1992, 22–23. [Pedagogues' thoughts on small children's education. *Child's World,* 12/1992, 22–23.]

Härkönen, U. (1993). Steiner-pedagogiikan ja taustafilosofian yhteydet. *Kasvatus* 2/1993, 181–187. [Connections between Steiner pedagogy and its background philosophy. *Education* 2/1993, 181–187.]

Härkönen, U. (1995). Educators' ideas of gender roles in small children's work education. Publication 24 on the list of publication of Nord Lilia Series. In Anne-Lise Arnesen (ed.) Gender and equality as quality in school and teacher education. *Final Report from the 3-year Nordic projects on gender and equal opportunities in teacher education*. Oslo: Nordic Council of Ministers. Oslo College - Bislet Publications. Special Edition A/1995. Oslo College, School of Education, 117.

Härkönen, U. (1996). Conceptions of female child care personnel about girls' and boys' work and mothers' and fathers' work education. Summary of the doctoral dissertation. In U. Härkönen (1996) Naiskasvattajien käsityksiä tyttöjen ja poikien työn tekemisestä sekä äitien ja isien työkasvatuksesta. *Doctoral dissertation,* 246–261. Publications in Education, Faculty of Educational Sciences 28. University of Joensuu. Joensuu.

Härkönen, U. (1999). Työtä ja työkasvatusta käsittelevien tekstien sisällön analyysi laadullisen paradigman valossa. [Content analysis of the texts on work and work education in the light of the qualitative paradigm.] In I. Ruoppila, E.Hujala, K.Karila, J.Kinos, P.Niiranen, & M. Ojala (eds.), 149–165. *Varhaiskasvatuksen tutkimusmenetelmiä*. [*Research methods in early childhood education*.] Jyväskylä: Atena.

Härkönen, U. (2002a). *Esiopetus ja esiopetussuunnitelma varhaiskasvatuksen viitekehyksessä*. Savonlinnan opettajankoulutuslaitos. Joensuun yliopisto. Kasvatustieteiden tiedekunnan selosteita 84. With English Resume. [*Preschool and preschool curriculum in the frame of reference of early childhood education*. Savonlinna Department of Teacher Education. University of Joensuu. Bulletins of the Faculty of Education 84].

Härkönen, U. (2002b).Work and gender education in early childhood education. *Presentation* at Workshop 19/4/02 'Childhood, Child good' 50 years of preschool teacher training in Tielt. Katholiege Hogeschool Zuid-West-Vlaanderen, KATHO PHO Tielt. Belgium.

Härkönen, U. (2003a). What do the terms early childhood education and preschool education mean? Joensuu: University of Joensuu. *Research Reports* of the Faculty of Education 86. ISSN 0781-2329; ISBN 952-458-339-9.

Härkönen, U. (2003b). Defining early childhood education through systems theory. *Scientific Articles of the 3rd International Conference Person. Color. Natur. Music*, 2002, 77–88. Daugavpils: Daugavpils University.

Härkönen, U. (2003c)**.** Current theories related to early childhood education and preschool as frames of reference for sustainable education. *Proceedings of the 1st International JTET Conference Sustainable Development. Culture. Education,* 2003, pp. 38–51. Daugavpils: Daugavpils University.

Härkönen, U. (2003d). The new systems theory of early childhood education and preschool as a frame of reference for sustainable education. *Journal of Teacher Education and Training (2), 2003*, (pp. 25–38). Faculty of Pedagogy and Psychology. Daugavpils: Daugavpils University.

Härkönen, U. (2004). Work Education for Sustainable Development (WESD) in Curricula and in the Systems Model. In Anneli and Marika Veisson (eds.) *Sustainable Development. Culture. Education. Articles in Early Childhood Education, (*pp. 26–42). Tallinn Pedagogical University. Tallinn: TPÛ Kirjastus.

Härkönen, U. (2006a). Diversity of early childhood education theories in a democratic society. *Journal of Teacher Education and Training (6), 2006,* (pp. 103–115). Daugavpils: Daugavpils University, Institute of Sustainable Education. ISSN 1407-8724.

Härkönen, U. (2006b). Froebel's educational thinking as a systems model. *Froebel: from play to work–Taking Froebel forward. Texts of presented papers received. CD_ 2006,* (pp. 46–69). Dublin: Froebel College.

Härkönen, U. (2007a). The Bronfenbrenner ecological systems theory of human development. In Slahova, Aleksandra et al. *Scientific Articles of V International Conference Person.Color.Nature. Music.*, (pp. 9–22). Daugavpils: Daugavpils University "Saule".

Härkönen, U. (2007b). Application of the systems educational model to sustainable education. The Proceedings of 5th International JTET Conference on Theories and Practices for Education of Sustainable. *Acta Pericemonologia Rerum Ambientum, Debrecina, Papers in Environmental Studies,* Tomus 2, 120–126. Debrecen 2007, ISSN 1588 2284. Debrecen: University of Debrecen, Department of Applied Ecology.

Härkönen, U. (2007c). Work education and gender equality education in early childhood education. In Konuralp, Iren, & Ayten Tekay (eds.). *Symposium on alternative education models for the 0-6 age group,* (pp. 100–104). Diyarbakir: Kamer Foundation Publications.

Härkönen, U. (2008a). New pedagogical systems theory and early childhood education culture. In U. Härkönen, & E. Savolainen (Eds.), *International views on early childhood education.* University of Joensuu, Savonlinna Department of Teacher Education. Retrieved March 30, 2013, from http://sokl.uef.fi/verkkojulkaisut/varhais/kehys.htm, (pp. 1–40). ISBN 978-952-219-091-8.

Härkönen, U. (2008b). The core value elements of the concept of early childhood education. Oral presentation on the 18th EECERA Annual Conference Reconsidering the Basics in Early Childhood Education. Stavanger, Norway 3rd–6th September 2008. *Handout of the power point presentation.*

Härkönen, U. (2009). Pedagogical systems theory and model for sustainable human development in early childhood education and care (ECEC). *Journal of Teacher Education for Sustainability, 11* (2), 77–86. DOI: 10.2478/v10099-009-0042-1

Härkönen, U. (2010). Child and children in ECEC viewed through the pedagogical systems theory. *Report, Gardermoen 18.–20.11.2009 Conference concerning Nordic Research in the Field of Early Childhood and Care: Quality and relevance for policymaking,* pp. 150–165. Oslo: Norwegian Ministry of Education and Research. Norwegian Government Administration Services.

Härkönen, U. (2011). The process of creating the pedagogical systems theory for early childhood and preschool education. In Marika Veisson, Eeva Hujala, Peter K. Smith, Manjula Waniganayake, & Eve Kikas (eds.) *Global Perspectives in Early Childhood Education. Diversity, Challenges and Possibilities,* (pp. 47–66). Frankfurt am Main: Peter Lang Internationaler Verlag der Wissenschaften.

Härkönen, U., & Jämsä, T. (2006). Systems theory, holism and early education. Introduction to the two approaches and education. In Müyesser Ceylan/Detlev Lindau-Bank (ed.) *Between Holistic Education and Teacher Training. 3rd International Journal of Teacher Education and Training Conference. Post-Conference Book,* (pp. 47–63). Caritas Sozialwerk Dinklage, Dinklage Hochschule Vechta.

ISE page of publications. (2013). Retrieved May 11. 2013. from http://ise-lv.eu/publications.php?show=39

Johansson, J-E. (ed.) (1995). Människans fostran. Stockholm: Studentlitteratur. (Former translation into Swedish in 1920s by unknown translator from the original Menschenerziehung by Fröbel, 1826.) (Information given 8.5.2013 by email from professor Anette Sandberg, to professor Ulla Härkönen.)

Johannesburg Declaration. (2002). *Universal Declaration on Cultural Diversity2002.* Retrieved May 1, 2013, from *http://unesdoc.unesco.org/images/0012/001271/127162e.pdf*

Journal of Teacher Education for Sustainability. (2013). Retrieved April 4, 2013, from http://www.versita.com/jtes. Versita Ltd 78 York Street, London W1H 1DP, Great Britain.

Jämsä, T. (2006). The concept of sustainable education. In Pipere, A. (2006). *Education & Sustainable Development. First Steps Toward Changes*, 1, (pp. 5–30). SAULE: Daugavpils University.

Kaga, J. (2008). Early childhood education for a sustainable world. In I. Pramling Samuelsson, & Y. Kaga (Eds.) *Contribution of early childhood education to a sustainable society,* pp. 53–56. Paris: UNESCO. France,

Kaesler, D. (ed.) (2003). *Klassiker der Soziologie.* Von Auguste Comte bis Norbert Elias. Münche: Verlag C.H. Beck.

Katzenstein, P. J. (2010). A world of plural and pluralist civilizations. Multiple actors, traditions, and practices. In P. J. Katzenstein (ed.) *Civilizations in world politics. Plural and pluralist perspectives, (*pp. 1–40). London and New York: Routledge, Taylor & Francis Group.

Kvale, S. (1996). *InterViews. An introduction to qualitative research interviewing.* London. New Delhi: SAGE Publications.

Learning for the future: Competences in education for sustainable development (2011). *Achievements of the Expert Group on Competences in Education for Sustainable Development.* United Nations Economic and Social Council. Sixth Meeting Geneva, 7 and 8 April 2011. 21 January 2011. ECE/CEP/AC.13/2011/6.

Li, C- Z. & K-G. Löfgren (2000). Renewable resources and economic sustainability: A dynamic analysis with heterogeneous time preferences. *Journal of Environmental Economics and Management* 40 (3), 236–250. Retrieved May 11, 2013 from http://dx.doi.org/10.1006/jeem.1999.1121,

Luhmann, N. (1995). *Ekologinen kommunikaatio.* Helsinki: Gaudeamus. [**Ökologische** Kommunikation. 3. Auflage. Wiesbaden: Westdeitscher Verlag.]

McLaren, P.L., & Giarelli, J.M. (Eds.) (1995). *Critical theory and educational research*. Albany, New York: State University of New York Press.

[*National Curriculum Guidelines on ECEC in Finland.* (2003).] *Varhaiskasvatussuunnitelma 2005* (2005). Retrieved May 2, 2013 from, see above.

Niiniluoto, I. (2002). *Johdatus titeenfilosofiaan. Käsitteen- ja teorianmuodostu.* 3. painos. [*Introduction to science philosophy. Concept- and theory formation.* 3rd edition.] Keuruu: Otava.

Ojala, M. (1985). *Varhaiskasvatuksen perusteita.* [*Basics of early childhood education*]. Helsinki, Rauma: Kirjayhtymä.

Õvermann, U., Tilman, A., Konau, E., & Krambeck, J. (1979). Die Methodologie einer ”Objektiven Hermeneutik” und ihre allgemeine forschungslogische Bedeutung in den Sozialwissenschaften. In H-G. Schoeffner (red.) *Interpretative Verfahren in den Sozial- und Textwissenschaften*, (pp. 352–434). Stuttgart: Metzler,

Õvermann, U., Allert, T., Konau, E., & Krambeck, J. (1983). Die Methodologie einer ”Objektiven Hermeneutik”. In P. Zedler & H. Moser (red.) *Aspekte der qualitativer Sozialforschung. Studien zu Aktionsforschung, empirischer Hermeneutik und reflexiver Sozialtechnologie, (*pp. 95–123). Opladen: Leske Verlag + Budrich GmbH,

Papadopoulou, H. (2008). The humanitarian pedagogy of Sukhomlinsky and the application of his ideas in preschool education. In U. Härkönen, & E. Savolainen (Eds) *International views on early childhood education*. University of Joensuu, Savonlinna Department of Teacher Education. Retrieved March 30, 2013, from http://sokl.uef.fi/verkkojulkaisut/varhais/kehys.htm

Parsons, T. (1968). Systems analysis: Social systems. In D.L. Sills (red.) *International Encyclopedia of the Social Sciences*, 15, (pp. 458–472). The MacMillan Company & The Free Press.

Patton, M. Q. (2002). *Qualitative research & evaluation methods*. 3. edition. Sage Publications, Inc.

Popper, K.R. (2000). *Avoin yhteiskunta ja sen viholliset*. Suom. Paavo Löppönen. Keuruu: Otava. First piblished 1945 by George Routledge & Sons: *The open society and its enemies*.

Pramling Samuelsson, I., & Kaga, Y. (2008). *The contribution of early childhood education to a sustainable society*. Paris, UNESCO. France.

Rapoport, A. (1968). Systems analysis: General systems theory. In D.L. Sills (red.) *International Encyclopedia of the Social Sciences*, 15, (pp. 452–458). The MacMillan Company & The Free Press.

Reunamo, J., & Pipere, A. (2011). Doing research on education for sustainable development. *International Journal of Sustainability in Higher Education,* 12 (2), 110–124. *Emerald Group Publishing Limited. doi 10.1108/14676371111118183.*

Ritchie, J., & Lewis, J. (Eds.) (2003). *Qualitative research practice. A Guide for social students and researchers.* SAGE Publications. Great Britain: Cromwell Press Ltd.

Pressoir, E. (2008). Preconditions for young children's learning and practice for sustainable development. In I. Pramling Samuelsson, & Y. Kaga (eds.) *Contribution of early childhood education to a sustainable society, (*pp. 57–62). Paris: UNESCO. France.

Salite, I., Mičule, I., Kravale, M., Iliško, D. & Stakle, A. (2007). Toward the sustainability in teacher education: promise and action research. In A. Pipere (ed.) *Education and Sustainable Development: First Steps toward Changes,* 2, pp.263–292. SAULE: Daugavpils Un8iversity.

Senge, P.M. (2012, October 5) *What Is Systems Thinking? – Peter Senge Explains Systems Thinking Approach And Principles.* Retrieved May 26, 2013 from http://www.mutualresponsibility.org/science/what-is-systems-thinking-peter-senge-explains-systems-thinking-approach-and-principles

Simonstein, S. (2008). Education for peace in a sustainable society. In I. Pramling Samuelsson, & Y. Kaga (eds.) *Contribution of early childhood education to a sustainable society,* (pp. 37–42). Paris: UNESCO. France.

SD Features. (2013). UN Decade of Education for Sustainable Development. UNESCO. Retrieved May 1, 2013, from http://www.gdrc.org/sustdev/un-desd/key-action.html

Sterling, R. (2003). Whole systems thinking as a basis for paradigm change in education: Explorations in the context of sustainability. *Doctoral thesis.* Centre for Research in Education and the Environment. University of Bath, U.K. Retrieved September 30, 2005 from http://www.Bath.ac.uk/cree/sterling.htm

Strauss, A.L. (1987). *Qualitative analysis for social scientists.* Cambridge: Cambridge University Press.

Sugrue, C. (1997). *Complexities of teaching: Child-centred perspectives.* London. Washington, D.C.: The Falmer Press.

Sustainable development (28 April, 2013). Retrieved May 11, 2013 from http://en.wikipedia.org/wiki/Sustainable_development#Culture

Sustainable development in a diverse world (2006). Retrieved May 11, 2013 from http://www.susdiv.org/.

Sustainable development. Kuvat aiheesta Sustainable development. (2013). Retrieved May 1, 2013, from http://www.google.fi/search?q=sustainable+development&hl=fi&rlz=1C2SAVM_enFI531FI531&tbm=isch&tbo=u&source=univ&sa=X&ei=drKAUbrgGKKr4ASA84CIDw&ved=0CEkQsAQ&biw=1680&bih=949

System. (2013, March 28) Retrieved May 5, 2013, from http://en.wikipedia.org/wiki/System#Analysis_of_systems.

Systems thinking, (2013, May 3) Retrieved May 7, 2013, from http://en.wikipedia.org/wiki/Systems_thinking

Tormey, R., Liddy, M., Maguire, H., & McCloat, A. (2008). Working in the action research nexus for education for sustainable development: two case studies from Ireland. *International Journal of Sustainability in Higher Education,* 9 (4), 428–440.

Travelplanner, (2008, December 23) File: Ecology Society Economy diagram Environment background.jpg. Retrieved May 1, 2013, from http://upload.wikimedia.org/wikipedia/commons/e/ea/Ecology_Society_Economy_diagram_Environment_background.jpg

Tolonen, T., Palmu, T., Lappalainen, S., & Kurki, T. (Eds.) (2012) *Cultural practices and transitions in education.* University of Helsinki, Faculty of Behavioural Sciences. England and U.S.A.: Lightning Source.

UNESCO (2009). Monitoring and evaluation of ECD. *Proceedings of the UNESCO World Conference on Education for Sustainable Development, March 31—April 2, Bonn, Germany, Workshop 17.*

UNESCO Chair in reorienting teacher education towards sustainability. (2011). Retrieved April 3, 2013, from http://www.irisyorku.ca/about/our-partners/unesco-chair-in-reorienting-teacher-education-towards-sustainability/

Varhaiskasvatus 2000-luvulla? (2008). [*Early childhood education in the 21st century?]* Opetusalan ammattijärjestö OAJ. Forssan kirjapaino.

Versita, (2013). Retrieved May 9, 2013 from http://www.degruyter.com/view/j/jtes

Williams, M., & May, T. (1996). *Introducion to the philosophy of social research*. Biddles Ltd, Guildford & King's Lynn: UCL Press.

Winter, C., & Firth, R. (2007). Knowledge about education for sustainable development: Four case studies of student teachers in English secondary schools. *Journal of Education for Teaching, 33 (3), 341–358.*

Wolff, L-A. (2011). *Nature and sustainability. An Educational study with Rousseau and Foucault*. USA, GB: LAP LAMBERT Academic Publishing

Tourism research — connections on well-being, education and sustainability

Walking towards ecosophy: Nature tourism and ecological duty

Stephen Condit

University of Eastern Finland, Finland

> *While almost all men feel an attraction drawing them to society, few are attracted strongly to Nature. In their reaction to Nature men appear to me for the most part, notwithstanding their arts, lower than the animals. It is not often a beautiful relation, as in the case of the animals. How little appreciation of the beauty of the landscape there is among us...! For my part, I feel that with regard to Nature I live a sort of border life, on the confines of a world into which I make occasional and transient forays only.... Unto a life which I call natural I would gladly follow even a will-o'-the-wisp through bogs and sloughs unimaginable, but no moon nor firefly has shown me the causeway to it.*
>
> *Henry Thoreau: "Walking"*

CONTENTS

ABSTRACT

If sustainability is to become a governing discourse, it must also be a widely shared frame of mind. Essential to it is a strong concept of and commitment to nature and its ethical significance, which commit the person to certain kinds of attitudes and behaviour. One expression of this is ecosophy, whose primary pragmatic is the assumption of ecological duty. Duty is onerous and contested, and so requires appropriate communal situations in which it can be discharge. Nature tourism can provide these situations in a practical form despite the contrary pressures of society and lifestyles. It is thereby a mode of education demonstrating the possibilities of ecological citizenship and its corresponding virtues. The responsibilities of nature tourism must be comprehended within a conceptual framework of ecological duty.

Key words: sustainability, ecosophy, ecological duty, nature tourism, virtue, citizenship

PROLOGUE

> *Nature is a personality so vast and universal that we have never seen one of her features. The walker in the familiar fields which stretch around my native town sometimes finds himself in another land than is described in their owners' deeds, as it were in some faraway field….*
>
> *Henry Thoreau: "Walking"*

Some years ago as chair of the regional nature conservancy association I testified at a public inquiry into the development of a tourist site in a small municipality of the province. The area in question is an old growth pine forest on flat, sandy soil in the Saimaa inland archipelago. In addition to its apparent suitability for tourist development and great beauty, it is also adjacent to places where endangered and protected Saimaa ringtail seals lair, fish and loiter. The development plans were considerable: numerous luxurious cabins, a large restaurant, docks, streets, amenity facilities, public utilities, and an airport. It was designed for use throughout the year, and posed a threat not only to the endemic seal population but also to the environing forest and archipelago.

My testimony was not a success. Wholly involved then in Emersonian transcendentalism, I spoke of values and concepts of nature and duties to nature irrelevant to the practical issues at hand and incomprehensible, or at least unconvincing, to the decision makers of the municipality. While speaking I saw heads shaking with incredulity. Subsequent reports in the press remarked that I had presented only a peculiar personal philosophy which contributed little to the deliberations on the contentious issues of the case. It was a fair assessment.

My errors were several. I was not sufficiently familiar with the natural or social history of the place, or with the economic situation of the municipality. I knew little about the site's historical, aesthetic and recreational significance to the local people. I neglected to consider how effectively to motivate the municipal authorities to reconsider at least the

most farfetched details of their proposed plan. I was not well enough situated in the natural features of the area, and so my arguments seemed artificial and superficial. I was, in short, insufficiently versed in environmental education and hence unable to persuade others.

Effective environmental education, including teaching sustainability, can address these typical errors, but to do so it must have something significant to say about some fundamental questions of being. It must engage with and be relevant to the diverse ways in which we interact with our environments and with nature through society's various land uses and environmental impacts. Tourism is a significant social structure of these interactions and a possible occasion for self-governed participation in environmental education. It might be that tourism provides too brief and superficial encounters with a place for fundamental questions of being to emerge. (Fennell 2008, 206-210) But brevity may also be an opportunity. Freed from ordinary routines, the tourist may, if encouraged or empowered by the available programmes of activities, experience an expression of self larger than conventional social interests usually allow, a conception of self intrinsic to ethical knowledge of nature and necessary for ecologically informed behaviour.

If, however, tourism is to empower us to larger experiences of self, it must attend to its ethical premises and consequences. Environmental philosophy and education generate knowledge relevant to tourism which can stimulate its faltering progress towards an inclusive notion of "just tourism."(ibid 211-220) Essential to this is a commitment to ecologically sustainable practices in which the relevance of various modes of ethical reasoning can be experienced within less demanding tourist activities. Tourism is not always or only an environmentally insensitive land use spreading depredation and degradation to its immediate nature and culture. It can also be a method of teaching and a social practice of sustainability, if proper attention is paid to its infrastructure and its impacts on both local culture and nature. It must consider how it encourages its clients to behave and believe, and the extent to which it encourages them towards a renewal of their frame of mind. It must be particularly sensitive to whether or not it fosters in them a sense of place to which they owe respect for both its natural and social features. (Borg 1997, 38-52) Sustainability in tourism far exceeds tourism's conventional interests and activities, but its potential as a means of ecological and environmental justice far exceeds conventional expectations of it as a merely economic venture for leisure time.

Tourism's potentials are most clearly visible in nature tourism. As I shall expand on below, I use this contested concept in its strictest possible sense, somewhat against its most frequent usage, in order to discern with as much clarity and simplicity as possible its ethical dimensions. Nature tourism is a mode of "nature-based ecotourism" in which "...the principle activity is essentially observation and contemplation..." of a natural environment. (Buckley 2009, 5, 2-7, 19ff) Its practical relationship with other modes of tourism commonly designated as sustainable, alternative, green or ecotourism is unclear. Buckley suggests it is more an analytical than a commercial concept, because the bottom line of any tourism as a business is profitability. But if the analysis is not extended to practice, even against profitability, the concept of nature tourism will be abused and its demonstration of ethical knowledge of nature eviscerated. Fennell, who prefers ecotourism as the stricter, more demanding concept, notes that it is "...both an attitude and an ethic."(Fennell 2013, 331, 323-332) Neither can thrive without coherent practice. The environments of all modes of tourism will suffer in consequence.

I propose to consider some ways in which we might understand the practices of observation and contemplation within nature tourism and how they can enrich our knowledge of nature and experience of self, and some of the conceptual and ethical problems entailed. Nature tourism can be a domain of practical, individually experienced and communally validated sustainability through direct, voluntary and more or less safe encounters with nature. It can provide palpable demonstrations of ecology as an enlightening science and a programme somewhat of behaviour and values, and thereby of ecosophy as ethical commitments to dimensions of nature indicated but not revealed by ecology. Thus nature tourism provides opportunities for the autonomous acknowledgement of duty, which can empower us to act or refrain from acting in certain ways. It can attune us to reasons for duty ordinarily obscured by the contingencies of everyday life.

My argument is that nature tourism is a social structure of both conventional and specifically environmental ethics. My own commitments appear in those chains of reasoning on which I most rely. Nevertheless I do not think it necessary to stipulate or exclude any of the many possible philosophical and ethical approaches to nature. Ecological duty can be derived from numerous premises, and all ethical doctrines have some notion of duty and its requisite virtues. What is needed are coherent and pragmatic reasons for respecting nature as an experience of virtue through duty. Nature tourism can demonstrate the commensurability of many environmental ethics, and organise their pragmatic realisation. It gives reasons, occasions and community for some modes of duty often beyond individual capabilities. Nature tourism can be persuasive where more doctrinal exhortations to duty fail.

SUSTAINABILITY AS A FRAME OF MIND

> I am alarmed when it happens that I have walked a mile into the woods bodily, without getting there in spirit. In my afternoon walk I would fain forget all my morning occupations and my obligations to society. But it sometimes happens that I cannot easily shake off the village....In my walks I would fain return to my senses. What business have I in the woods, if I am thinking of something out of the woods?

> Henry Thoreau: "Walking"

Sustainability might emerge as a decisive discourse for the future of humankind, but it would be wise not prematurely to demand too much of it. Defined with sufficient severity it can alter our notions of nature, humanity and justifiable social structures. Few of us are ready to go so far, whatever the need to do so. But even understood in a more conventional manner, the concept of sustainability suggests far-reaching social and cultural change. Brundtland's standard formulation is sustainability as development which does not compromise the ability of future generations to meet their needs. This is modest enough, but it entails both a reorientation of the concept of need in order to embrace an increasingly wide responsibility to and through the environment, and a recognition of limitations on the scale, direction and purpose of development. (Brundtland 1987, 8 ff. 37-65) Economy must be coupled with ecology to reconstitute the concept and distribution of wealth and

welfare, towards uncompromising equality worldwide. Technology can no longer be impelled by its internal imperatives, but rather must be governed for purposes justified on grounds other than what is technically possible. Development is still dynamic, but it cannot be allowed to jeopardise a more fundamental commitment to equity, a commitment to rectify harms not only to all persons now alive, but to future persons, and to nature. Our relationships to nature must be rethought, from ownership and rightful use of natural resources to the necessary boundaries of human domain.

The Brundtland Commission's policy recommendations do not adequately formulate such a radical change in public policy. But their implied directions are clear. Future and nonhuman needs cannot be arbitrarily discounted for immediate benefit. Quality of life must become less dependent on material production and consumption. Civil society and citizen action must occupy an ever greater part of the public space now monopolised by states and multinational corporations. Localism must free people from dependent loyalty to the state, and locality must be experienced as an integral dimension of the world. (Dryzek 1997, 123-136) To a great extent sustainability is also a project of extending justice to include both the distribution of environmental impacts within society and within nature. (Low & Gleeson 1998, 1-28, 102-132) These matters are usually beyond the competence of the conventional judicial system. Sustainability takes us beyond justice to equity, the rectification of the shortcomings and failures of justice by a more inclusive doctrine of right. (Aristotle 1987, V, x) Ecological equity must inform the institutions, procedures and content of justice, and replace it when it proves inadequate. No one doctrine of sustainability encompasses all environmental values, aims, policies or duties. But by extending equity into nature, and into our shared relationships with and impacts on natural entities through time spans exceeding our own ordinary experience, sustainability commits us to a sensibility to nature's resilience, and to our own need to articulate values and ideals of what nature's resilience might signify for us. (Sarkar 2012, 166-172) There is room for many value systems, ideologies and environmental programmes here.

At issue here is a reordering of fundamental beliefs, attitudes, interests and emotions about the environment, and correspondingly our behaviour in and towards it. At an extreme, sustainability entails a commitment to prioritise the environment over the economy, and within the environment, nature over artifice, wild over domesticated. Contingencies moderate this extreme, not least of course the justified exigencies of society and social being, which cannot thrive without considerable domestication of nature. But domestication has diverse forms. Taking the biosphere inclusively defined as a baseline, we no longer see Earth primarily as a resource or, in a metaphor once popular, a spaceship. We do not need to regard it as a living being. It suffices, that its nature reveals itself as a "matrix of multiple values" most of which are ignored, suppressed or counterfeited in economic transactions. (Rolston 2012, 36-44) We must view Earth as an axiological phenomenon. Ecology is centred in social theory and behaviour, which much enriches the ethical question of how to live justly. We must re-immerse ourselves in natural history, not at the expense of the sociality of the human condition, but for its fulfilment. Sustainability alone cannot effect this transformation, but it indicates the incremental possibilities of nurturing it.

Sustainability is a difficult doctrine, with no clear premises or methods. Attfield defines it as the capacity of a social system to be maintained indefinitely, but he does not see in its current formulations any specific doctrines to realise its values. Indefinite

maintenance does not mean desirability. Cautiously he suggests that, as we now understand it, sustainability is "probably the most promising route towards the combined destinations of social justice, environmental sensitivity and the discharge of future-related responsibilities...."(Attfield 2003, 126-137) But premises are necessary, if only to distil from the concept a more critical attitude than Brundtland's to current trends of development. We can articulate practical commitments to social and cultural sustainability as responsibilities to nature and the future. (Holland 2001, 390-401) Sustainability must motivate us. Even if it fails as a guiding principle, as Holland suggests, it is still a conceptual field for asking some of the right questions.

Questions do not ask themselves. We must ask them, and because no "we" exists as a subject, each of us must ask herself at least some of them, and in the public domain as well. Here lies one premiss of sustainability, the experience of environmental crises as crises of awareness and values. We each can experience the inadequacy of our perceptions, beliefs and practices, and fail to find security in them. We can become aware of the need and the opportunity for deeper and truer perceptions and different practices. (Meyer-Abich 1993, 1-11 ff) We can become more complex and more complexly involved in environmental events. In complexity we can seek modes of security to sustain us in circumstances of growing fear, bewilderment and vulnerability.

Yet complexity can also paralyze, if we are unable to comprehend certain big things in their fundamental simplicity. Respect for nature is a big thing, and perhaps the necessary aspect of any account of sustainability. When vulnerability induces us to helplessness, fear and despair, we can respond with emotional intelligence towards nature and discern in our emotions, and in our will to good emotions, perceptions of Earth's myriad values. Such perceptions can impart to us some truths of nature and humankind. Insofar as we learn to acknowledge and share these emotions as necessary modes of human being and social intercourse, we can derive from them individual and communal strength to overcome helplessness and despair. (Tappolet 2007, 97 ff) By comprehending our emotions and their origins, and their significance to truth, we can discipline them with knowledge and action closer to the truths of nature than environmental crises and entrenched social interests ordinarily permit. We can cohere our ethical judgments with our emotions and action. We become more truly aware. Sustainability can intensify human being in both nature and society.

Nature tourism may be an occasion for this experience. It does not overcome helplessness with exercises of or pretensions to power and domination, in most cases heteronomously abdicated to others whose instruments we are. It can resolve our helplessness and emancipate us from despair by demonstrating our reliance on the natural forces we but inadequately comprehend. We need not in most cases confront them as hapless victims, but as validations of our being as instances of things greater than ourselves. Thoreau suggests that we need nature's wildness to set limits of awareness, to challenge it and to focus and attune it on greater realms of being. We become sensitive to laws and harmonies we ordinarily fail to detect. Our lives "... would stagnate if it were not for the unexplored forests and meadows which surround it.... We need the tonic of wildness.... We can never have enough of Nature.... We need to witness our own limits transgressed, and some life pasturing freely where we never wander."(Thoreau 1984, 557, 531-558) Nature tourism can magnify our living and awareness.

We each alone examine our awareness, while seeking confirmation and community from others similarly engaged. Together we may develop new practices better fitted to our individual and common situations, and perceptions truer to the nature of things. Sustainability in this sense is an ideal revealing to us something necessary, perhaps noble, which can empower us to aspects of good, beauty and truth in realms of being not our own. (Mitcham 1997, 359-375) We can become less fixated on ourselves, and more decentred. This is sustainability as a frame of mind, in which we perceive the possibilities of rightful relationships with nature in its most inclusive sense of all that comes into being, *natura naturans*.

Through nature we can experience right somewhat with other persons within and without our communities. It leads us towards a metaphysics, or cosmology, to make us sensitive to things disclosing themselves in a way which may educe from us immediate, practical and personal responses. (Bonnet 2002) It is participatory, without the arrogance of superiority. To regard nature through a cosmology, or a method seeking one, we experience dimensions of ourselves not normally engaged by conventional thought and behaviour. (Grange 1997, 3-15, 25ff) We speculate and intuit, cohere apparently incoherent aspect of our lives, or repudiate those which remain incoherent. We experience the continuous potentialities of becoming in a nature which has no end state. We create through participating in truths beyond conceptual proof, but within the proofs of experience.

Such a premiss may be noble, but it is not yet public policy, or even a doctrine of personal action in a frame of mind. Nevertheless some inferences can already be made that bring sustainability closer to personal and social realities, if we but allow it, against all the blandishments of commercial culture and the pressures of personal insecurity. An essential inference for a doctrine of nature tourism as an archetype of sustainable practice is the transformative value of an interest and involvement in the natural history of some place, an ennobling commitment that can enlarge our experience of self. (Rolston 1994, 83-88, 162-166) It is, Rolston argues, a pursuit of human excellence through cultural development to celebrate and enhance situated natural features, and to acknowledge them as legitimate value constraints on what can be rightfully done in any manner that might have an impact on them. This is an origin of duty. We can experience a transformation from being an insignificant object of social and natural forces into becoming a subject of humankind's presence in nature, and beholden to it.

Thereby transformed or transforming, our experiences and expectations of society begin to evolve. This transformation can unite adherents of mutually contradictory doctrines of sustainability for necessary changes in public policy. The social ecology of Bookchin, for example, enjoins us to extend our boundaries of social reality to encompass potentiality as its primary mode, linking social and natural events into possible futures over which we can exert some influence. (Bookchin 1990, 31-35) If environment and nature are appropriately prioritised in our ontological commitments to what could and ought to be, we can moderate our influence and guide it away from destructiveness and domination. Thus we perceive an objective framework for ethical judgments impelling us to ask, and provisionally answer, the question: what should be. With a disconcerting lack of modesty Bookchin urges us to become the agents of nature made purposive in modes of society in which it can find benign expression of its fecundity. (ibid, 113-125) Natural

and social evolution become one. On the smaller scale of introducing us into some local natural history in order to respect, protect and perhaps restore it, this could be a paradigm of nature tourism.

Deep ecology anticipates a similar enlargement of consciousness, in spite of its rejection of what it considers to be Bookchin's usurpation of nature's purposiveness. More romantically inclined than social ecology, deep ecology searches for spontaneous understanding of the enchantments of nature through its contemplation in direct contact with its wildness. (Devall & Sessions 1985, 7 ff) Ecological consciousness alerts us to the actualities, the presence of natural entities, both the obvious and unobvious. Thereby we are empowered to question our own, comfortable realities, which in fact inhibit us from experiencing ourselves as we might be. We can believe in the best of ourselves, and live creatively, in touch with "our essential wildness." (Foster 2002)

This process of self-realisation commits us to certain kinds of action and prohibits us from others. The guiding rule is a self-restraint from anything whose consequences are the exercise of destructive power over other natural entities, beyond what our survival and wellbeing necessitate. Anthropocentric instrumental rationality must be restrained. (Devall & Sessions 1985, 65-77, 187-196) Only in this way can we develop a truly human character, one that is situated in the natural features of any place we might call home. Such a character will respect the good of others whose home it also is, as well as the homes of others elsewhere. Home approaches universality within its situatedness in specific places. Ecological consciousness is maturity, a commitment to respect and care for beings unlike what we think ourselves to be, so that we may perceive how alike we are. This too is a possible paradigm for nature tourism in its demands that we go to places of nature for more than self-serving amenities, for something greater than entertainment. Nature tourism does not take us to amusement parks. A recurring ethical and practical problem of nature tourism designed and practised on less strict and more inclusive grounds than I propose in this study, is that it may only "feature nature" to a broad segment of the possible clientele whose primary motive is "...to use nature as a place to play."(Coghlan & Buckley 2013, 341,334-341) I do not counsel po-faced earnestness only. But a place of valued natural features and history is not a playground, nor is play a self-realisation which respect nature. But there must be ample scope for playfulness in respect for nature. Without it duty is implausible.

These two paradigms may delineate a general profile of nature tourism. It occurs within a place of natural features and history deemed worthy of respect and preservation, with activities designed to demonstrate respect and facilitate preservation, both in the particular relationships with and to the place, and within society in its prevailing attitudes to nature. It is intensely concerned with both the flourishing of nature within the confines determined by society, and with the empowerment of those persons whose beliefs and values demand that social structures respect nature. Nature tourism is thus "...a vehicle for the enhancement of an understanding of environmental values... as well as an activity which has arisen due to a fundamental shift in the way nature is viewed by society." (Wearing & Neil 2009, 13, 2-13ff) It is an agent of this educative development and a consequence of a comparable enhancement of attitudes and practices elsewhere in society, circumventing somewhat the controversies aroused by such contentious paradigms as deep and social ecology.

Through these paradigms, suitably embedded in tourism, we can comprehend another essential premiss of sustainability. They suggest contrasting models of social structure, although not perhaps as much as adherents of both sometime assert. But they share one fundamental insight which lies at the heart of all concepts of sustainability, even the most anodyne. We are biologically vulnerable, despite, and frequently because of, the best efforts of society to fortify us. Being vulnerable, we are dependent on natural processes, and being dependent we must ask what kinds of social groups are most protective of us and how to flourish with them in an indifferent nature. This is an origin of ethics, what MacIntyre calls "the virtues of acknowledged dependence."(MacIntyre 1999, 1-9, 63-98, 119-128) Like deep ecology he would have us focus intensely on ourselves. Like social ecology he would have us strive to create social practices and structures in which our own purposiveness can flourish in concert with the flourishing of nature. In its apparent modesty as a mere pastime of leisure, nature tourism can stimulate anew in us the origins of ethics. Sustainability as a frame of mind is above all an ethics.

Such is practical reasoning at its best. Being residents in nature through our vulnerability, we will encounter its wildness wherever it occurs, from the microscopic to the cosmic, from the ordinary to the extraordinary. (Rolston 1994, 12-22) But nature's wildness may also be distorted by human impact. To lessen our vulnerability we must lessen our destructive impacts, and immerse ourselves in orders of being which will not conform to mere human designs. We approach sustainability as an ethos, a way of life focussed not on human drama but rather on sensitive responses to both nature and ourselves. (Kheel 1993, 256-266) The ethos will not be given us. We must strive for it, against ourselves and society, and against nature as well, which cares not, but might continue to abide us if we succeed. The frame of mind of sustainability is a perseverance in this striving. It is a state of wisdom, transcending mere technological cleverness or theoretical learnedness. To wisdom then I turn, on the way to nature tourism.

ECOSOPHY: A MOTIVATION TO DUTY

> *A man's ignorance sometimes is not only useful, but beautiful-while his knowledge, so called, is oftentimes worse than useless, besides being ugly.... My desire for knowledge is intermittent, but my desire to bathe my head in atmospheres unknown to my feet is perennial and constant. The highest that we can attain to is not Knowledge, but Sympathy with Intelligence. I do not know that this higher knowledge amounts to anything more definite than a novel and grand surprise on a sudden revelation of the insufficiency of all that we called Knowledge before-a discovery that there are more things in heaven and earth than are dreamed of in our philosophy.*

> *Henry Thoreau: "Walking"*

Wisdom is a nebulous and contentious concept, and ecosophy, ecological or earth wisdom, even more so. We misuse self-confidence if we assert too forthrightly what ecosophy is, or that we have attained it. The extreme ideal is that through comprehending the past in the present features of the nature of a place, or how it comes to be beyond social time

and knowledge, we can see the truths of human being removed from restrictive and heteronomous social attributes. It is an appreciation of the inexplicable, vouchsafed to those who in responding to nature's diverse modes of being have insights into wilderness values of truth, beauty and integrity beyond ordinary language and social categories. (Oelschlager 1991, 320-353) Social knowledge is suspended, including language. The person endowed with ecosophical understanding is a sufficient subject of truth, right and good, the author of her own duty to nature beyond reference or responsibility to society.

This can be a frightening train of thought and a deplorable frame of mind. Self-liberated from social responsibility, duty may degrade into a declaration of power. Experienced this way ecosophy demands no verification, no community, no respect for other persons. It tends towards the elitism of claiming for one's own beliefs the inviolability of truth, and the authoritarianism of imposing demands for particular duties on others regardless of their beliefs and without regard for practicality or consequences. When confronted by its ultimate impossibility, it may also end in withdrawal to despair. We cannot do justice to the human condition by nullifying its essential aspect of sociality. However we approach ecosophy for enlightenment, we must do so with caution and scepticism towards those who claim it as insights into truth.

Nevertheless the ideal does suggest that a more temperate ecosophy might be nurtured which does not sever us from social responsibility. Once we perceive the enormity of natural history, which can perhaps most exigently be encountered wherever natural features are pronounced, and particularly where society's impact on them seems to be superficial, we can experience the possibility of palpable ethical truths supervened on natural facts, waiting to be comprehended by appropriate methods. Not least among these are the emotions incited by encounters with nature. From these methods, which might reduce to respectful awe, we can acquire ethical reasons to act and a motivation to act on these reasons. (Shafer-Landau 2005, 49 ff) This doctrine of supervenience is a reasonable, if disputed, argument for a moral realism encompassing nature as well as sociality. To see how this entails duty is ecosophy in a modest mode. It does not nullify sociality, but supplements it, bringing us into a realm of being which society too often relegates to a mere environment, or seeks to deny altogether. Ecosophy alters the relationship between rights and duties. Duty is prior, an ethically necessary attitude which inheres in non-exploitative, non-consumptive encounters with natural values. Once perceived, they allow us no lesser response. Ecosophy is a wisdom of duties.

The will to ecosophy is itself a motivation to the difficult acknowledgment of the priority of duties, however imperfectly comprehended it might be. This will is not an abdication of essential human characteristics but their enhancement to a more inclusive realm of being. It entails, as Holton suggests, the exercise of a distinct faculty of character, the "will-power" to discipline and overcome if need be our conventional acratic disposition to abandon our resolutions to good, and to be false to what we know somewhat to be dutiful. (Holton 2007, 39-67) The will to ecosophy in encountering nature may provide sufficient reason to respect nature in spite of other, socially facilitated desires. The emotional perception of values in nature can motivate us to will-power against desires. Its exercise motivates and empowers us to ecosophy, or to a responsiveness to nature from which ecosophy might emerge. Will-power can return us to the experience of first things. We must entertain the possibility that ecosophy is a return to the origins of ethics and

moral reasoning, which is a necessary condition of society. The priority of nature over society becomes a palpable, if fleeting and situational truth.

My account here focuses on the methods of this will, or rather, on the methods of the resolution to act in particular ways and believe particular things because larger goods than our own interests so require. This is duty. In appropriate circumstances, the will to ecosophy and duty to nature are a mutually reinforcing cycle, both calling upon and stimulating the exercise of will-power. The substance of ecosophy is personal, and not to be prescribed. We can assume, however, that insofar as our methods of will are a valid response to the demands of sustainability, the substance likewise will be. But the demands on will-power may exceed our ordinary capabilities and ecosophy our ordinary knowledge. Nature tourism, I shall argue, is a practical means of uniting individual wills into a communal will and in community expressing, however contingently, a substantive ecosophy and acting on its duties. Nature tourism gives us an occasion to exercise our faculty of will-power in community with others likewise mutually empowered.

The will to ecosophy comprises several fundamental dimensions. It is a declaration of a personal set of values to be pursued in practical actions whose method is personal and intentional involvement in nature, and whose consequences are events in natural history. It is informed by scientific ecology and ordinary natural history as well as aesthetic, compassionate and awe-inspired emotions, and commits us to continuously enhance responsibility. (Naess 1992, 36-44) Nature is not the only causation in these relationships. In immediate encounters with nature, our particular life situations and personalities inform and are informed by our philosophies and sciences. (Thomashow 1996, 15-24) The will to ecosophy leads us beyond the analytical methods of ecology towards immersion in networks or fields of relationships. We can comprehend ourselves as participants commensurable with others whose being may be unlike our own, save that they too participate in the relationships transcending social categories and structures. We will ourselves to see beyond the different discreteness of being, into these relationships whose value is not to be suborned to our particular interests. It is, Naess suggests, a "phenomenological viewpoint...valuable for the development of a consciousness of a non-instrumental, non-utilitarian content of the immediate experience of nature."(ibid, 51) Intense ecosophical encounters with nature reveal both the limits of ecology and its indispensability.

The will to ecosophy is not analytical but synthetic, what Naess calls "both-and thinking." We can experience that there are no completely separable objects designed merely for our use. Such an experience, he argues, can be as "obvious as bus schedules." It is a method of a self-realisation beyond egoism and self-centredness, towards the self as a unity of "beautiful actions (which are) natural and by definition not squeezed forth through respect for a moral law foreign to mature human development. Increasing maturity activates more of the personality in relation to more of the milieu."(ibid. 86, 68-78) It is participatory in natural communities of life, in which our legitimacy demands admission of our ignorance of much that transpires there. (Drengson 2004) Ecosophy is a realisation of self through a transformation of what we perceive as rightfully and potentially human. It is a self-transformation towards a more complete, if not necessarily more comfortable mode of being.

The conceptual structure of this will is not peculiar to ecosophy, but rather is intrinsic to the demands of ethical reasoning. Pre-eminent among them is the will to transcend

restrictively discrete and exaggerated subjectivity towards an inclusiveness of many subjectivities, which can open us to the possibility of objectivity, despite our inability to recognise it with certainty. Ethical reasoning is inherently a self-transcendence to greater modes of being. "It is necessary to combine the recognition of our contingency, our finitude and our containment in the world with an ambition of transcendence, however limited may be our success in achieving it."(Nagel 1986, 9, 3-27, 67-71) There are no species boundaries here, no stipulated methods, only the will to conceive ourselves as instances of something larger, and hence something more than instances, and to make such a vantage point our own, "a view from nowhere." This might better be a view from anywhere or everywhere. There is a morally realistic supervenience here too, in the form of equivalent realities constituted by different perspectives, not all of them human.

Nagel's programme is not wholly consistent with Naess'. Nagel would intensify experience of the self as the ultimate, private realm, in order to know our limits and to acquire the capacity to act beyond them without the arrogance of power. Naess would have us realise our self as the environing nature within us, and we within it. Both entail some decentring of the human self, but to different ends: Nagel to objectivity, Naess to nature's inclusive subjectivity. These might be the same. This dispute is irresolvable and probably unnecessary because it need not be resolved, although a similar dilemma in nature tourism gives rise to considerable practical problems. There is a tension between programming activities to engage the participation of potential tourists in the natural history of a place and the need to guide them away from merely self-centred activities and satisfaction towards a more disinterested appreciation of nature. (Wearing & Neil 2009, 194 ff) But this practical problem cannot be managed with dogmatic programming. Indeed it may be an occasion in which the ethical dimension of tourism can be clearly and educationally experienced.

Both Nagel's and Näess' methods reveal to us an origin of ethics, a degree of self-restraint in the face of greater modes of being than our own. The will to ecosophy seeks to locate this being, thereby to formulate practical methods of self-realisation, or environmental decentring of human being. Experiencing commonality with different modes of being, we perceive different kinds of knowledge and intelligence, the realms of values and demands of practices in which self-restriction does not alienate us from our individuality, but strengthens us to bear its duties. (Boston 1997) We seek to rise above the limits of the human condition, and the even more oppressive restrictions of our contingency.

The will to ecosophy, then, is a change in perspective. This means an intention to see aspects of things beyond their apparently given ordinariness, yet nevertheless immanent in how we can experience them if disposed to do so. (Emerson 1985, 92-110) The disposition is a fundamental mode of wisdom. The motivation lies in the enriched phenomena through which we realise our self. Grimly considered, perhaps this is a response to the facts of death. Fear of death is insufficiently creative. It too easily leads away from nature and exaggerates the significance of our contingency. Sublimely considered, ecosophy is a celebration of life, a noneschatological immortality. Nature is perhaps not the only realm in which this is possible. But it can be immediate there, within a feeling of wonder at nature's expanse. At its most prosaic, ecosophy nurtures a sense of compassion from awareness of shared finitude in the midst of plenitude. Exigently faced with the complexity of the natural world, we can discover the practicality of humility, caution and wisdom

as the occasion for a transformation of our perspectives and preferences. (Norton 1987, 202-213) We are not compelled towards answers, but towards questions, or the frame of mind preceding questions, the experience of wonder.

In the realm of natural history, which is most apparent to us in our encounters with nature in places we value for their natural features, the will to ecosophy has numerous practical modes of realisation. They tend towards discovery of our complementarities with nature, and are most vivid in actions which are least dependent on exercises of power to repel, subdue, manage or consume nature. Thus liberated, we can perceive what ought to be through what we can experience nature as becoming what it is. (Rolston 1988, 328-354) We can participate in this becoming. Walking is unsurpassable for this purpose. We feel our distinctiveness in manifold relationships with other beings through this natural but supremely human activity which evokes acute observations of immediate natural features. Sometimes even vague, uninformed observations suffice. However they are, they nurture deep, particularistic attachment to place transcending other social engagements. (Plumwood 1995, 155-164)

Properly instructed by scientific ecology, preferably in a popular form, we can see a place as an instance of universal things, in which we by chance or will are situated. Situatedness imposes the responsibilities of care, which is a universal aspect of moral reasoning and perhaps its ultimate origin. (Warren 1999, 131-144) Universality transcends perception and experience. It is but a concept. The concept of place, however, is realised in our actual situatedness. In a place in which we discern universality we can comprehend our being in nature and time, both larger than ourselves and yet both intensively within us in our situation. Place can be our primary ontological commitment through which our contingency is proportioned to the duration of other beings and their time in the place. This is often much longer than our own, sometimes infinitesimally less, but all valuable. (Stevanovic 2000, 101 ff) Acknowledgement of a place wherein we dwell, even if only in passing as all dwelling is, may be an origin of environmental ethics, and hence ethics generally. It educes in us the duty of care and respect, and of wonder as well, with consequent practices.

The practices of care are often modest indeed, but through them we alter our perspectives. The ambivalences, contradictions, uncertainties and complexities of most of our actions, even the most ordinary if we reflect on them deeply enough, are opened to examination. We can scrutinise the consistency and coherence of our motivations, actions and some of their immediate consequences. (Ahonen 2006, 72-85) The frequent suggestion that an environmentally responsible lifestyle is excessively demanding can be demonstrated as wrong, or at least premature.

Here too is one of the goals of nature tourism. It can simplify our experience of place and thereby intensify it towards appropriate practices. Nature tourism can demonstrate the axiological ontology of place precisely because it is a sojourn out of home, hence out of ordinary routines, habits and expectations. By organising for tourists place-dependent interactions with a natural environment, it can nurture a satisfaction in the natural features transcending whatever activities may have induced it. From this satisfaction may grow emotions, self-awareness and behavioural commitments governed not by self-centred interests, but rather by bonds to the place and through it with other persons similarly satisfied. (Ramkisson et al 2012, 258-261) There may be as yet little evidence that this

transitory place dependence leads to significant behavioural and attitudinal change. But the experience of the satisfaction anticipates realms of ethical, axiological and ontological possibilities. Even modest and brief practices enhance perceptions.

I have been promising practicality and still it eludes me somewhat. It may be more obvious in an examination of duty, to which I shall turn shortly. But to consider, let alone assume duty and act on it, we need an overriding motivation. A mature ecosophy may provide this, but few of us have or can sustain one. We must be motivated despite our ordinary interests, habits and entrenched frames of mind. The motivation may be ephemeral and situational, but each experience of it may leave us enriched at least with its memory and with the knowledge of having acted from virtue, however inchoate and conventional our notion of virtue may be. It might be implausible to stipulate a duty to prudence. We never know enough of the future. (MacIntosh 2007, 230-250) But it is a powerful motivation to exercise will-power to attain wisdom, possibly ecosophy. At least it allows us to respond to its possibility, and curtails our innate tendency to human arrogance. Prudence disciplines our desires and fortifies our resolutions to right and good.

For Emerson prudence is a practice of self-restraint from what we can know to be unnecessary or harmful, and therefore it is an exercise in self-governance and self-reliance. He finds occasion for prudence above all in appreciation of a natural things of beauty, through which we can acquire a "virtue of the senses," so immediately given in voluntary and benign encounters with nature that no person can fail to experience it. "Prudence does not go behind nature and ask whence it is. It takes the laws of the world whereby man's being is conditioned, as they are, and keeps these laws that it may enjoy their proper good."(Emerson 1950, 239, 237-248) In providing us passage to places of natural beauty, nature tourism provides us likewise with an occasion and community for prudence.

The will to ecosophy, then, may be engendered and nurtured by appreciation of natural beauty when we have no other interest to mediate it to us. This can refine our aesthetic sensibility and give us the strength of mind to seek excellence in our lives at least at that moment, however circumscribed. Beauty, which may be an indication of ecological well-being beyond human interests, educes from us a respectful will, emotional wonder and an ecological praxis of direct relevance to our impact on the things of beauty. (Grange 1997, 227-244) Encountering natural beauty, we can transcend our conventional fragmentation among exigent social interests. Grange argues that aesthetics is the guiding discipline for an environmental cosmology which, without metaphysics or mysticism, allows us immediate appreciation of natural plenitude, harmony and fullness of being, and their rightful demands on us. (ibid, 145-158) We perceive dimensions of truth, good and right, without much cumbrous conceptual effort. He errs in optimism, perhaps, because our aesthetics have also been corrupted. However, of all experiences in transforming ourselves from social self-centredness, appreciative wonder of natural beauty may be the most universal.

Beauty takes us beyond reason, science and technology, and brings to bear on our emotions intimations of realms of being that would have us act in ways beyond our ordinary manner. It realises natural values as natural facts, whose exigency is compelling no matter how dominating is our ignorance, or worse, our ostensible knowledge. (Curry 2006, 18-30) Encountering beauty, we confront ourselves as we might be, and as our wonder itself demonstrates that we can be. Nature, Emerson observes, "...is loved by what is best in us... (calling) us to solitude."(Emerson 1950, 411, 406-421) Nature tourism does not in

vain take us alone or in small groups to places of natural beauty, merely for economic or organisational reasons.

Rolston similarly grounds environmental ethics on such an aretaic appreciation of beauty. Encountering excellence beyond ourselves, we experience our own and thereby bring excellence into our character, at least in the act of appreciating natural beauty. We can discern a duty to "our higher selves" which is not onerous, but self-evident. (Rolston 2012, 113-116) There is a danger, he admits, that the virtue of excellence may displace respect for nature and overfeed our self-complacency, if natural beauty is valued only to the extent that we become better persons. But in situations which call upon us to express excellence in palpable acts to respect nature, such a self-centredness recedes in the face of other virtues, such as benevolence, gratitude for nature's beauty, awe and humility in acknowledging that we cannot better it. These emotions lead us well towards ecosophy.

But beauty is not self-evident and may induce in us other emotions than excellence. Nature tourism may assume a responsibility it cannot meet if the concepts and experiences of beauty are trivialised. Tourism activities not only provide us with occasions of beauty, but also construct them on grounds possible less than respectful of nature. Beauty may be a contrived violation of natural history. Beauty, or aesthetic appreciation, entail a disinterestedness in claims on the natural features and history of a place which may not cohere with tourism's demands or impacts on it. (Todd 2013) 65-73) Trivialised aesthetic appreciation, or natural features of beauty reduced to commodities and resources of tourism activities, will not engage the knowledge and attitudes of respect for nature sufficiently broad to cohere with the natural history of a place without the presence of tourists. Nature tourism must reveal forms of beauty to us which do not wait upon our appreciation. Such is the scope of the well-being and flourishing we can intuit in beauty.

Nevertheless beauty is an experience of excellence if we are careful to proportion it to broader notions of aesthetic values. The aretaic appreciation of beauty is not contrived. But the best in us needs confirmation and practices shared with others. Solitude must be proportioned by community lest it become arrogance or despair. Aesthetic appreciation of natural beauty is a will to ecosophy and a motivation to ecological practice, but it is still too inchoate. I must continue to contrive a conceptual structure for nature tourism, no matter how artificial, in order to discern how it may develop ecosophy and thereby sustainability. The next step is ecological duty, which is at once the essence of ecosophy and a means of striving for it. Beyond aesthetic wonder, duty is a conceptually and emotionally necessary response to natural beauty.

ECOLOGICAL DUTY AS A FIRST PRINCIPLE OF NATURE TOURISM

> *There is something servile in the habit of seeking after a law which we may obey. We may study the laws of matter at and for our convenience, but a successful life knows no law. It is an unfortunate discovery certainly, that of a law which binds us where we did not know before that we were bound.... The man who takes the liberty to live is superior to all the laws, by virtue of his relation to the lawmaker.*

> *Henry Thoreau: "Walking"*

A duty is an act we are bound by moral or conceptual precepts to do. Duty as an ethical attitude is a wilful recognition of the rightful claims of duties on us, a disposition to discharge them prior to pursuit of other interests. A life governed too much by duties is onerous, and a life with none is but selfish frivolity. Neither course is sustainable. To take duty seriously, duties must not be too numerous, complicated or demanding, but they must be significant. Their significance depends on the extent to which they realise right and good. As conditions of collective being, right and good inhere in community. Duty is commitment to community whose right and good we acknowledge as binding on us.

A sufficiently inclusive environmental ethics, or more strongly, an ecological ethics, may be the necessary foundation of ethical behaviour from duty. "To be ethical is to reflect on considered principles of right and wrong and to act accordingly in the face of temptation."(Rolston 2012, 56, 56-60) It leads to self-transcendence to the degree that we can decentre ourselves from our concepts, commitments and experiences, relocate ourselves in our natural environments, and reconstitute ourselves as residents therein. Discharging a duty may entail a risk of forfeiting will-power if we do not comprehend the origin and rightful purpose of the duty We must take the risk, or at least assess the possibility, that duty may spoil the aretaic emotions of appreciating and respecting nature. We must search for significant realms of duty which do not do this.

In the foregoing account of sustainability and ecosophy I have indicated the necessary entailment of responsibility, and its sterner sister, duty. In its practical imposition on disposition, character and behaviour, duty is essential to the frame of mind of sustainability, and to the experience that ecosophy is possible as well as to comprehension of its substance, even when unformulated and inchoate. Unfortunately definitions and designations of duty are arbitrary. They serve to justify certain beliefs as desirable or necessary and to stipulate what values and practices must follow from them in order to prove them desirable or necessary. Rather than inducing us to reflect on considered beliefs, they may define and circumscribe them within arbitrary confines of permissibility. This is not ethics, at most moralism. Arguments for duty are circular. This is most obvious in the notion of prima facie duties, but it is no less true in more complicated doctrines, such as contractarianism, diverse modes of deontology and rights based arguments for good. (Dancy 1993, 219-229) In each case, the reasoning ends in a tautological assertion that duty is a truth and must be done because it is both true and a duty. Appeals to law lead only to abdication of autonomy and ethical reasoning.

The tautology is present also in environmental ethics. But we must not let it hamstring us. It is possible to originate duty in some fundamental, not wholly arbitrary assertions about nature, and then to infer some of its practical consequences as specific duties to and concerning nature, which can be seen through scientific ecology to be for the good of nature, and which can be reinforced by an intensified encounter with it. The circularity may also move the other way, from specific practical duties in places of nature to respect their natural history, whence we discern duty as an ethical relationship towards nature generally. In neither case is the tautology evaded. It is embedded in scientific demonstration and descriptive narratives of natural facts and in actual experiences of natural history, their philosophical or metaphysical interpretation and the emotions of encountering nature.

We can break through the tautology by how we encounter nature, which is intrinsically a personal experience. We need not heteronomously submit to nature through an abdication of will to right and good which may not wholly inhere in natural history. Still less do we submit to a social community usurping the capability to define and represent right and good. Duty in and to nature is intensely personal. It may in fact originate initially not in a benign but in a hostile confrontation. Emerson, for example, posits two forces in nature: fate, or its causal, material necessities; and will and freedom, through which we can see and act on truth, subject to fate but not dominated by it, save possibly in death. (Emerson 1985, 549 ff) This will is duty: to comprehend the purpose of existence, to avoid loss of our integrity and to express our humanity in the noble aspects of nature. "...Freedom is the accomplishment and perfectness of man."(ibid, 555)

Here too Emerson is arbitrary and indemonstrable. But in locating freedom, which we can justify on numerous grounds, within nature, he indicates a way towards duty in and through nature. This is ecological duty. One aspect of this is that we can feel duty not as a constraint but as a virtue because through it we can approach perfectness, or excellence at least, without needing confirmation or approval from others. This notion of virtue, to which I shall return below, is not primarily conceptualised as particular dispositions of character, but rather as a feeling for and commitment to an excellence we can comprehend as a fine inner state when we perform right acts intentionally from virtue. (Swanton 2005, 19-30) It is culmination of autonomy in wisdom. This cannot be demonstrated, but it can be experienced in aretaic encounters with nature.

A second aspect of this reflective reasoning is that the will to freedom must emerge in interaction with fate, which is most palpable in encounters with other beings beyond our control, unless it be their destruction, which is a self-negating control. In our freedom we comprehend their freedom. Contrary to Emerson, we need not experience fate as a countervailing force to freedom. It can be rather the situations compelling us to strive for freedom that we might comprehend events. We understand that freedom is not a peculiarly human situation or aspiration, but a force of nature impelling nature in its manifold beings towards the excellence of their own kind. We see what Spinoza calls conatus, the essence of being to become as perfect as its existence will allow. (Spinoza 1989, 91 ff, 157 ff) The mere fact of our intercourse with beings unlike ourselves is both an origin and an experience of duty, involving no specifically human justification. We need only imagine, or see, the consequences of denying it. (Midgely 1995, 98 ff.) A perfectness of being may be beyond comprehension; stunted, warped, corrupted being is easily perceived.

We might comprehend somewhat how conatus transcends the ontological boundaries we customarily impose on nature in order to analyse and dominate it: the boundaries of human and nonhuman, sentient and nonsentient, living and dead, life and matter. The notion of conatus alerts us to the "distributive agency" of "confederate bodies" in which human intention is but one mode of purpose. (Bennett 2010, 31 ff) All properties are emergent from webs of intercourse. This is the essential feature of conatus in its quest for the fulfilment of being in perfection. Human purposiveness is not devalued, only decentred, and enlarged by its relocation in the "ontologically heterogeneous assemblages" of nature. The curious terminology is not necessary. The point is that nothing in nature is alone, but exists in its place defined by the existence of other beings and entities. Being is wholly relational.

Duty may not encompass all these interactions, but there is no necessary limit to it. Through it we can experience our own excellence as participation in the conatus of others, if we can muster the will-power. Hence duty can appear to us in our capacity for a concept of nature transcending both human interests and human knowledge. (Rolston 1988, 71-75) We accomplish an excellence which entails no superiority or exercise of power but an intense awareness of being. We can feel duty as an appreciative understanding of some aspect of nature, and ecological duties as actions consonant with this understanding. Thus formulated duty can lead to a momentous change in how we experience human purposiveness and agency. We develop from empowerment to what Stevanovic calls "attunement" to the ethical values of being in a place, encompassing all forms of its being. (Stevanovic 2000, 118-136, 170 ff) Duty becomes a narrative of residence in a place. We need not impute duty to other beings; it suffices that it is our mode of being, appropriately enhanced with other emotions and virtues of excellence.

Nature tourism can provide occasion for these emotions and virtues, even if it takes us not as residents of but as visitors to a place, on whose residents we impose ourselves. If we are not attuned for these emotions and virtues, duty will be failed or denied. Attunement is a purpose of nature tourism activities of "interpretation," which is not merely informative natural history but a "revelation" of natural events and features as phenomena to be appreciated with wonder. (Wearing & Neil 2009, 95-114) Hence nature tourism seeks no less than a fundamental change in attitudes and behaviour, in character. It seeks to refine our senses and perceptions by empowering us to the self-discovery of insights about nature through immediate observation and contemplation of the natural history of a place. Its scope, destinations and activities must be proportioned to this intensely personal experience. Nature tourism can confront us with an occasion for duty which we might not seek were it not embedded in voluntarily assumed recreation. Activities of interpretation in this sense may be definitive criteria of nature tourism.

The freedom to pursue excellence in duty to nature leads to two distinct conceptual realms within which particular duties can be formulated and practiced. Both are at the heart of nature tourism, constituting its possible relevance to other fields of public policy and its appeal as a motivation to persons whose capabilities for environmental responsibility are circumstantially limited.

One of these realms is ecological justice, in its sternest meaning of the recognition of and respect for the good of natural beings and entities and their right to this good, without reference to their usefulness to people or society. The conventional, anthropocentric bases and concerns of justice no longer suffice when human impact is visible on nature for both good and ill, in ways which in even some small measure can be ameliorated or directed. An ethics of care may be too weak unless embedded in practices far greater than the practices of care, albeit necessarily including them. This realm of justice is both within and without society's political structures of justice, expressing duty which is comprehensible not by abstract reason but by real relationships with nature. (Low & Gleeson 1998, 39-49 ff) It is not to be reduced to merely conceptual language, but rather expanded through an extending range of morally significant actions, whose justification cannot lie wholly or even primarily in their impact on the self. (ibid, 134 ff) Freedom confronts us with things greater than ourselves.

The specifically social demand on us from ecological justice is to develop procedures for interacting with beings and entities of nature which in effect consults them about their

good and the rightfulness of respecting it, even to our own inconvenience. Reciprocity is unnecessary for our will to do this. It sufficiently inheres in our participation in their agency, which at once can enlarge and discipline our own several modes of agency. "We need... to devise new procedures, technologies and regimes of perception that enable us to consult nonhumans more closely, or to listen and respond more carefully to their outbreaks, objections, testimonies and propositions."(Bennett 2010, 108) By taking us deeper into the nature of a place, nature tourism can be a technique of consultation which observes primarily the agencies of its beings. We do not interpret nature primarily for our benefit; attunement is not primarily our good, although it usually is that as well. Expanding our domain of being thereby, we express our own conatus, each individually and each for the human species. We relocate ourselves individually and the human species within natural history to the extent the natural environment of a place will permit.

This indicates the second realm, the experience of excellence through nature as a culmination of the rightness of one's own being, an aretaic justification transcending our social characteristics and situations. This may be an experience of the natural self, constituted by our palpable practices in, for and with other beings of nature. (Drengson 1989, 45-49) It also opens us to a metaphysics of ecosophy, from which we may derive our purpose of being, our life as a natural teleology in which action is not an instrument for self-interest but a participation in natural causation, in *natura naturans*. (Anker 1998) What we experience of our self must be imputed to other selves, lest our own forfeit intelligibility.

Teleology comes to inform nature, not in the Aristotelian sense of final cause but as a duty of proposing oneself as a being of nature, justified by it and bound to it. It is a realm of profound personal conviction of and commitment to an ethically necessary state of being within the scope of our own efforts, along and through community. We immerse ourselves into natural history, not to manage, dominate or destroy it, but to enrich our own purposes with the purposiveness of agencies unlike our own. (Bennett 2010, 116 ff) Often this entails a curtailment of our purposes, that we may reorient them into natural history. To do so to excess would of course be to forfeit sociality. Not to do so at all forfeits our naturalness.

Nature tourism allows us to play somewhat with this mode of freedom, to see how far we dare take it, in relative safety. Freedom in this sense is not action, or a right to a programme of liberties. It is a mode of being, for which justice demands restraint. The apparent paradox may be exigent in nature tourism if an excessive focus on self-centred activities, performances, induces indifference or blindness to natural history. The freedom of the nature tourist is an emotional attachment to a place, an empowerment to a sense of wonder and well-being of the self within its natural history, and for its good. To the extent that nature tourism activities are not intended to this end or fail to attain it, to that extent it fails in rightful interpretation. (Holden 2008, 55-58) It ceases to be nature tourism.

Together these two realms of freedom lead to something close to Rawls' notion of natural duties to justice, but with a more substantial grounding than his conceptually deductive reasons for justice. Rawls' stipulations are demanding. Natural duties are arbitrary, involuntary, defined neither by rules nor reciprocity, but by comprehension of necessity. (Rawls 1973, 114-117) Taken together they form a duty to justice independent of social structures and beliefs, and a commitment to ensure that a minimum of justice prevails throughout society. If this is not the case, social obligations are to a correspond-

ing extent weakened and the duty to commit to change strengthened. Unjust law cannot compromise natural duty, which finds its motivation in the prospect of a society truly governed by justice. It is a "duty all things considered," intuitive perhaps, but verifiable in many ways. (ibid, 334-342) It is owed others no less than ourselves. It seeks the greatest potentiality of being overall, a mode of excellence in which our own individuality is both sublime in and diffused through nature.

Rawls' argument for natural duty is derived from his conceptual justification for social justice, arrived at from diverse vantage points through a process of reflective equilibrium of numerous concepts, motivations, interests and facts of being. (ibid, 48-51) Each person is the author of her own duty to justice, but her justification is not personal only. It is also transpersonal and grounded in a coherence of other beliefs, values, interests and motivations whose validity can be reflected and reinforced by other persons similarly situated. Such a coherence can be attained in experiences of nature conducive to the nurturing of ecosophy perhaps more profoundly than a Rawlsian deduction. This is a task of nature tourism. We do not need a hypothetical, fictitious and impossible original position. We do not seek the origin of duty in the obligations of contract and reciprocity. Coherence of beliefs, within each person and among them, can follow from an intense encounter with nature if we have sufficient leisure and security to contemplate nature and our beliefs about it.

Nature tourism is a philosophical endeavour, even if the persons involved are unaware of this. But it is not committed to any particular philosophy of nature, beyond an inchoate respect for it. (Fennell 2008, 223-225) The demand it makes on nature tourists, which can be construed as duty, is to demonstrate respect through actions, attitudes and feelings whose consistency can reveal aspects of one or many philosophies of nature. Their possible coherence in further actions can lead to recognition of ecological duty and the motivation to act on it from virtue. Nature tourism clarifies the profiles of ecological virtues, but it does not entail final commitment to any particular philosophical justification of them. It is sufficient, indeed unsettling, that it allows us, each alone individually and together in community, to experience our presence in a place which is not dominated by or committed to our purposes, or in need of our presence. It forces us to be free, and empowers us to duty.

Nature tourism does however create situations in which certain tendencies of philosophical reasoning may seem adequately plausible, particularly to those tourists who do not explicitly exercise it, as indeed few will have an inclination or need to do. Plausibility follows from Taylor's definition of respect for nature as, among other things, a set of dispositions to make value judgments, adopt certain ends, recognise the means to these ends and to do so with feelings conducive to deepening the respect. (Taylor 1986, 80-90) This self-reinforcing cycle of duty from virtue can become an essence of character, which elicits reflected reinforcement from other persons who together justify the duty in shared comprehension of what principles would obtain in a possible world of respect for nature. In a small way, nature tourism creates such a world in particular places at particular times. As an accessible passage to nature, even in circumstances otherwise denied it by the exigencies of relentlessly conventional life, nature tourism can be an opportunity to experience the meanings of life. Emerson discerns the magnitude of such an opportunity. "Cities give not the human senses room enough." He must go to a forest. "Here we find Nature to be

the circumstance which dwarfs every other circumstance.... It seems as if the day was not wholly profane in which we have given heed to some natural object."(Emerson 1950, 406-408) What we might discern on such a day can commit us to shared and acknowledged virtues within the reach of our capabilities.

The central insight of respect for nature is the inherent worth of natural beings and entities, each with a good of its own without reference to any anthropocentric instrumental value. Recognition of inherent worth is both an origin of duty and a prima facie duty in itself. (ibid, 71-80) This necessarily follows from the notion of inherent worth, which entails a commitment to its continuation, hence duties to act or refrain from acting in ways beneficial or harmful to the inherent worth. Any other inference is not only incoherent but a denial of worth, whatever worth it putatively has can be discarded, degraded or destroyed. To perceive inherent worth is to acknowledge the limits of our purposiveness.

These limits entail duty. Duty is arbitrary, but as it becomes refined in ever more specific actions and knowledge of their purposes and consequences, it can be confirmed to the extent that we understand the conditions of rightful being and our own contribution to them. We will approach, necessarily in Taylor's view, a biocentricity which is comprehensive, coherent, conceptually unambiguous, enlightened and objective, and which as such need not be proved by any sophisticated passages of philosophical reasoning. It is "...the only appropriate attitude for moral agents to take toward the natural world and its living inhabitants."(ibid, 167, 156-168)

Not everyone shares Taylor's dogmatism. Fortunately, it is not essential to his straightforward rules of dutiful conduct from virtue, such as nonmaleficence towards nature and non-interference in it, fidelity in accepting the conditions of the wild as the limits of our impacts on it, and restitutive justice when inevitably we transgress. (ibid, 169-192) These rules can be practiced in many ways, some of which are within the scope of nature tourism. But their practical relevance, and their status as rules of duty, do not require adherence to Taylor's doctrine. Many other doctrines, from different starting points and towards different ends, stipulate equivalent duties. Coherence need not be restricted to any single philosophical doctrine. It can embrace many, and equally many courses of action. There is no necessary entailment from doctrine to specific practices, and dutiful practices can be justified on many grounds. This is not to be taken as anything goes. While conceptually pluralistic, respect for nature is nevertheless a strict discipline on the permissibility of human interests and their requisite actions. Its purpose is not to control thought, but to enrich and extend it.

Conceptual and practical diversity is intrinsic to ecosophy, with only the stipulation that we seek ever more obvious, normatively coherent behaviour through our beliefs and practices. (Naess 2006, 14-28) Naess' ideal is a full consistency of doctrine and practice within a "widely shared ethos" at a general level, such as respect for nature or the premiss of nature's intrinsic values. But he admits that ethical actions can be little more than "fragments of total views," which he suggests are but "useful fictions" in any case. We can be bound by a basic duty to discern unsustainable contradictions in our concepts of and relationships to nature and seek to adjust them towards a more ecosophical equilibrium. Incoherence is not remedied by dogma, nor is it sustainable. The duty to coherence in beliefs, interests and behaviour is merely a primordial necessity of the human condition. Without it we cannot flourish. If nature tourism can demonstrate to us

dimensions of incoherence and indicate how we might remedy them, it brings us to an origin of humankind.

Ecological duty, then, does not commit us to any particular philosophical doctrine, but it does impel us to inquire into our beliefs and to pursue ever more inclusive "naturocentric" coherence in our beliefs, values, knowledge and practices. Virtually all environmental philosophies contribute to this. Rolston, for example, starts from a naturalism in ethics to derive duty out of values which in turn are generated by our manifold interactions with nature, individually and collectively, in history and in the future, economically, culturally, scientifically, aesthetically and emotionally. (Rolston 1988, 1-27) By "following nature in a tutorial sense," through knowledge of its laws and conditions and from values which can be experienced as a dimension of our own integrity and inherent worth, he argues that we can comprehend when to extend rights and inviolabilities to nature in order better to realise the conditions of being in ourselves and in the fullness of all our relationships. (ibid, 32-56)

Rolston's approach is not conceptually biocentric, in part because he holds that we can assert our integrity best in specific situatedness, and perhaps only there. He thereby focuses on human communities within their determining natural conditions, a "communitarian holism" revealing emergent ecological order in real places. (ibid, 162-176) Integrity and inherent worth are as much communal as individual, and so too duty to nature. He is both more communitarian and less individualistic than Taylor, more specifically situated in nature and less conceptual about what nature is. He stresses the aspects of our experiences, such as appreciation of natural beauty, which entail duty-bound practices beyond the extension of conventional ethics to nature. Whereas Taylor grounds biocentrism on the way nature is, Rolston seeks duties to the many ways it might or ought to be. The facts of nature indicate, through supervenience perhaps, values we can assume as duties with no more sophistication than is necessary for a receptiveness to nature's features. (ibid, 225-232) We do this in, through and for community which is not exclusive to its human members.

There is no necessary conflict of practice between Taylor's and Rolston's doctrines. However Rolston may bring us closer to the actual practices of nature tourism. Most definitions of nature tourism or its closely related concept of ecotourism stress the need for community influence, control even, over the tourism's impact on a place's natural environment, and thereby not only its programme of activities but on its commercial and ecological structure. (Wearing & Neil 2009, 115-136) There are sound pragmatic reasons for this, such as the need to manage the delineation and distribution of costs and benefits in order to avoid exploiting the community and thereby reducing its natural environment to a mere resource or commodity. Similarly a community's own identity informs its concepts of nature, and respect for these concepts inheres, if not always unproblematically, in tourism's respect for nature. If nature tourism is exploitative and intrusive to the community of its destination site, it cannot induce respect for nature as an inclusive ethical attitude. Nature tourism is duty bound to refuse such exploitation.

This duty is particularly exigent, and its discharge difficult, if the nature tourism is an elitist, western intrusion into places of putatively pristine natural features in non-western societies, as is often the case. (Cater 2007, 47 ff) Respect for nature through nature tourism cannot be a mode of cultural imperialism demanding that local interactions with

the natural environment be displaced by tourism's activities. However, local uses of and impacts on natural environments are not necessarily respectful or sustainable. Nature tourism has a duty to recognise and seek to diminish exploitation of nature however and wherever it occurs, without assuming that is own practices and impacts are necessarily preferable. Ecosophy tends, we must hope, to universality, which must demand of us a critical assessment of our own culture and practices no less than of others.

An apparently more conventional approach, if no less thorough in its implications, and which may avoid somewhat the clash of cultures, is Attfield's argument that obligation is the key to ecological ethics and the origin of duty. Initially this is reciprocally explicit recognition among people of shared interests concerning nature. But once this dimension is admitted, with a scale of time and events far exceeding whatever can be mutually agreed on, the notion of obligation through nature or concerning nature is detached from the conventional conditions of reciprocity to become unilaterally assumed duty with no other party save future generations of persons as well as natural beings and entities. (Attfield 1991, 89-110) Transcending an origin in reciprocity, duties need not rest on explicit recognition but can be owed by us to and through features of nature, on the condition that the entailed action can be performed. (ibid, 156-162) The burden on each of us, then, is to know what we can do, whence we acquire the right to do, to govern that right by our consequences for others as well as for ourselves, and to enlarge the scope of our knowledge and emotions.

This burden is the duty of coherence. To this we are obligated explicitly to others with whom we share even in passing some natural environment and to that extent, and implicitly to those who will succeed us in it, and to its natural inhabitants. Obligation entails duty as its necessary condition, and duty extends the remit of obligation. Duty to nature does not depend on acknowledging obligation and cannot be refused by denying that we are obligated to any specific people. But by comprehending the extent of our obligations and purposively adhering to them we can become aware of duty and invest it with modes of practical duties.

This argument can be strengthened by another frequent, if contentious concept of environmental philosophy, the intrinsic value of nature. Attfield assumes intrinsic value as a given reality independent of our recognition of it. It becomes a reason for duty immediately on being recognised, however inchoately. (Attfield 2003, 55-58) To admit the possibility of intrinsic value, even with an unformulated understanding of its possible meanings, is already a commitment to a non-instrumental relationship to nature, at some time and in some place at least. (Jamieson 2008, 68-75, Vilkka 1995, 18-26, 47-56) This commitment entails duty. If it is incompatible with other prevailing values and interests, it leads to a dissonance of "moral distancing," an admission of values which cannot be acted on, and thus without significance. Here too is the primordial duty of coherence.

To anyone who takes duty seriously, this is unsustainable, although sometimes unavoidable. Dissonance reveals incoherence which reduces our capability to self-governance. Thereby we jeopardise our sociality, our effectiveness in pursuing our interests in community with other persons. An experience of intrinsic values in features of situated nature can motivate us to strengthen our obligations with them for the good of nature. As Attfield argues, explicit reciprocity of obligation with others to some mode of behaviour consistent with some situation of intrinsic value can be a motivation for duty through

and possibly to nature. (Attfield 2003, 73-84) Nature tourism provides an occasion for such practical reciprocity.

A less contingent version of this argument is that while duties to nature may neither generate nor derive from intrinsic values, the language of duty facilitates perception of them because duty itself intrinsically entails a non-instrumental relationship to whom- or whatever it is due. (Vilkka 1995, 159-173) Duty entails values in which inhere rights extending beyond their conceptual formulation. Right is not a declaration of our claims to act in specified ways, however benevolent. It is a property supervened on natural facts which we can discern if we perceive adequately. When we recognise duty, we sharpen our perceptions. Duty leads us to act as if rights were real, and so they become, at best even codified in society's constitutive rules and norms. Duty, rights and intrinsic values constitute a self-enhancing coherence of practical respect for nature. The more coherence is vested in community, the stronger it is, the less vulnerable to stochastic disruptions, and the clearer its duties. If nature tourism can effectively demonstrate that through some actions some persons at least recognise the rights of intrinsic values in the natural features of a place, it creates a recognisable claim for these rights to be acknowledged more widely in other actions as well.

As the possibility of cultural clashes indicates, it is possible to be uncompromising in respect for nature without however admitting any given state of a natural environment as final or as the object of duty. Duty is rather intended to realise a social order in which ecological potentialities, both human and nonhuman, are preferred on normative grounds and hence pursued in order to refine natural features and through them the human condition. Such is one purpose of Bookchin's social ecology. Nature is incomplete and unactualised partly because of the destructive impact on it of an unsustainable social order founded and dependent on violent hierarchies. (Bookchin 1990, 27-32)

The overriding duty of anyone devoted to nature is to emancipate human potentialities for freedom from this imprisonment. Emancipation is both a social task of revolution and reconstruction and an ecological task of giving a "voice" to an otherwise "mute" nature, to create natural environments conducive to non-hierarchical social structures. (ibid, 40-48) This is intentional intervention into evolution in order to evoke the best features of human character and the richest fecundity of nature. Duty is necessary to discipline Bookchin's teleology. That in turn can suggest a set of actual duties necessary to coherence, if they can be expressed in specific places. Bookchin's doctrine of "libertarian municipalism," a political expression of social ecology, anticipates one kind of social order in which this kind of duty might obtain. (Bookchin 2002, 1-14) Nature tourism may prefigure such a community. It is not only located within real communities; it also may constitute one, for more restricted yet ethically informed purposes.

The wild is an element of nature to be preserved, but not necessarily the sole purpose of duty. Only through active immersion into nature can our responsibility for both the social and natural environments be discharged. The ideal is a "free nature" in which the ethically selected potentialities of both nature and society are maximised and yet continuously evaluated and altered when shown to be inadequate. Bookchin's paradigm can be seen in nature tourism in selecting certain places for its operations and seeking to preserve or enhance those features which make it viable. This is particularly noticeable in nature tourism's urban locations, which is one possible means of duty towards urban

nature. (Booth 2008, 68-86) Because the immediate demand for environmental change may be more obvious in these circumstances than in the wild, the entailed duties may be more exacting.

Social ecology is contentious in environmental philosophy because it extends duty deep into natural processes in order to influence their possible outcomes. But if this is a problem, it obtains no less, if perhaps less obviously, in any relationship of duty to nature. Duty itself is contentious and problematic, the more so when owed to nature.

Clearly duty as a first principle of nature tourism cannot be a facile programme of what it must or must not do in and for nature and with its clients. Rather duty sets both tourist operators and clients the formidable ethical and conceptual task of creating some degree of coherence in the purposes, activities and impacts on nature in order to demonstrate respect for it on the specific terms it presents in the natural features and history of a place, without thereby imposing on nature a restrictive ontology of what it is or must be. Duty is recognition of this problem, not its resolution. The problem is probably irresolvable, but unavoidable nonetheless, and duty inevitably contentious. The philosophical task of nature tourism is to demonstrate in ways immediately comprehensible and realisable to anyone who assumes the burden of being a nature tourist that all our axiological interpretations and ontological conceptions of nature are inadequate, the more so the more they derive from or strengthen our own assumption of human exeptionalism within it. Nature tourism can broaden our experience of nature by bringing us to comprehend that there is always more to it, beyond our experience. Any encounter with nature is incomplete. Nature tourism is an exercise in "ontological multiplicity" in which the more compelling its activities are in revealing something of what nature is, the more we must be empowered to acknowledge the imperfection of the experience. (Grimwood 2013, 19-28) Duty is a commitment to an ethical and practical coherence which will forever fall short of our aspirations. But for a brief moment in a small place, nature tourism can guide us in a right direction.

CONTESTING ECOLOGICAL DUTY

> *Life consists with wildness.. The most alive is the wildest. Not yet subdued to man, its presence refreshes him... I rejoice that horses and steers have to be broken before they can be made the slaves of men, and that men themselves have some wild oats still left to sow before they become submissive members of society. Undoubtedly, all men are not equally fit subjects for civilization; and because the majority, like dogs and sheep, are tame by inherited disposition, this is no reason why the others should have their natures broken that they may be reduced to the same level.*

> *Henry Thoreau: "Walking"*

We need duty to restrain ourselves, not to reduce us to slavish tameness, but at least to respect wildness when it is encountered. But not all wildness is benign, and we have no call to accept it on whatever terms it presents. Ecological justice is meant to enrich humankind and our social orders, not to alienate us from our sociality. If duty denies

our humanity, it is incoherent. But in any context, duty is a contested concept. If we are not clear about its origins, purposes and limits, we shall not be able to formulate duties which impart practical content to ecosophy, or even to experience ecosophy at all. Nature will remain alien, to be feared, fled or conquered. Ecosophy entails a richer relationship to nature, and ecological duty is its necessary praxis. But it is never easy or self-evident. If we do not try to resolve its ambiguities, contradictions or excesses, we shall endanger its coherence and relevance.

It is much beyond my scope here to discuss all the problems of duty, but within the narrower perspective of duty to nature, several of the more exigent ones come immediately to light. They present difficulties for nature tourism and must be born in mind when planning and carrying out its activities. To the extent that nature tourism delineates these problems as fundamental to all our relationships with nature, it does us a service even when it fails to resolve them, as fail it will. But if it does not address them in both its marketing and its activities, and in its educational impact on its clients, it will not contribute much to making arguments for environmental responsibility and ecological justice more effectively persuasive. The problems have no necessary logical or sequential order, but there are some relationships among them, which can often be observed in practice.

To start with the most conventional notion of duty, a standard argument is that two dimensions of reciprocity are necessary if any stipulation of duty is to be binding, convincing or even intelligible. One dimension is reciprocity of acknowledgement, agreement or contract among the parties whose duties impinge on one another. This is usually linked to the condition that the parties share some essential features, such as moral subjectivity, which enable them to assume and exchange duties through mutually recognised and relevant practices. The second dimension is reciprocity of duties and rights, one party's rights leading to another's duties to respect those rights, and one's claim of rights indicating expectation of duty from others, as well as from oneself. Even without an explicitly contractarian basis, which in some modified mode informs nearly all doctrines of social justice, these reciprocities seem valid as the minimum consensus for a system of duty.

But with duty to nature, neither reciprocity holds, although specific duties to nature can be formulated within them, and duties among persons concerning nature may be justified by them. Ecological duty entails the attribution of practical and in some cases perhaps indefeasible rights to natural beings and entities, which is a plausible legal possibility. This approach can however easily be dismissed as merely an imaginary projection of one's own values to different kinds of beings which lack capacity for reciprocal duty, and hence no more binding than any figments of imagination. (Hare 1989, 236-253) Duty demands a firmer grounding than fictions.

This argument is possibly valid for purely social duties, save those to future generations of persons, or presently incapacitated persons such as infants or comatose patients. In such cases we project, but we cannot plausibly hold that the objects of our projection are fictions. But without widespread individual and communal adherence to some of the difficult passages of ethical coherence which I have indicated above, the argument fails insofar as it either anthropomorphises beings of nature, reduces them to fictions of human imagination or suborns them to mere good will or stewardship. Respect for nature is not demonstrated. It is an ultimate attitude, not a mere consequence of another. Nature tourism may assist us towards coherence, but alone it is not sufficient. We risk declaring duty

by decree and jeopardising even what little ecological responsibility we have attained.

In an even more fundamental epistemological sense, the contractarian argument against duty to nature is inadequate. It involves a narrowing of the scope of rational and reasonable thinking to exclude both imagination as a possible access to reality and emotional recognition of the broad range of factual commensurabilities between human beings and other natural beings which can create shared values. It impoverishes our experience of nature either by excluding it from the ethical realm of duty or by embedding it in an artificially narrow conceptual structure of duty demonstrably valid primarily in our acknowledgement of social duties. Duty to nature is displaced by social duties, and our encounters with nature correspondingly narrowed and our responsibility compromised. But we can imaginatively discern reciprocity with nature based on features we share with natural entities which have stronger grounding than imagination alone, however much it is a means of gaining access to them. (Midgely 1995, 89-103) The reciprocity may be but an exercise of will-power, unilaterally stipulated, and so not really reciprocity at all. But it is no less real thereby. Imagination, in turn, may suffice to predict the consequences of a total denial of any kind of responsibility to nature, a doomsday prospect.

Imagination unfortunately is an undisciplined form of thought. It also requires the discipline of coherence lest it run wild and estrange us yet further from nature by clouding our perception with fictions. We cannot rely too much on it and still be confident that our exhortations to duty will persuade others. While ecological duty is an intensely social relationship, its scope encompasses everything in its environment. A denial of this scope, Midgely argues, is both an unimaginative restriction of reason and a blindness to obvious demands on us. "We have quite simply got many kinds of duties to animals, to plants and to the biosphere. But to speak in this way we must free the term once and for all from its restrictive contractual use...."(ibid,99) This kind of arbitrary judgment is easy to make, but in contentious situations in which duty is contested, it may not be persuasive, no matter however coherent the conceptual structure behind it may be. Insofar as the duty can be demonstrated to be feasible also to human interests, it becomes more persuasive.

Nature tourism can demonstrate this in practice, linking duty to the immediate interests of the nature tourists, and to others who benefit from nature tourism. Imagination is engaged more in comprehending what we do through duty than in persuading us to do it. This too is a challenge to both the conceptual coherence and ethical clarity of nature tourism in practice. It must attract tourists through activities in which their needs and interests as they stipulate them are paramount. Yet it must also empower them, perhaps surreptitiously, to include within their needs, even foremost among them, practices to demonstrate and develop environmental awareness and respect for nature. (Fennell 2008, 164-184) Nature tourism cannot succeed against the will of its clients, nor through their ignorance and indifference. Tourists can be empowered to imagine duty to nature and to act correspondingly without any assumption of reciprocity save that within their immediate group of tourists. The activities issuing from this imagination are of course proportional to the natural features and history of the place, but the experience of imagination and duty can take them far beyond their situation, to fundamental questions of being. However, the attitude of duty is vulnerable, contingent to the immediate situation of the nature tour, and possibly unreasonably demanding even there.

Rolston also attempts to deal with this problem through an exercise in conceptual imagination which he holds to be grounded firmly in scientific ecology. One of the values which we can realise as duty is existence value, a recognition that the existence of a natural thing gives it *a priori* justification we are bound to respect because it is no essential purpose of the human condition to condemn things to non-existence for arbitrary reasons. Existence is not a discrete event but a continuous event in a "lifeline," perception of which suffices to create at least minimal duty to it. (Rolston 1995, 66 ff.) No lifeline, a species for example or a biotope, can be comprehensible without the environment sustaining it. We belong to these environments also. Hence duty to lifelines can be justified as duties to ourselves , for which reciprocity is irrelevant. Duty need neither be contested nor assumed: it dissolves into individual and communal self-conceptions.

This argument, however, raises several further difficulties, quite apart from the conceptual distance of lifeline from real experience. Rolston seems to agree, because his reasoning is intended to strengthen the claims of duty against those who deny it. Duty to self defined within a vague concept such as lifeline, which as such is sound ecology and far from the mysticism of some holistic beliefs, leaves all justification of duty adrift. It approaches incoherence insofar as persuasive arguments for it are problematic in the social situations in which it is relevant and needed. One of the difficulties is epistemological, not only in locating lifelines in actual environments, but generally in making accessible and relevant the factual and conceptual complexities of scientific ecology. Natural history even at its most descriptive is not self-evidently clear, and the more analytical it becomes, and the closer to scientific ecology, the more it grounds reality in entities and processes which may be transcendentally real but never palpable. (Outhwaite 1987, 28-39) Insofar as ecological ethics is grounded on facts of nature, with an additional commitment to prefer some natural histories over others, difficulties in comprehending scientific ecology correspondingly weaken the ethics, hence the persuasiveness of duty. This is compounded if thereby the self, both the subject and object of duty, is similarly obscured.

Attempts to circumvent these problems through appeals to diverse holisms, either empirically or imaginatively constructed, which many environmental philosophies do, may further threaten duty if the holism demands abdication of individual value. (Belshaw 2001, 185-192) It is too facile a resolution of the burdens of duty simply to urge one to expand her self-consciousness to the dimensions of an ostensible whole. This may persuade true believers, and then but contingently. It is not a sustainable relationship to nature, society or oneself, not least because it jeopardises not only scientific ecology but rationalism as a necessary and continuously threatened human condition. (Bookchin 1995, passim) Nature tourism ought to bring us closer to nature, not erect a conceptual or emotional structure isolating us from it. Nature tourism must and can provide real experiences of natural history, its beings and processes to which we can affirm duties because they are the most immediately practical actions.

Holistic thinking may of course enrich environmental and ecological responsibility. It can help us discern implicit orders and extend our ontology beyond discrete beings and social time to primordial being and time still existing in the relationships within natural entities. (Stevanovic 2000, 66-82) It can help us engage our perception with memory, imagination, emotions and understanding despite our deficient knowledge of ecology. Holism may be a wilful immersion into a place's natural history, an exercise of will-power

to which nature tourism can assist us. As Stevanovic argues, we need holistic thinking to reveal the origin of our beliefs and to foresee how they can develop beyond the ordinarily hegemonic calculative rationality. But she admits its dangers as well. The search for wholes can easily become distant from ecology. It tends to obscure and arbitrary hypostatising in selecting the wholes meriting the value of being real. (ibid 53-65) The existence and value of parts, entities not granted wholeness, may be diminished. Duty derived thereby will also be obscure and arbitrary. The further from reality the ostensible whole is, the more arbitrary and impractical the inferred duties will be.

Rousseau, another walker, picks up and contemplates stones and leaves, and muses that one of nature's greatest bounties to humankind is that it hides secrets which might be dangerous to know. (Rousseau 1981, 157-174) We may have no duty to reveal too much of nature, but we do neither it nor ourselves any favour by contriving artificial wholes to which we can owe some inchoate duty. As Rousseau observes, it is burden enough for us to discharge duty to palpable nature without inventing more duties to imaginary or conceptual entities, which mostly creates power for those with the audacity to claim special wisdom.

Emerson also walks, if more sedately, and enjoins us to abstain from the arrogance of reducing nature to mere objects of our knowledge, both conceptual and practical. That way leads not to wisdom or insight, but merely to power. "Neither does the wisest man extort her secrets, and lose his curiosity by finding out all her perfection. Nature never became a toy to a wise spirit."(Emerson 1985, 9) But we must avoid obtuse ignorance, often masquerading as mysticism. Ecology feeds our curiosity, but it ought not excessively empower us to manage nature. (Katz 2000, 83-93) It creates fertile soil for our axiologies of nature, and to this extent reveals entities in their wholeness. But these are provisional subjects of our curiosity, and not to be reified as instruments of power. On these grounds, among others, nature tourism regards environmental restoration sceptically, at least when the purpose is to create a site for tourism.

Nature tourism does not treat with such abstract entities. It takes us to places in which nature, natural features and history, are palpable. But its activities may lead us to obscure this wholeness and stunt imagination with mere doing, and duty with achievement. This too may distance us from reality and turn duty, insofar as it can survive in such circumstances, inward, away from nature and towards merely trivial gratification. Even a clearly presented commitment to environmental awareness does not necessarily result in responsible behaviour. (Wearing & Neil 2009, 15-31) Nature tourism must seek to inculcate new modes of ecological understanding in which neither arbitrarily holistic entities nor individual strivings to perform are definitive. It needs an ethic of nature beyond an ethic of use, however much it also uses a natural environment. But such an ethic may lead merely to impracticality, and hence back to holism. Nature tourism can empower anyone to clarify her responsibilities; it does not need gurus or sages. It need only to throw us into the natural history of a place so that we can see what benign and malign impacts we may have on it, and demonstrate to us the possibility of making the choice to be benign. Too much focus on duty may be a distraction, not only from the need and possibility to choose but from awareness that the choice will be imperfect at best.

A related difficulty in scientific ecology is that it easily leads not only to the authoritarianism Rousseau fears but to the attempted domination of nature, or of particular beings and entities within it, which must be compelled to conform to what our scientific

account would have them be. This tendency denies the ignorance Rousseau extols and which Naess admits is inevitable. Science, however obscure, may induce us to claim too much responsibility. It can become an exercise of power and forfeit its function of continuous hypotheses. When we assume the right of domination, even moderated in the apparently more benign form of stewardship, we arrogate to ourselves a causal agency of natural history we are ill-fitted to sustain. Duty degrades into an assumption of superiority which exacerbates ignorance by concealing it within the instrumental knowledge of our domination, at the same time obscuring the actual content and significance of our ignorance, and its possible benefits. "The arrogance of stewardship consists in the idea of superiority which underlies the thought that we exist to watch over nature like a highly respected middleman between the Creator and the Creation. We know too little about what happens in nature to take up the task."(Naess 1992, 187, 187-193) Yet this is humankind's prevailing relationship to nature, not always with benign intent. The effectiveness of technology does not encourage us to question this domination.

Nature tourism may encourage us to this question if it can enrich our encounters with nature in order to make palpable the inadequacies of our axiologies and ontologies of it, and hence of our expectations. Scientific ecology is not the least of the ontologies to be compromised. But in doing so, nature tourism can empower us to encounter the natural history of a place somewhat more adequately, not in violation of ecology but for its enhancement to other modes of knowledge. We can perhaps see that nature tourism is not only external to nature, impacting on it, but within it, with a duty to enlarge the range of its activities and our capabilities to them that we may approach the vastness of nature. (Hall 2013, 6-15) This duty will end in failure. Experience of failure is not pleasant, but it may be a motivation of will-power to ecosophy. It may also turn us away in despair or indifference. Nature tourism is charged to protect us somewhat from that. But it cannot relieve us of our responsibility to duty.

One reason Naess encourages ecosophy is that it is an inwardly directed, ontological deontology, a self-reflective doctrine of duty which leads us to inquire into nature without assuming an overbearing role in it. We can assume duty as a means of refraining from causal interference into what exists, even if in some cases we are compelled to interfere for our own security. Attfield categorically rejects any ethics based on domination because domination is necessarily instrumental and hence incompatible with duty. (Attfield 1983, 201-226) He does not reject stewardship entirely, if it focuses on intrinsic values and limits itself to the restricted competence of human moral agency. But his argument shows how problematic it is to perceive and observe these limits in practice. He encourages us to enlarge our responsibility to embrace the whole biosphere, which of course must be done, although duty is not perhaps the best means to realise this. Human moral agency will extend its ostensible competence beyond the benign duties of stewardship and unleash its latent claim of domination, especially if moral agency is considered to be a uniquely human feature. Duty comes to justify what we can do, thus negating its fundamental ethical purpose of self-restraint. When nature tourism takes us into situated nature, it restricts our assumption of duty to immediately relevant actions. Any further assumption of duty is fraught with danger.

The hubris of both scientific ecology and ecological imagination may lead us to do too much. But to search for an antidote in doing little is also a problem, and given the

exigencies of environmental crises, perhaps not a lesser one. In itself restraint is often commendable. It is after all one purpose of moral reasoning. Negative duties to refrain from acting are no less impelling than positive duties to act. They may be difficult to formulate persuasively. But given the powerlessness of the social situations of most people, negative duties are often the more practical ethical experience of an encounter with nature. Nature tourism thrives on this kind of self-restraint. It is intrinsic to observation and contemplation. Rousseau suggests that the most intense moral life is nurtured by a fundamental duty to oneself to abstain from acting and to proportion action to the rather meagre limits of what we know certainly. (Rousseau 1981, 33-63) Thereby we can devote ourselves to a few significant things, and at the same time sharpen our observations of natural details. No study of nature, even the most haphazard, can entail violence towards it or greed to exploit it. (ibid, 113-121) However much we would that he were right, he is wrong, alas. But nature tourism may empower us somewhat to prove that he can be right.

Similarly Emerson would have us perceive the boundlessness of nature, "a grand word," through a delight in the few natural laws implicit in studious observations of nature. From these details we acquire the capacity "...to study the grand strokes of rectitude...."(Emerson 1985, 89, 72-91) Busy-ness obstructs duty, and truth. Appealing to what he holds is the receptive, passive nature of intellect at its finest, devoted not to mastery but to understanding, Emerson counsels us to discern truths prior to any attempt to be creative. "But the moment we cease to report and attempt to correct and contrive, it is not the truth."(Emerson 1950, 294) Intellectual duty is to regard things in their wholes, not merely those aspects of them convenient to us. But he does not advise that we invent wholes. If duty cannot be disengaged from attempting to correct, even our own consequences, it may displace truth, right and good with convenience. Even negative duty may feed human arrogance.

Commensurable exhortations to caution and restraint are frequent in contemporary environmental ethics as well, on at least two grounds. One is that duty to act may easily exceed our ability to govern consequences. If duty takes us too far into natural history, we become blind to our ignorance of what we do. Duty ceases to be responsible. (Clark 1983, 182-196) Ignorant also of what we do not know, duty becomes an assumption of omniscience, which is implausible and a valid reason to refuse it, in spite of a clear need to take responsibility at least for our own impact on nature. We end in an impossibility. Because a negative duty of self-restraint also challenges a prevailing ethos of democratic empowerment and participation, it is easy to deny it and to focus on our putatively good intentions.

Nature tourism may be vulnerable to this error if it seeks to engage us in the natural history of a place excessively through our capacity as agents. Yet mere observation of natural history may seem an inadequate expression of duty. A challenge to nature tourism is similar to that in the experience of beauty, to imagine one's absence as a necessary dimension of it. The duty to organise non-consumptive activities must focus a concern for the nature of a place after its use for tourism is over, and its regeneration to something like a pristine natural history. (Fennell 2008, 19-39, 62 ff) While this entails some restorative measures coincidental with all other activities, it depends primarily on the absence of activities, and the duty to eschew any activity which might jeopardise the restorative measures. This may be seen as the duty of restitutive justice to restore the conditions of right and good in and of nature after it has been compromised. (Taylor 1986, 186-192) But

the capability for this may be beyond the reach of tourism. It can perhaps mostly antici-
pate the need for this duty and seek to minimise it by a prior duty of non-interference in
nature. Discharged literally, this would disallow the use of any place by nature tourism,
even the presence of contemplative observers. The arguments for duty seem to lead to
an impasse. An ethical judgment such as duty which cannot be coherently acted on may
also not allow persuasive justification.

A further reason for contesting duty might be that ecological duties can be merely the
imposition of further stipulations to act in particular ways on top of those we already
bear, thus threatening both the coherence and the sustainability of our total responsibil-
ity of duty. (Kheel 1993, 243-255) Overburdened with tasks, we take refuge in abstract
rules and principles in order to organise them into some comprehensible order. Duty is
hypostatised into something expressing primarily or solely human agency presented
as cause of a necessary order of nature in society. This may occur benevolently, as with
some doctrines of nature conservation, or malevolently, for example intensive industrial
agriculture. Observance of this order displaces nature and we lose sight of a fundamental
duty neither to subdue nor to protect nature, but to remove ourselves as disturbances in
its natural history.

Once again we end in an impossibility, committed on the one hand to an overwhelm-
ing burden of dutiful tasks of participating in nature, and on the other hand to a view
of nature which requires of us only the simplicity of being more or less passive in it. We
might flee from this dilemma by exaggerating human agency as a manifestation of some
greater purpose or human project of unquestioned rightfulness. Theocratic religions and
doctrines of technological development are cases in point. Duty may seem irrelevant.
Many exhortations to sustainable life styles fall on this contradiction. Such simplicity is
both impossible and illusory. The negative duty to refrain from action approaches inco-
herence. Refusal to assume duty seems attractive and mere duty to abstain a chimera. But
it is not a purpose of nature tourism to beguile us into passivity or impossibility.

Another dimension of these difficulties and sometimes proposed as a way out of
them is to intensify the ecosophical theme of self-realisation through a deontology of
self-creation, the duty to determine oneself as a being justified by and in nature and on
its terms, both individually and within the species as a whole. This does not replace social
ethics, but is prior to it, if less exact about the rules of social intercourse save insofar as
it occurs directly through or to a natural environment. Indeed no social ethics is consid-
ered binding unless and to the extent that it is reflected in a personal ethics of this kind.
(Blackmore 1997)

The underlying idea is that responsibility to nature is best discharged by focusing
one's causal agency on oneself in order to become an indisputably valid expression of
nature. The extent to which this is successful will be verified in the experience that self-
realisation in no way diminishes any other mode of being in nature. Duty to nature is me-
diated through duty to oneself. Such self-centredness is indeed an emotional experience
of ecosophy. It is often invaluable in resisting the instrumentalisation of our individuality
which inheres in social systems devoted to material consumption. Nature tourism seeks
to direct some consumption at least in less self-centred ways. But this justification of duty
through duty to oneself is arbitrary and self-interested, and at odds with the decentring
of human being in a more complete conception of nature.

Self-centredness is an essential dimension of ethics; it is the notion of virtue. Aristotelian ethics, as Macintyre argues, is grounded on a self-centred examination of how to be a good person. Macintyre thinks this concern has waned regrettably in Western society. He seeks to restore it by asking what practices in what communities constitute the selfhood to which virtue can be both a description and a definition. (Macintyre 1985, 204-218) Practices need to be intelligible and assessable in the context of purpose, and possible within our social situations, without merely abiding what is unacceptable within them. A person is accountable to these practices, and to the extent that they cohere to create a recognisable unity of her life, to that extent she is virtuous. Of course MacIntyre also requires the acceptability of purposes within a community which nurtures them. Virtue is a quest for a conception and a realisation of common good expressed in the diverse practices of a community. (ibid, 218-223) Rival conceptions may be disputed, but the weight of sustainable practices will prevail. So it is hoped. Ecosophy's self-realisation may be an instance of this process; responsibility to nature is one of the practices defining virtue. The self-centredness of duty, then, is misleading because practices presume community. Duty to self through virtue is duty to community.

This justification of duty, however, remains unclear if only because the impact on nature of so many practices is inchoate or variable. Rarely is there a direct correlation between a practice and a natural consequence. The virtue of duty may be as much imagination as ecology. To that extent this notion of duty is unpersuasive, or too easily usurped by doctrines whose purpose is not respect for nature or even a moderately ecological understanding of it. Even when respect for nature is genuine, this argument for duty seems deficient. As well as being deontological, duty is consequential. If at least some of its consequences are not readily visible, duty loses its moorings in practical duties. If the community is defined as nature, we are in the realm of imagination again, because a community of nature may be only a metaphor, apart from the ecologically self-evident pragmatics of sustaining an inhabitable environment. (Light 1997, 255-267) The pragmatics are of course nearly always contested. If the community is a social group, for example a nature conservation association, the case for non-members to abide by its practices of duty through virtue is very contested indeed. A problem, then, with ecosophical duty to self-realisation is that the intensity of one's assumption of duty need not correlate with its persuasiveness to others, and indeed may often correlate inversely. Duty to self may be counterproductive.

The problems of ecosophical duty are implicit in some of the difficulties of deontology generally. In its simple individualism it may obscure the collective aspects and purposes of moral reasoning, which can be best understood and governed through consequences. (Hare 1989, 52-61) Self-centredness can induce not only blindness to consequences but complacent disregard of them, which makes the formulation of social rules problematic. Disregard of consequences is ruinous to environmental policy. Nature has more essential purposes than human character, but even as a social policy, centring rectitude on one's own character is dubious. If we value our own character primarily through our devotion to self-defined duty, we can easily undervalue the character of others to the extent that they differ from us. We can become insensitive to the cost to them of our own integrity. (Davis 1993, 205-218) Personal rectitude displaces commitment to right and good against social wrongs and injustice, at which point the substance of sustainability and ecosophy is lost.

Of course these defects of deontology are but tendencies within it, and not inevitable. Deontological derivations of duty can be impersonal, communal and natural, if perhaps at the risk of creating an excessively cumbersome body of rules. But there is cause enough to fear that ecosophical deontology may succumb to the illusions of individualism in its arbitrary assumption that a correct comprehension of the natural world is a sufficient deontological method, by-passing critical examination of duty and the values it purports to serve, and devaluing ecology as well. (Curry 2006, 33-36, 76-81) The notion of self swells to include too much, and conceptual coherence is endangered. The justification of duty is correspondingly weakened. Self-realisation does not necessarily enrich our understanding or experience of nature. Nature tourism must be concerned with our character, but it seeks to influence it extrinsically, but providing opportunities for self-examination in immediate relationships to nature. It does not intend us to become more engrossed with ourselves.

The tendency of deontology to undervalue consequences leads to yet another serious problem, the difficulty of managing conflicts of duties. This can be particularly troublesome in our relationships with nature. Incompatible duties may arise from and cause different valuations of preferred natural features of a place and uncertainty about how our practical consequences will variably impact on them. Of course all ethical formulations of duty entail such conflicts. If duty is primarily a self-centred deontological concept, the conflict tends to become a matter of the self-determination of one's will, for example the will to ecosophy. The real facts of nature are displaced and correspondingly devalued along with commitment to community expressing equally the self-will of other persons. Social responsibility is weakened, and ecological duty reduced to duty to oneself. It degrades into a claim to power, motivated by self-righteousness.

It may be, as Bradley argues, that the unavoidable conflict of duties is necessary to our capacity to create duty autonomously, by compelling us to appeal to our will to realise a higher, "ideal" self whose expression of duty is wholly disinterested. (Bradley 1927, 156-159, 193-199) This in fact is the aim of ecosophy, and it is not misplaced. But it is insufficient, and must be comprehended within a more inclusive and coherent philosophy than deontology, ecosophical or otherwise. Ecosophical deontology ought really to be a of realising the significance of nature to the whole of the human condition, social and personal, instrumental and ethical, teleological and existential. It must follow from an understanding of nature, not precede or determine it. A necessary practicality of deontology is that it does not commit us to any given end state, but may empower us towards receptivity to nature's many modes of being. But deontology, even when formulated as practical duties, is usually an insufficient motivation to action, and when sufficient, not always benevolent to its object. (Shafer-Landau 2005, 119-141, 157-161) It is vulnerable to self-interested contingency, and hence it is the more reliable the more it is embedded in both larger philosophical, normative and practical contexts, and the closer we are to a comprehensible community when attempting to discharge duties.

Nature tourism is a possible, if ad hoc community. When it enriches our understanding and experience of nature either in general or through the natural history of a particular place, it creates a community with other persons likewise engaged bounded by those natural features. Duty is both clarified and focussed on them. Such place-dependent community may in fact be not only a pre-eminent experience of place but also the origin of sustainable social bonding transcending the encounters with a place. (Ramkissoon et el 2012, 264-265) Despite the brevity of such communal bonding within the confines of

tourism, it may stimulate more extensive, environmentally centred communal identity, particularly if the experience of the nature tourism demonstrates environmental failures elsewhere in society.

Through an intensive and somewhat discrete encounter with a place, duty is set free to seek new places to inform behaviour. But as a consequence it loses some explicit features as duty. Potentially it may be extended to other realms of community elsewhere in society, but that will require considerably more reasoning and will-power than ecological duty alone. However, a primary justification of nature tourism is that it helps to motivate and empower us to this extension. This is the development of ecological citizenship, to which I shall return in due course. It suffices here to remark that ecological citizenship demands more of us than duty, and cannot be reduced to any one doctrine of duty. Nature tourism makes only the case that any mode of community and citizenship which does not include ecological duty in some form is flawed to the point of impermissible injustice, which ought to invoke in us a natural duty to equity.

Duty, then, is a way of making ecosophy practical, and in return ecosophy makes duty exigent rather than merely supererogatory. This can be done only by proportionalising ecosophical self-centredness, self-realisation, to the immeasurably larger realms of being in nature and society. Conflicts of duties cannot be avoided, but they need not lead either to ethical paralysis, solipsism or a unilateral exercise of power. They can instead reveal the complexities of society and nature within each other, which does not make for simplistic practices or dogmatic beliefs, but does indeed bring us closer to the variety of responsibilities we bear. Ecological duty may then be experienced rightly as an enabling condition of social duties derived from human rights, from which a coherent doctrine can be conceived. (Des Jardins, 1993, 106-109)

The conflicts of duties may entail the curtailment of some social liberties, always a contentious matter. But by proposing practices to manage these conflicts within a coherent system of human rights and nature's ecology, ecological duty can be plausibly argued as a contribution all things considered to the ethical sustainability of society. The procedures of curtailment must not themselves be violations of rights, which means that ecological reasons for them must be formulated within an encompassing doctrine of rights. Nature tourism can demonstrate this in practice, on a scale sufficiently immediate and small that the issues involved are not lost in the obfuscations of philosophical reasoning. Nevertheless the fact remains that duty alone does not suffice to justify a community or the practices to which we owe duty through virtue. The tautology must be resolved by more inclusive concepts and experiences.

Thus I arrive at another problem, which leads me at last directly to nature tourism. The ecosophical demands of ecological duty, as I have indicated frequently above, presume but also create a civic culture of ecological virtue. The direction of virtue is towards an ecological citizenship which may be more focused on duties than conventional citizenship, and in which duties are non-reciprocal, non-contractual, but also self-determined, "…to act with care and compassion towards distant strangers, human and nonhuman, in space and time."(Dobson, 1998, 8, 2-26) The condition for this is the bracketing of the conventional distinctions among domestic, private and public spheres of practices and beliefs. Just as negative duty to self-restraint may work against a prevailing ethos of empowerment, so too this reasoning bodes ill to deny our ethos of individualism and

autonomy. That of course is not to be regretted, to the extent that a corrupted notion of individualism induces us into unsustainability, for example exorbitant, insatiable consumption. But this judgment is not only contested in itself; it is also considerably suppressed by the power structures of an economic and social order legitimised by it, and by our ordinary self-interest in perpetuating it to our ostensible advantage. Ecological duty may rouse difficult enemies.

Despite the circular reasoning of entailing virtue and duty in each other, the essential condition through which each of us can discharge our duty as ecological citizens is to strive towards the virtue in which duty is not only required but possible and practical in order to transcend the rather inchoate notions of duty in mere philosophy. Perhaps the most significant function of nature tourism is to bring us into places of situated nature, not at all distant in either space or time, in which the possibility and practicality are apparent, exigent and unobstructed, no matter how overwhelming the contrary pressures of society and ordinary life.

There is sociological evidence that attitudinal changes towards environmental concern and away from the relentless pressures of mass consumption may create a demand for new kinds of tourism, including nature tourism. (Honkanen 2004, 77-84) This does not translate directly into the strict definition of nature tourism proposed in this study. To realise even approximate practices of nature tourism requires precise planning and effective marketing. Nevertheless an opportunity beckons. The pressures of society and ordinary life are not irresistible. Virtue is possible, against the social forces which would trivialise or nullify it, or make it seem irrelevant and supererogatory. Nature tourism may constitute communities and practices of virtue.

But even if attained, virtue does not make things easy. It too contains a conflict, between love of a thing to bring us close to it, and respect for a thing to keep us distant from it. (Swanton 2003, 99-115) Virtue, or rather any system of virtues, may throw us into this conflict, nature tourism particularly in its appeal to love of a place and respect for its natural history and features. The pragmatics of ecological citizenship may help us govern this conflict, which cannot be resolved for the good of nature by an unbalanced reliance on either love or respect. To see how ecological citizenship might be fostered, it is now necessary to glance at some of the details of nature tourism. It may be an activity whose practices indicate what kinds of virtues may guide the activity towards greater completeness, and which are themselves exercises of these virtues. Duty is incurred by the nature tourist who seeks the greatest possible experience from the activity on the terms it declares for itself, and which she has accepted.

NATURE TOURISM STRICTLY DEFINED

I wish to speak a word for Nature, for absolute freedom and wildness, as contrasted with a freedom and culture merely civil – to regard man as an inhabitant, or a part and parcel of Nature, rather than a member of society. I wish to make an extreme statement, if so I may make an emphatic one, for there are enough champions of civilisation....

Henry Thoreau: "Walking"

Many forms of tourism utilise in some manner the natural features of tourist sites in their activities and marketing. But this does not qualify them to meet the rather stern demands of empowering their clients towards sustainability, ecosophy and ecological duty, which I have indicated above in a number of contexts. Such demands entail a strict, indeed extreme definition of what nature tourism can be, in order to distinguish it from other kinds of tourism, to clarify the essential elements of what it offers to nature tourists and requires of them, and to ensure that they have no illusions about their responsibilities when participating in it. We must emphatically protect the concept from abuse, which is widespread.

A strict definition is of course arbitrary and stipulatory, and always imperfectly realised in practice. Nevertheless an emphatic conceptual clarity, bordering perhaps even on dogmatism, is a valid perspective in both planning nature tourism and evaluating its ecological, social and ethical significance. (Condit 1995, 11-14) Even imperfectly realised, conceptual clarity reveals somewhat the pragmatics of ecological duty, virtue and citizenship as a goal not to be displaced by the conventional interests of either ordinary life or its temporary and partial suspension in tourism. Sustainability is a broad, teleological concept. Ecosophy is a deontological praxis, duty is a pragmatic and ecological citizenship of virtue is a personal validation of respect for nature and commitment to its good. The definition of nature tourism must adhere primarily to this conceptual structure to be realised in encounters with nature.

In order to justify the strictness of the definition, even before considering it, we need to be as unambiguous as possible on the teleology of sustainability insofar as it may be furthered in nature tourism. We must settle on its purposes, which might be valid as well for tourism generally. Within tourism studies analyses of sustainability have focussed on critical accounts of the resources used by different forms of tourism and their burden on nature's carrying capacity, what kinds of activities contribute to other dimensions of sustainability, not least economic, and the extent to which the communities hosting tourism are empowered by it to manage their own environment for their own good. (Teller 2013, 222-224) These are essential criteria of nature tourism as well, but they do not suffice as a paradigm for either defining, practicing or evaluating it in the strict form I propose in this study. Nature tourism demands more stringent purposes if we are to derive from it a maximum account of nature tourism's ethical dimensions in order that some sustainable minimum can become widely accepted and realised. I have indicated several aspects of these reflected in the reasoning of sustainability, ecosophy and duty.

In an attempt to cohere these aspects, the perspective is altered, to express more pronouncedly the facts of nature tourism rather than the concepts of environmental philosophy, however much the former are embedded in the latter. The reasoning here is circular, but so is reality. My approach continues my practice of saying little about the facts of nature tourism. That is not my purpose. If participants in nature tourism, operators or clients, find my reasoning or its concepts inapplicable to their activities, they can reject the reasoning or change their activities.

This is not an unreasonable or inappropriate approach. Despite the variable uses of related concepts such as green, alternative and ecotourism, many studies hold that subcategories within the general category of sustainable tourism entail an increasing stringency of evaluative criteria and hence of normative demands on operators and clients.

The stringency may depend primarily on the practical and educational role of ecology in the activities. (Björk 2007, 24-42) I too have argued this, with some qualifications. The stringency may also be more broadly environmental, social and educational. It may entail for example small scale operations based on features of nature treated with respect and thereby conserved through activities providing tourists with "unique and outstanding experiences of nature." The avowed purpose is to refine their sense of informed responsibility for accepting nature on its own terms rather than merely as a resource. (Holden 2008, 230-237) Any dereliction in this regard by either operators or tourists lessens their claim to sustainability. The practical normativity on which my own reasoning rests is endemic and necessary in tourism studies.

The basic norms of nature tourism, in principle, are that it organises access to places of valued features of natural history for small groups of persons through activities which allow them to encounter nature with minimal mediation by anything alien, unsuitable or detrimental to the natural history of the place. The nature tourists relinquish to the greatest extent possible the use of any implements which distort this natural history and which exercise power or harmful influence over any of its features, processes, beings or entities. The tourists are attuned to become sensitive and receptive to natural history and empowered to respect it by keeping sufficient distance that the impact of their presence is both minimal and temporary.

Apart from the necessary group dynamics of organised activities and their own safety and convenience somewhat, nature tourists suspend for the duration of their sojourn the social interests, habits and privileges to which they are normally accustomed. They rely on human capabilities which are primitive in the sense of being original to the human condition as a species in a natural habitat, as much as possible prior to the technology whose history is the attempted mastery of or protection from natural processes and beings. Walking, Thoreau's "noble art," during which the senses and the intellect are made sensitive to these processes, is a quintessential activity of nature tourism. The tourists' presence is but a visit to a home only incompletely and provisionally their own, but much more the home of others who have not invited them. Nature tourism is quiet, modest, slow, reflective and deep. It does not need to seek exotic realms over great distances, but waits for the unremarked inhabitants to show themselves. "You only need sit still long enough in some attractive spot in the woods that all its inhabitants may exhibit themselves to you by turns."(Thoreau 1984, 474) As they are observed, so too are the natural features and history of their home.

This account is not yet a definition. But it is the beginning of a description of nature tourism which might be coherent with the demands of ecological duty and ecosophy. It may suffice to clarify some of the purposes indicated above from a more conceptual perspective. Respect for nature must be demonstrated in a way that neither harms any process or being in the place nor compels them to respond to human interests. It seeks indeed to intensify human rationality, but in a mode of contemplative observation that seeks understanding rather than control. (Condit 1995, 15-17) It enhances the experience of subjectivity as a process of natural history not exclusive to humankind. It reveals natural history as it might be without society, however much this is ecologically contentious. (ibid, 17-19) Thereby it indicates, through the group processes of the tourists, forms of social order in which respect for nature might be a constitutive norm.

This preliminary description suffices to indicate that nature tourism is only one form of sustainable tourism, but perhaps its most extreme. In all cases the guiding principles are fundamental aspects of sustainability. A natural environment has intrinsic value prior to its use as a resource of tourism. Activities and purposes must respect the scale, nature and character of the tourism destination, including its social features. No unnecessary disharmony is to be permitted or encouraged, with particular care to the possibility that tourism in any guise may dominate and corrupt both nature and community, and induce artificial, destructive behaviour. (Holden 2008, 158-170) Sustainable tourism always intrudes into situations which may be largely beyond its control. To the extent that it governs its own context, it must attend to the task of preventing or moderating more destructive land uses and industries in those places to which tourism can plausibly claim priority.

Within this remit nature tourism must seek to prefigure a mode of sustainability which may reveal the shortcomings of less extreme forms of tourism, and as well its own failures. We can derive from this function several more general purposes of nature tourism, some of them philosophically and ecologically contested, in quest of a definition whose application in practice can further sustainability by educing in us ecosophy and ecological duty. Nature tourism can provide voluntary encounters with nature in which the relative insignificance of the activities to the plenitude of natural history is experienced as a palpable and usually benign reality.

Hence nature tourism must not pursue any fixed notion of nature, but let it reveal itself in its diverse forms, with particular care to the fact that its activities are never neutral to what we conceive nature to be, but always constitutive of it, often to excess. (Mason 2013, 266-274) Modesty in the face of nature entails likewise modesty of purpose, retrieving the experience of tourism from the insensitivities of the mass, if individuated activities of conventional tourism. (Hemmi 2005, 319 ff) It does not offer mere amusement or entertainment, still less the unreal escapism of mass tourism. It can enable us to consider, even unintentionally and inchoately, some fundamental questions of being, transcending the ordinary juxtapositions of nature and society, human and nonhuman, living and nonliving, as well as our customary categories of reality. (Condit 1997, 62-65)

As with my exposition throughout, I suggest some categories of these purposes only tentatively, incompletely and indicatively. But this might be enough to ground a strict definition of nature tourism, on which basis its possibilities as a means of ecosophy and duty can be suggested. I propose to be extreme here only for the purpose of emphatic clarity, not to be programmatically dogmatic.

Perhaps the most basic of these purposes is addressed to Thoreau's attempt to regard persons as inhabitants of nature. An inclusive definition of nature makes this a truism, however much our sociality blinds us to it, or leads us to disbelief or indifference. Even in technological isolation, we inhabit the laws of nature harnessed to technics to control them. But nature tourism aims at something more precise, the ecological systems of places whose salient features are valued processes of natural history, with minimum mediation through technology. It aims to return us, however artificially, temporarily and safely, to humankind's prehistory, not as participants in a remorseless struggle for survival, but as minimally participating observers who can discern something of the conditions of prehistory which obtain still and so, hopefully, in the future as well. Nature tourism steps somewhat out of time, that we may immerse ourselves in nature's time. It is an experiment

in the "romantic myths of nature" to experience anew the origins of consciousness, or to uncover traces of primordial awareness long overlaid by modernity. (Seaton 2013, 94-111)

It might be that such a release from social time is the first and most continuous aspect of ecosophy, because it proportions the social interests we must discharge to heteronomously given timetables. By allowing us to experience our situatedness in a place with no ulterior motives in utilising it, nature tourism returns us to a primordial ontology of being, that we can exist in and only in a place, inseparable from our environment. (Stevanovic 2000, 41-44) Time can be experienced as a flow of natural history, visible yet beyond us. We are taken out of ourselves conventionally and thrust into a being more fundamental, if but transiently. This is Thoreau's purpose in sojourning on Walden Pond, to learn "the gross necessaries of life" and to obtain by his own exertions an elevation of life without the hindrances of luxuries, to solve some problems of life practically, and to "adventure on life now."(Thoreau 1984, 267 ff)

A highly contentious formulation of this purpose, which nature tourism would do well to avoid in marketing, is "posthistoric primitivism." Emancipated from social history, or at least bracketing it for the duration of the nature tour, we comprehend the irreducible facts of the human condition, like Thoreau at Walden "liv(ing) deliberately and front(ing) only the essential facts of life," in order to compel us to what we can be or ought to be when faced with the events of natural history. (Oelschlager 1991, 5-30 ff) We abdicate claim to superiority and domination. Nature tourism can make it safe and enjoyable for us to do so. Thoreau holds primitiveness to be a necessary condition of virtue. In such a condition we encounter some truths which can induce us, perhaps to if we take them seriously, to act for the good of nature without subjecting it excessively to society's needs. "The very simplicity and nakedness of man's life in the primitive ages imply this advantage, at least, that they left him still but a sojourner in nature. (Thoreau 1984, 292) Thoreau is not a model nature tourist, but his cabin life at Walden might be a salutary lesson for the modern industry of summer cottage holidaying. A cluttered life has scant room for awareness of duty. It obscures nature and obstructs virtues within and for it. Nature tourism can recreate somewhat our origins.

Through such an artificially organised yet effectively real immersion into natural history, we might comprehend our own species past as a continuing reality, and to develop sufficient integrity to value and respects its facts, without seeking to explain them in ways that lead to efforts to control or subdue them. When we step out of time, even trivially, we open ourselves to the transformative value of experience of nature. (Norton 1987, 188-191) We induce change in ourselves, and through us in society, but not in nature, insofar as it is within our capabilities to refrain from imposing change on nature. An initial experience is that the nature tourist is empowered to see some aspect of natural history without intruding into it, and then to depart the place, taking with her some knowledge of and emotions towards it.

A corollary of this purpose is the search for wildness in nature, which to Thoreau is "the preservation of the world." Wildness in situated nature, most obviously encountered in places normally called wilderness, is not in itself only a fact but a value and a conceptually constructed norm, as is wilderness as well, which may be applied to or experienced in different situations and places, not all of them benign. Even the most manicured lawn, regarded at grassroots level, is a wilderness. We must take care not to let a search for

wildness or wilderness displace experiences of nature or devalue places of pronounced natural features because they may be insufficiently wild. (Chaloupka & Cawley 1993, 3-21) Nature tourism is possible in cities and cultivated countryside.

Wildness occurs everywhere, and not always obviously. Perhaps when it seems most obvious it may be most problematic. Wildness, and more so wilderness, are contested concepts because tourism creates expectations to encounter some specific natural features in order to satisfy a demand which is as much commercial and psychological as ethical and ecological. But the activities of the encounter may not cohere with wildness. A "wilderness experience" as a tourism package can falsify natural history or intrude into it with unintended consequences. (Saarinen 2013, 145-152) Just as concepts and appreciation of wilderness vary across cultures and over time, so too do the criteria and practices of encountering.

But wildness is not our creation or concept. It is primordially real. Our ontology is the more impoverished if it does not admit this. Different concepts of and appreciations of wildness may be social constructions, but they are derived from this reality. "The main idea in nature is that nature is not our idea."(Rolston 2012, 176, n173-178) Our ideas are invariably less than the reality, but if they are adequate, they will indicate its expanse which we might explore. Nature tourism is an exploration. Exploration can degrade into subjugation if we do not take care to manage the impact of nature tourism activities in constituting our concept of wilderness to modes easily and conveniently encountered. (Holden 2008, 29-47) To step out of social time is, after all, merely an ethical conceit. It does not cancel the reality that nature tourism is a causal factor in any place we deem a wilderness, and diminishes it thereby. Rolston's challenge is to limit our ideas through the will-power to encounter nature as it might be without us. Nature tourism explores the existential limits of human being. Wildness exists, but not always as we would have it be.

The appeal of wildness and the search for wilderness is a fundamental ethical attitude. By stripping away the accumulations of society from natural history, even if this is to a great extent an imaginary process, wildness can make us sensitive to aspects of nature otherwise obscured by our customary perceptions, categories and experiences of it. This is one reason nature tourists usually want to go where they have not been before and where they believe few others go and certainly not at the same time, where it is easier to discern wildness simply because activities in the place are restricted and focused on natural history. Wilderness, if we so designate a place where wildness cannot be denied, facilitates and intensifies this experience and permits us a stronger sense of the ties of life between ourselves and all natural features. (Sikorksi 1993, 24-41)

Wildness, then, is as much a relationship with the nature of a place as it is the natural history of the place. It can be discovered in what Drengson describes as "wild journeys," even on a small scale, in a back garden. By seeking out and regarding from a respectful distance processes of natural history we can "transcend our small self-wilfulness in an authentic way."(Drengson 2004, 68, 64-80) As observers, perhaps we participate, and under carefully considered rules we might participate somewhat more actively. In all cases nature tourism binds us to a simplicity which leaves natural history alone, save to the extent we allow it to claim ourselves for a brief moment as one of its many events. But wildness demands our respect, and we must keep our distance. After failing to climb the peak of Mt Ktaadn in Maine, Thoreau reflected that he had no call to be there anyway,

amidst a nature "something savage and awful, though beautiful,... that Earth of which we have heard, made out of Chaos and Old Night."(Thoreau 1983, 70, 64-83) He could bring nothing to the mountain it needed, and it had no need to succour him.

When we confront wildness, we ought to encounter something beyond our possession and mastery. From this we can derive yet another fundamental purpose of nature tourism: to experience situated nature as a commons whose inhabitants might abide us as visitors if we restrain ourselves. The notion of commons has been proposed as nature's tragic flaw which compels people to abuse it. (Hardin 1992, 60-70) This happens, but the flaw is neither in nature nor in the concept of commons, but in a social order which can see in nature only a lack of possession and absence of property and a licence to a excessive use. (Lemetti & Noponen 2011, n112-131) Properly understood, the idea of a commons, "ubiquitous and invisible," is not the absence of possession and property but their dialectic and refutation, entailing not only restraint from certain kinds of actions but the extension of the concept of home both to the those of our actions we conventionally locate outside home, and to the natural beings with whom we share it. (Thomashow 1996, 67-102) The tragedy can be averted, or alleviated, not by environmental authoritarianism but rather by guiding society and human behaviour towards practical acknowledgement of our communities with nature. Nature tourism can demonstrate this emancipation and correspondingly reduce the need for and dispositions to authoritarianism.

The concept of nature as home is a commons within a community. The welfare of the commons is one of the community's primary constitutive purposes and practices. For the span of a brief visit, nature tourism can create a commons within a community. Nature tourism thus embroils us in an apparent contradiction, to be at home and to be visitors, to love and to respect. When we comprehend the idea of commons in our encounters with nature, we necessarily comprehend the responsibility of being at home which is not wholly our own. When we enter it, a natural commons beckons us to "circumstantial community," whose circumstance is our presence in natural history. If we share this circumstance with other persons, the community can shape our permitted actions into organised and freely assumed duties. This is an essential, and perhaps the essential purpose of nature tourism. An inclusive notion of community encompassing both a place's natural environment and its human inhabitants as determining criteria of what tourism must do and avoid is usually applied to so-called indigenous peoples, whose vulnerability to the cultural imperialism of even well-intentioned tourism is considerable. (Farrelly 2013, 447-456) This is a valid concern, but too narrow. All human communities are indigenous, and for the duration of the activities, so too a community of nature tourists, if they acknowledge the priority of the more natural community into which they intrude.

In becoming a community, nature tourism empowers us to practices conducive to the good of that community, which we can refine more completely into virtues required by the community as the condition of belonging to it. We can see in practice both the demands of excellence and our capacity to achieve it. (MacIntyre 1985, 186-203) Nature tourism takes us into this "telos" of one's self, transcending the ordinary contingencies of our conventional practices, even if it is as modest as learning how to listen and smell and see details while walking through a place. From such modest beginnings perhaps we can see somewhat the features of a more inclusive ecosophical lifestyle, which Naess characterises as "simple in means and rich in ends," magnified through mutual help to egalitarian recognition of

whom and what is within our mutuality, and why. (Naess 1992, 87-103) Nature tourism reveals alternatives to lifestyles of diminished responsibility. It demonstrates the plausibility of more sustainable practices, in selected circumstances at least. It gives us a taste of and hopefully greater capabilities for a *friluftsliv,* an outdoors life.

A community of a commons is an origin of the moral acknowledgement of the bonds, goods, values and actions which constitute virtue, and through virtue the ethical realities of the world. (Swanton 2005, 34-48, 91 ff) This is a naturalistic formulation of a naturocentric ethics supervening on the facts of natural history. Simply by allowing us to experience some of these facts without the distortion of social time and interests, tourism can be an exercise in moral reasoning, or at least an occasion for it. At a minimum the ethical reasoning might be our empowerment and attunement, through the pleasures of nature tourism activities, to confront and perhaps to overcome the lack of motivation to act from duty for the right and good of nature. The condition of deficient motivation, accedie, is a failure of rationality, but not its total loss. It can be met by a clear, rational appreciation of what we evaluate as right and good, why we can do so and what this entails for us. (Tenenbaum 2007, 47 ff) As nature tourists in a new place, encountering natural history in unaccustomed ways, within a group likewise empowered, we can refine our perspectives and clarify our rationality. Duty to nature is revealed as immediate and personal, not mediated and obscured through barely comprehensible social structures or conceptual arguments.

I arrive then at another fundamental purpose necessary for a strict definition: the inculcation of pragmatic responsibility to situated nature and to fellow nature tourists, and through them to people everywhere at all times, no matter how indifferent, or hostile or still nonexistent they may be. To restate this purpose now is almost redundant. Throughout I have been attempting to delineate from diverse perspectives the grounds and content of nature tourism's pragmatic responsibilities. At their heart is the responsibility to organise activities in places of favoured natural features which can stimulate in tourists a sense of ecological duty and facilitate their assumption of appropriate attitudes and behaviour, as real experiences of ecological virtue, hence of ecological citizenship. Thereby they can foster a frame of mind of sustainability which will inform their other social actions and beliefs.

This is not a sufficient expression of sustainability, and perhaps not even a necessary one, although in some measure I think it is. Its possibility is justification enough, and indicates the kinds of responsibilities nature tourism bears as some of its constitutive purposes. Within its activities, nature tourists can together nurture ecological self-identities which take duty for granted, and which can empower them to seize various opportunities, such as walking in local places of favoured natural features, to discern where previously they did not the "local tremendous trifles" of natural history which excite the pragmatics of their sense of duty. (Thompson 2010, 61-75) Empowerment is not intended to increase autonomy or self-governance, but to intensify attunement to features, events and entities of natural history whose essential relationship to us is not as occasion for our actions. Attunement mutually shared with other persons similarly empowered does indeed deepen autonomy. It becomes a communal purpose. Duty to nature becomes mutually recognised obligations among persons, and is the more compelling thereby. The responsibilities of nature tourism exceed the modest dimensions of its activities and organisation.

In a sense, then, it is neither wise nor possible to formulate these responsibilities too precisely. This is a realm of personal autonomy in a variety of situations which will determine somewhat how it is to be exercised. Because the range of ecological virtues is wide and their practices pluralistic, there probably is no single criterion of the pragmatics of responsibility, which requires intense responsiveness to the natural features of the place and the actual activities of nature tourism. An essential criterion is of course immersion into some natural entity in a way conducive to a sense of community with it. (Sandler 2007, 39-61) In a Kantian manner it is easier on these grounds to stipulate what is excluded or forbidden by responsibility than what expresses it. Responsible actions are usually conditional and contingent. At a reasonably general conceptual level it might be possible to state that the pragmatics of responsibility involve the clarification of duty towards a transformation of conventional behaviour, the transformation of supererogatory into received duty through pragmatically feasible rules of responsibility. (ibid, 85-101ff) On this basis we can identify more effectively what to avoid, and so develop "a reliable, sustained and justified critique of environmentally unsustainable practices, policies and lifestyles."(ibid, 108)

From this apparently negative vantage point we tentatively explore a more fundamental realm of responsibility, the "ontological responsibility of judging what is good to exist, how it exists, what reduces its existence and where lie the inadequacies of our concepts and experiences of nature which impair the reliability of how we discharge our responsibilities. (Condit 1997, 65-71) Nature tourism is always an exercise in critical self-examination, not didactically but by confronting us with the deficiencies of our practices and the limits of our knowledge, even while insisting that we practice and seek to know. Nature tourism takes us into situated nature on Emerson's terms: "I do not see how any man can afford, for the sake of his nerves and his nap, to spare any action in which he can partake. It is pearls and rubies to his discourse. Drudgery, calamity, exasperation, want, are instructors in eloquence and wisdom."(Emerson 1985, 59) Nature tourism need not enlist these instructors, and indeed must do its best to keep them at bay. But it is Emersonian in its insistence that action is a resource, an answer to the "exhaustion of imagination and inspiration." Pragmatic responsibility guides us towards imaginative, inspired action within the context of natural history.

And so emerges another constitutive purpose which similarly has been pervasive in my argument. To foster socially determined obligations, pragmatic responsibility must be relevant to natural history, without reference to our possibly ecosophical interpretations of it. These shape duty, of course, but such duty develops into obligations only among the like-minded. Nature tourism seeks a broader and more effective group of adherents, people who can develop obligations to discharge ecological duties even if their ethical motivations or concepts of nature are different or incompatible. A necessary condition for pragmatic responsibility, then, is that it be informed pervasively by the scientific ecology and descriptive narratives of natural history.

We cannot demand of nature tourists sophisticated mastery of ecology. But nature tourism can make some basic ecological principles both easily comprehensible and graphically demonstrated in actual situations. Some more abstract ecological principles will be revealed almost accidentally, as it were: that natural processes are indifferent to human interests; that any human action on nature is an interaction with systems beyond our

control, with largely unforeseeable consequences; that scientific generalisations are contingent. (Passmore 1995, 129-141) Precisely because these and other similar principles are indeterminate, they lead us back to ecological duty. Restraint is entailed by our ignorance no less than by our power. Nature tourism demonstrates the exigencies of caution. Only if its responsibility is clearly effective in the natural history of a place can nature tourism assist tourists to act responsibly and thus to seek the self-understanding and justification of why they do so, from which duty is comprehensible and comprehended. As with all environmental issues, ecology raises basic questions of value which cannot be circumvented by ideological appeals to scientific objectivity. (Des Jardins, 1993, 5-17) But ethics in ignorance of science is dangerously obscurantist and corrupts normative judgments into attempts to exercise arbitrary power.

Nature tourism must involve itself in these intractable dilemmas with careful consideration that it errs neither by claiming too much nor being satisfied with too little. This is a paradox of interpretation, that the experiences of nature tourism and the understanding stimulated by them remain personal and yet express in practice a communal will of respect for nature. Nature tourism perhaps might best express the possibilities and duties of pragmatic responsibility through immersing its clients into the ecology of a place more or less local to them, or to whose localism they can be educed to comprehend. There need be a careful balance among the demands of descriptive natural and social history, ecological explanation and personal experiences of wonder and awe. (Buckley 2009, 194-206) A stipulation of how to unite these disparate responsibilities is inadvisable. This is a task of those involved. But it is clear that pragmatic responsibility extends beyond the bounds of specific the instances of nature tourism. It must seek to instil in its clients a commitment and capability of "post-trip learning," to vouchsafe them the "portability" of their insights and comprehension which can inform their values, attitudes and behaviour beyond the nature tour itself. In a sense nature tourism reverses the conventional notion of tourism as an escape from ordinary life. It seeks to become ordinary life.

Rolston argues that there is a danger we might lose sight of nature if we experience it too intensely through wonder, worship, aesthetics and other ecosophical categories. When personal experience becomes more valuable than natural history, it is no longer a sustainable ground for duty. (Rolston 1995, 65-66) This is not a recipe for ethically disengaged scientism, but for an ontological ethics of "entwined destinies," which encourages us to formulate duties to the manifold entities comprising natural history. This ethics is implicit in ecology insofar as ecology is governed by a fundamental responsibility to situated nature, and not to the more technological, instrumental interests of most scientific institutions. Responsibility cannot protect us from ecological conflicts, which may entail painful decisions about what entities of nature to favour or obstruct. Nature tourism is not intended either to avoid or solve these conflicts. It suffices that we comprehend them and that our responsibility is as much as possible governed by duty and its consequent obligations. Ecology can help us decide how to act, foresee somewhat and manage consequences, and thus how to pursue duty responsibly. Nature tourism is an exercise in ecology.

The final constitutive purpose in my tentative account is self-evident. Nature tourism is educative, not only in ecology but in individual and communal responsibility in general, in the duties we owe nature and the virtues we need to empower ourselves to an

ethics of ecological duty. By assisting us to decentre ourselves and society in some imme-
diate relationships with nature, it bolsters the self-determination and restraint required
for using knowledge well, for understanding rather than for power. (Orr 1994, 12-15, 45
ff) From ecological knowledge of situated nature we can learn not only these things but
as well how to pace our learning to nature's time and space and events, and how to allow
it to infuse all that we learn.

The heart of learning on these terms is "biophilia," and when focused on a specific
place "topophilia," on which ground we can bond with what we know well. (ibid, 137-
153) Nature tourism cannot assume the privilege of intruding wherever it pleases. Its
operators must have profound knowledge of and respect, indeed reverence for the place
of its activities, and instil this into the tourists. Properly organised, nature tourism can
make this education easily accessible and safe, not to excess of course, but without an
institutional environment of heteronomous discipline and testing. It can demonstrate in
practice the impacts on nature even the most well-intentioned of our actions may have. It
takes us far beyond the disciplinary boundaries of ecology.

The responsibility of this purpose is perhaps more incumbent on the nature tourism
operator than on the tourists themselves. (Suikkanen 1997, 104-107) Carefully provided
activities proportioned to the natural history and features of a place open it to the tour-
ists on selective conditions. They need to be informed why these conditions obtain, not
so much as restrictions on what they must or must not do, but rather as events within its
natural history which they are there to observe and perhaps in selected ways to partici-
pate in. Although in practice most nature tourists are well disposed to understand and
abide by these conditions, the operator presents them and guarantees their observance.
No education is without discipline. Its pedagogy, both in its practices and in its exten-
sion to beliefs and social issues far larger than the actual situation, is not convention-
ally authoritarian. It is participatory and open-ended, a "reflective adventure," and a
resource also for schools committed to more formal methods and goals of education.
(Hemmi 2005, 585-596) Nature tourism offers people an opportunity for lifelong educa-
tion in which the life involved transcends their own. This is environmental education
at its most emphatic.

These six purposes, the experience of primitivism, wildness and wilderness, the com-
munity of a commons, pragmatic responsibility, scientific ecology and education, may not
be the only ones which can be stipulated. They do not obtain equally in all circumstances
of nature tourism, nor can they be realised in any necessary *a priori* form. They are not suf-
ficient for nature tourism, perhaps not in all cases even necessary. But they indicate what
it might be at its most extreme, and the basis of the activities it can organise for tourists
in order to stimulate and guide their motivation to deepen their ecological awareness and
responsibility. (Hemmi 2005, 80-109) They can never be merely clients or customers. They
are fellow beings in the natural history of the place they temporarily inhabit. In this light
these purposes suffice to suggest a strict definition of nature tourism which coheres with
the conceptual reasoning of ecological duty, if not always or even often with the economic
circumstances of nature tourism operators.

Nature tourism organises brief visits by individual persons and small groups to places
of favoured or pronounced natural history and features. Through activities which cohere
with this nature and do not cause any unsustainable change within it, nature tourism

allows the tourists to observe natural history as it might be without their presence, and to participate in it only with means either inherent in or harmless to it. The implements they use are restricted by this condition. During their visit they can become sensitive to aspects of nature previously inaccessible to them, and thereby deepen their respect for it and nurture their own ethical responses to it. Their activities are governed communally in their own groups, whose presence is an event in the natural history. They suspend their customary interests in order to approach some approximation of pristine nature, an experience of latent, benign wildness. (Condit 1995, 29-34) Typical exertions of the nature tourist are walking, seeing, listening, studying and contemplating, and of course providing for oneself. The activities empower them to these exertions, whose focus is nature, and through nature their own beliefs, attitudes and frames of mind. They are successful to the extent that their experience of nature transforms them by attuning them to realms of being, time and agency transcending their own. In reflecting on what they do or have done they realise what an authentic encounter with nature is, and it commits them to duty. (Hemmi 2005, 393-407)

This strict definition still needs some rules to operationalise it, and to keep it visible in the press of the inevitable compromises and failures of nature tourism as a real social structure and entrepreneurial venture, and not as just a conceptual construct. I suggest some of these briefly, so that I may rush on to my final concepts.

PROHIBITIONS AND IMPERATIVES: PREFIGURING SUSTAINABILITY

> But the walking of which I speak has nothing in it akin to taking exercise, as it is called, ...as the swinging of dumbbells or chairs; it is itself the enterprise and adventure of the day. If you would get exercise, go in search of the springs of life. Think of a man's swinging dumbbells for his health, when those springs are bubbling up in far-off pastures unsought by him! Moreover, you must walk like a camel, which is said to be the only beast which ruminates when walking.
>
> Henry Thoreau: "Walking"

The activities of nature tourism are contingent to its situation. It might be misguided to attempt to specify rules which it must observe, and by forcing it into dogmatism not only endanger its practical appeal to potential nature tourists but also its ethical coherence, on which its contribution to duty lies. But without rules, the concept of nature tourism and hence its reality is hostage to the misfortunes of commercial economics, marketing and consumer demand. These are weighty enough in any event.

In thus study I have not much dwelt on nature tourism's possible dysfunctions and environmental harms. They would only obscure the ethical emphasis I seek to propose, as they do in reality. But they cannot be remedied by being ignored. Of particular significance are the potential harms caused by the ethical intentions of strict nature tourism, in addition to the well-known problems of tourism generally. If these cannot be avoided, or at least managed, the whole project of nature tourism may be misguided, as indeed

Buckley hints in contrasting it with ecotourism, which focuses more on structural and communal benefits and less on the use of natural environments as a resource. (Buckley 2012, 644-656) I think this is a dispute more about concepts than about the actual consequences of avowed purposes of nature tourism. Buckley's critique holds for all forms of ecotourism as well. Certainly he is correct in arguing that there is insufficient evidence for the benefits to the environment even of the strictest ecotourism, or nature tourism in my usage, and that its efficacy for attitudinal and behavioural change may fall greatly short of what is needed. My argument for ecological duty in nature tourism may be premature.

That argument may fail if nature tourism cannot moderate the harms of its best practices. The most obvious of these are well enough recognised. The most conscientious nature tourists, demanding pristine natural environments heretofore unexploited by any kind of tourism create a demand for their exploitation which not be governable within the stipulated limits of strict nature tourism. (Higham & Luck 2007, 118-129) They cause a "ceaseless search for unspoilt places," which once harnessed to any mode of entertainment cannot remain unspoiled. Perhaps on these grounds the "ultimate ecotourist" stays close to home. But this may simply ameliorate some of the coarsest aspects of cultural imperialism. Nevertheless the self-assumed virtues of nature tourists demanding an environment worthy of excerising them may obscure their harmful impacts to the point of abdicating their responsibilities and nullifying nature tourism's educational functions. (Honkanen 2004, 84-89) The ethics of nature tourism may be merely pretensions.

Similarly nature tourism's contributions to nature conservation or preservation may be counterproductive if it tries to arrest natural history or to reverse it in order to preserve those natural features of a place which are deemed to excite emotions of wonder and appreciation, without regard for their authenticity or sustainability to the natural inhabitants of the place. This may indeed be a powerfully positive impact in places of domesticated nature or urban environments, where nature tourism or some other kind of ecotourism is indeed possible. (Holden 2008, 65 ff) But the complexities of nature conservation and protection cannot be reduced to such anthropocentric purposes. If nature tourism is to contribute genuinely to respect for nature, it must address itself to the paradoxes of managing its impacts on wildlife habitats and inhabitants over a range of possible actions and consequences and scale of time which may well exceed its capacities. (Higham & Lusseau 2007, 257-266) Whenever a natural environment is conserved for human use primarily, no matter how benign, there is an intrusion into its natural history for human interests which may not belong there and whose consequences are unforeseeable or unmanageable. If nature tourism causes processes in nature it cannot manage or even comprehend, it forfeits ethical legitimacy, at least on the terms I propose for it in this study.

These and related problems are ecological, and occur necessarily in nature tourism's use of natural environments. Even if they are adequately managed, there remain considerable economic and political factors which can nullify nature tourism's ethical principles. Profitability has to be maintained; land use must have some palpable benefit to the local community; infrastructure must be developed, and cultural clashes of nature concepts, lifestyles and land uses mediated. My arguments in this study may fail not through incoherence but because nature tourism operates in unethical frameworks which do not allow much scope for coherence. (Nowaczek et.al, 2007, 137 ff) Pervasive in all its planning and activities is the imperative not only to develop ethical and con-

ceptual coherence but likewise practical means of demonstrating it against exigencies which do not wait upon philosophically reflective deliberation. However lofty its principles, if they are inoperable they will result in their violation or abuse even while tourist operators and clients espouse them. We might be left with Fennell's bleak assessment: "One of the unfortunate realities of ecotourism is that despite how it has developed in principle, many developments are in fact no less intrusive than other types of tourism development. It is indeed frustrating that we continue to talk of appropriate means by which to control development, yet have very few successes to report on. International development firms will therefore continue to use the ecotourism concept for their purposes, with an associated degree of market confusion concerning what is and is not ecotourism." (Fennell 2008, 105)

Even if a demand for strict nature tourism exists in some places on a scale affording it viability, the demand must be organised and activated in ways which do not violate the principles of respect for nature and the realisation of ecological duty. There is no easy way to market for this demand. But at some minimum level of coherence it may be possible, and certainly necessary, to develop codes of practice to ward off the temptations or necessity of "greenwashing," and to retain some measure of autonomy in determining what nature tourism is with those who supply it. (Wearing & Neil 2009, 171-180 ff) We cannot rely too much on demand; it must be generated.

This is my purpose in indicating some rules through which nature tourism may ward off the failures it meets in society and will itself cause. To counteract them somewhat, some conceptual extremes are useful. Such rules must not be observed to the extent of eliminating pleasure from nature tourism. Pleasure, as Aristotle points out, is not a good, and often obstructs knowledge of it. But in an activity which otherwise expresses good or disposes us to its virtues, pleasure is a means of perfecting the activity and inciting in us further experience of virtue. (Aristotle, 1976, X i-viii) Pleasure can motivate us to right and good. This way lies not amusement, but happiness, which is a resource for contemplation. To contemplate we need leisure. Nature tourism is a leisure time activity. Without pleasure it negates itself, as it does if it offers mere amusement.

Apart from these practical considerations, the stipulation of rules serves two necessary functions in the search for a coherent framework of duty. It suggests guidelines for both tourism operators and tourists to plan for and observe in situated nature in order to distinguish their activity as nature tourism rather than some other kind of tourism, or at least to identify the extent to which they are engaging in it. By operationalising the definition, they enhance their motivation. Conceptual clarity amidst the ambiguities of real exigencies is not a flight from reality. On the contrary it is an exercise in wisdom, a purposeful pursuit of good in and of nature through the individual and communal autonomy of clearly defined practices. They keep in mind our reasons for seeking the virtues of duty, and keep in sight our capacity to succeed. Such rules are a practical commitment to experience the many ways nature is significant. (Scriven 1997, 87-102 ff, 189 ff)

The second function, derived from the first, is to specify and regulate activities appropriate to the actual circumstances of nature tourists through which they can fulfil duty, mutually assist and empower each other to the obligations to do so, even prior to their comprehension that this is what they do, and impel them towards adhering to these obligations in ordinary life, beyond the purview of nature tourism. Duty requires

conceptual coherence, and this may be some time in developing. To most of us most of the time it is never manifest, save at a high level of generality. Duties require actions with easily grasped purposes and immediately experienced consequences. The rules of nature tourism are meant to guarantee that these actions anticipate conceptual coherence, thereby nurturing some manner of ecosophy on the way towards a frame of mind of sustainability. Nature tourism can demonstrate an essential dimension of sustainability in sufficiently strict circumstances that it can be experienced as an authentic social ethics, in spite of its conceptual and practical ambiguities. As I have remarked above, we can intensify our self-determination by participating in the purposive causality of natural agents. We are not diminished but enhanced, and less self-centred.

This reasoning is inherent in environmental philosophy. Taylor, for example, argues that the attitude of respect for nature, which can be acquired on very simple epistemological grounds, commits us to a duty of relevant virtues. They are mandatory, not voluntary, both in themselves as expressions of nature and as stipulations for right conduct in reference to nature, that we act well. But respect as a fundamental attitude also requires autonomy, without which we cannot pursue the excellence of good character or cooperate with others similarly. Respect for nature does not negate self-determination, but is based on it. (Taylor 1986, 21-24 ff, 213-218) This contradiction is apparent only. While ecological virtues are duty bound, specific actions realising them may be only contingently or imperfectly. The rules of nature tourism specify what kinds of opportunities for virtuous actions can be provided in ways which do not compromise the autonomy of self-determination and respect for nature.

A similar argument is suggested by Bookchin as an extant expression of humankind's original, prehistorical consciousness of rationality. (Bookchin 1982, 303-314, passim) Through a ubiquitous sensibility of existence within the embrace of nature, no matter how hostile it may on occasion be, the practices of care, the ethics of complementarity, the urge to knowledge and the adoption of appropriate technology combine to express the "symbiosis" of the human condition within nature, perhaps as nature's most highly developed purposiveness, its "entelechy." We can discover the fundamental facts of existence and their potential for our developing capabilities to pursue nature's good and our own, which together constitute the essence of right. This is an "ecology of freedom." Rules of ecological behaviour are the framework of freedom, the means by which society holds itself responsible to nature.

Like all reconstructions of the origin of human thought, this argument is conceptual and fictional and not historical. It is useful in assisting us not only to engage in the activities of nature tourism in order to experiment with participating in direct expression of natural purpose. It also helps us to derive from them more general dispositions to certain kinds of duty bound actions and attitudes in ordinary life. For the city dweller, as most of us are, the presence of nature and our symbiosis with it may be often difficult to discern, save when it threatens us. Our personal consequences are buried beneath complexities we cannot well understand, let alone govern. We are endlessly compromised by our will to convenience, our ignorance and indifference. Yet respect for nature commits us to challenge society's prevailing structures despite the evident triviality or irrelevance of our actions. (Mesimäki 2006, 87-103) Enriched by an experience of nature tourism, we can apply its rules to other circumstances and expand our realm of freedom and responsibility.

The rules must be adoptable and flexible, yet coherent and purposive. To the extent that they can demonstrate nature tourism's feasibility in its own circumstances, they may become increasingly relevant in other circumstances as well. Nature tourism prefigures aspects of a sustainable social order, with perhaps some of the characteristics Bookchin suggests for freedom: diverse, small communities as society's basic structure, individual empowerment through deep self-reflection on the relationship of society and nature, practical action for the shared good of both, an enlarged public sphere which can cohere personal, communal, social and natural histories through reasonable use of appropriate technologies and technics. (Bookchin 1986, 97-132) Nature tourism can convey how ubiquitous and universal these characteristics may turn out to be. It can develop our capabilities to act accordingly and cooperate with others to the same end. Nature tourists are pioneers of a possible future and heralds of its ethical considerability.

Obviously, then, the rules of nature tourism serve purposes larger than its own activities. They reflect the primary dialectic that it is both a visit to nature and a temporary inhabitation in one's home, both of which exclude actions and implements of violence, exploitation and degradation. As important as these principles are, stating them does not much clarify the particular features of nature tourism which enable it to realise on a small scale and prefigure on a larger scale a social order of sustainability.

In order to clarify this pragmatic responsibility, I suggested in a previous study that the rules can be indicatively classed as prohibitions and imperatives. (Condit 1995, 35-76) They are open ended because they are contingent to the circumstances of their activities. But they are, possibly, inclusive in that all nature tourism's activities can be placed in the categories of one class or the other, and perhaps usually in both. Together, they indicate what must not be permitted to occur, and what must be vigorously encouraged, so that the encounter of nature's independence and nature tourists' autonomy combine to reveal but not distort the natural history of the place, and to enrich the character of the tourists and through them their social history. A cursory review of various prohibitions and imperatives suffices to demonstrate their contribution to the conceptual and practical coherence necessary for a convincing doctrine of ecological duty. A task equally pressing with refining nature tourism's ecosophical possibilities is to develop these rules into ever more applicable forms and as well reliable indicators to assess their ecological, social, attitudinal and behavioural impact.

An account of the prohibitions begins with the most fundamental: nothing is permitted that does not demonstrate respect for life and through it for the environmental conditions and consequences of life. This pertains to both individual beings, ecosystems and biotopes, and to categories such as species, whose ontological status is contested. It entails similarly an equivalent respect for what we customarily regard as non-living matter. Often it is derived from life or necessary to it, and equally often it is intrinsically involved in nature's causal sequences, in which agency and purposiveness can be discerned without recourse to mysticism. (Bennett 2010, 110 ff) Thus Bennett suggests that environmentalism conventionally considered is too narrow a perspective. It obscures "the very radical character of the (fractious) kinship between the human and the nonhuman," from our own bodies to the farthest, largest and microscopic realms of the universe, and the most mundane. What she means is ecology, in its broadest sense. Nature tourism is deeply ecological and addressed, if only inchoately, to perhaps the most fundamental

question of the human condition: what are we in the order of things, and what ethical attitude best allows us to comprehend it?

Nature tourism thereby excludes killing and depredation of place, and avoids anything which obstructs experience of the fecundity and diversity of life and its conditions, without however probing too deeply into its constitutive processes. A border condition is of course the tourists' well being and security, but the activity cannot focus on destruction or needlessly put the tourists in situations in which they must violently defend themselves. Swatting mosquitoes is permissible, but repelling and enduring them is better. As a mode of education, nature tourism is descriptive, not analytical. This prohibition applies as much as possible to both the activities themselves and to the infrastructure, such as modes of transportation and choice of provisions. Tourism cannot deny the natural facts of death, destruction and decay, and may indeed benefit the tourists by illustrating how, where and why they occur. But it does not employ or exacerbate them. Respect for life is a prerequisite for ecological duty. As Thoreau observes, when we kill or destroy a natural thing, we diminish it by divesting it of its inherent properties and making it merely an object. The violation is worse when our object is trivial, "petty and accidental." When we absorb ourselves into the beauty of life in the wild, not beholden to our purposes, we might experience our own significance, "our own true recreation."(Thoreau 1983, 99-125) This is a stern test for nature tourism as recreation.

A close corollary and natural consequence of the first category of prohibitions is the injunction to refrain from anything which weakens, jeopardises or obscures the nonhuman dimensions of nature, in particular the habitats and behaviour of the inhabitants of the place which the tourists visit. Unlike the first prohibition, which applies primarily to explicit actions, this category applies equally or even more to the unintended and unforeseen, possibly unforeseeable consequences of the tourists' presence. The disruption of nesting or feeding through loud conversation, trodding plants underfoot, ignoring and rendering valueless life forms not specifically searched for, all fall within this category of prohibitions. So too do any circumstances which distort the best features of human nature. The prohibition entails the minimisation of any obstruction to a disinterested encounter with nature, and of anything which deflects attention from it. Music iPods are absolutely banned. So too is defacing rocks with even the most unobtrusive graffiti, even if those left by prehistoric people are now valued features of a place, almost an expression of its natural history. Rules are always historically contingent. These two categories together invert the environmental practice of conventional tourism, which seeks to construct suitable environments for its activities. Nature tourism restricts its activities to the natural history of the place.

This prohibition entails actions and their ecological impact both particular to the place and general to universal dimensions of our relationships to other species. Our ecological knowledge and ethical sensitivity must be correspondingly broad. Nature tourism can never relax its informative and educational duties either in planning or carrying out its activities, although the tourists may be somewhat inconvenienced or bored. For example walking itself may spread seeds of invasive plants to the harm of indigenous flora. Encounters with wildlife, species watching, may inadvertently or even intentionally cause them to habituate to human presence, whereupon they cease somewhat to be wildlife. (Buckley 2009, 13-16, 156-157) Nature tourism must care for mud on tyres and shoes

no less than for the considerable knowledge and tolerance for uncertainty in encountering and respecting non-habituated wildlife. Tourists' expectations and variable states of readiness for encountering wild species cannot be dismissed. (Newsome & Rodger 2013, 345-356) At best they might thereby enlarge their own humanness. But the greater error is to serve them to excess with disregard for the ecological effects. Ideally this prohibition ought to be inviolable. The burden of marketing and behavioural guidance may make this unattainable.

A third category of prohibitions, on which Bookchin for example lays great stress, is the restriction on the use of both certain kinds of technologies and technics, and the excessive or superfluous use of any. Tools mediate our encounters with nature, and humankind has never been without them, nor can it be. But in chosen circumstances we can limit the extent and enhance the quality of this mediation by foregoing reliance on implements which displace the experience of nature with the experience of the implement itself, and which cause harmful impacts on natural history. An example, often marketed as nature tourism, is driving snowmobiles in forests and across lakes. Genuine cross country skiing however can be accepted, if the focus is not on the skiing itself.

This prohibition aims to simplify activities in line with natural history, so that natural complexities are not obscured. Technics must sharpen our experience of nature rather than dull it into a mere setting for the use of an implement. Good walking shoes are a requisite. A similar prohibition obtains for technics which distort human senses and responses to nature. In some circumstances even binoculars might be questionable. The purposes of primitivism and wildness entail a wide application of this category of prohibitions. A general guideline might be that no activity should require an implement if it can be performed otherwise, in a more direct encounter with nature. Human capabilities without technological magnification are the most authentic mode of participation in natural history. Walking is preferable to bicycling, which is immeasurably preferable to watching nature through a car window. Moving over water is preferably by paddling or rowing, with motoring relegated to meet only otherwise inaccessible places. Sometimes they might best be left in accessible.

A fourth category of prohibitions is better stated in a positive form, although in practice it is usually the prohibition of some activities or land uses. It is the protection and preservation of nature's diversity and resilience in recovering from human impacts, inevitable even in the most doctrinaire and conscientious nature tourism. Nature preservation is perhaps the most essential aspect of ecosophy because it touches directly and critically not only on everything we do, but on the human condition itself, in all its social, communal and personal dimensions. It is also a direct access to natural history, because diversity and resilience are the central features of nature as a whole. They are the product, the process and the potential of natural history. The more we restrict ourselves to preserving them, the more we allow natural history to generate its own changes, sometimes cataclysmic.

In a sense the preservation of diversity and resilience put humankind somewhat outside nature by seeking to prevent or minimise anthropogenic changes. As Naess suggests, this entails acceptance, or even declaration of human uniqueness among natural beings, not of our power and domination, but rather of modesty, caution and reflectiveness. (Naess 1992, 163-181) We can seek to cohere our values into an axiology of ecosophy

which strives for some minimal shared values of all forms of life, including awareness of its potentialities, recognition of equal rights to flourish, and perception of natural entities as morally considerable. It also leads to some specific and contested social prohibitions, such as the renunciation of any claim to ownership of nature. In the actual circumstances of nature tourism, this category entails persistent emphasis on the ways in which the immediately present natural history restricts all social interests in that place. However, nature preservation cannot be soundly pursued if it simply stresses leaving a place alone because of its self-evidently good natural features. This may be an initial motivation, but a fuller justification must entail both a broader account of the place's natural history and its ecological and ethical significance for society generally, and specifically directed to those persons not committed to its preservation. Nature may have intrinsic values, but they are always contested.

The reasoning here is difficult. Its assumption of human exceptionalism tends to strengthen the claims of the power structures which most represent our exceptional features, or have most of the resources for them. In this case, however, the intention is the contrary, to restrict power because the exceptional features are least or poorly manifested by it. This includes features of our individual characters, to the extent that we support, submit to or benefit from destructive exercises of power over nature.

This category of prohibitions puts us in a dialectic of participating in natural history and keeping apart from it because we cannot be certain of our consequences. It seeks to instil in us a primordial appreciation of nature and yet presumes sophisticated conceptual knowledge of what diversity and resilience are and how they are present in situated nature, for us and for other natural beings and entities. It confronts us with the vastness of nature and demands our attention to its particularities. It requires considerable resources and efforts whose purpose is to limit what we can acquire as resources and what we should strive to do. From society's perspective, nature preservation is almost an antihistory. It urges us to simplicity, but its practical pursuit and consequences may involve us more deeply in the complexities of nature's conflicts, many of which may originate anthropogenically, through ignorance, design or simply the essential interactions between nature and society. These and a host of similar contradictions are the ideological burden of nature tourism, whose small scale allows us to achieve some immediate success, however ineffective or inconclusive it might be within social history. But any success, trivial and transitory, can refine our character and indicate criteria of behaviour far beyond the remit of nature tourism. For example nature tourism may alert us to the problem of invasive, exogenous species in a place, clarify some alternative responses and their consequences and afford us some experience of them.

The prohibitions are restrictive, although they often require active measures, of which nature tourism itself is one of the most obvious. To the nature tourist, the prohibitions are a primary motivation, and therefore they are predominant not only in its marketing but also in its descriptive and educational activities. Conceptually, however, they are but one side of the rules necessary for a strict definition. They must be fortified and continuously reaffirmed by imperatives. The imperatives are expansive, entailing activities and justifications far exceeding the apparently limited scope of nature tourism. In this sense they are in the long term more significant than the prohibitions for their potential contribution to social changes towards sustainability. They are likewise more contested, and so less

visible in nature tourism's own justifications in its claims to social resources. They are also less under its control, and less dependent on its relevant activities.

Nevertheless the imperatives serve the same purposes of cohering natural and social values, extending public and personal commitment to natural history and developing social structures and behaviour towards a broad, inclusive notion of sustainability with an intensive commitment to the rights and good of nature. To some extent, the imperatives are implicit in the prohibitions. Measures to observe the prohibitions are imperative, and enriched experiences of and attitudes toward nature ought to lead to consequent behaviour throughout society. The imperatives extend the scope of the prohibitions and invest them with a social structural dimension which might otherwise not be sufficiently visible. In demonstrating both the inadequacy and the necessity of nature tourism to discharge the tasks to which its ideals commit it, the imperatives must be kept distinct as its ultimately determining purpose. When the imperatives are legitimised, so too is nature tourism as something more than a pastime for middle class romantics.

The basis of the imperatives is that nature tourism is not primarily a commercial venture, but a cultural and communal project to participate as nature's representative in the ecological interactions between nature and society. This is not its definition but a description of its social functions, more or less purposively pursued. The imperatives specify not only its responsibilities to nature, but also the indicators of its success as a cause of social change in its intended direction towards sustainability. All the imperatives take for granted the fundamental values of the prohibitions, such as respect for diversity and resilience, but the direction of the reasoning is altered. The prohibitions seek to embed natural history and values in society. The imperatives seek to embed society in nature.

Nature tourism can become one of the most visible domains of this fundamental conceptual change. Fennell argues optimistically, if critically, that conventional economic and commercial interests do not necessarily mean that nature tourism or ecotourism are incompatible with even strict measures and purposes of nature conservation and protection. (Fennell 2008, 81-88) Not only may nature tourism influence attitudes and behaviour which may have multiplied effects throughout society, it may also directly channel economic resources and commitments to a place's natural environment on its own terms and for its own good. This will be amplified if the local community is similarly empowered to identify its social interests with its natural environment, measured for example by rises in land values explicitly dependent on its natural features as they are and employment in their sustainable use. But these benefits can be quickly negated if the focus of the tourism is on realising quick optimum profits. The imperatives seek to buttress the will and the capacity of nature tourism to resist this temptation, and to declare public reasons for so doing which may be persuasive to others.

As with the prohibitions, I tentatively suggest some categories of imperatives in which specific activities can be located in order to justify them as practical contributions to nature tourism's fundamental purposes. A full account of the theoretical reasoning behind them, however, is not within the scope of this study. But even a superficial account indicates some of the social dimensions of ecosophy and its potential for maturing into a general social philosophy. Hence they indicate some structural aspects of the social project of sustainability which nature tourism is well suited to pursue.

The first category is imperatives towards nature, which hardly needs restating here, as it is explicit in the prohibitions. An underlying assumption is that, were the natural history of a place duly respected, nature tourism would be superfluous in protecting it and would be only a means of making a place accessible in closely manageable ways. The reality in which nature tourism must justify itself is rarely so favourable, and its function is correspondingly more significant. When sufficient respect is not accorded and the natural history trampled by other land uses, nature tourism is useful where it can declare and demonstrate the social value of the natural history and natural features despite contrary interests in the use of the place. Nature tourism seeks to give voice and form to nature amidst other social and economic interests. It can act as nature's representative, albeit self-appointed, and alleviate somewhat the absence of representation in society's decision-making systems. It can create procedures and structures of representation in economic and social structures not ordinarily much governed by representation by creating economic interests in natural history where before there were none. It can also demonstrate, perhaps, the finest features of a community's culture, those most expressive of respectful benevolence towards beings and entities usually excluded from membership in society.

This is an extreme of environmental responsibility: nature is not the environment; society environs nature. The imperatives of this perspective change seek to instil fundamental ecological responsibility in which any land use which does not leave natural history inviolate must be justified, and nature compensated for the loss through policies of restitutive justice. (Taylor 1986, 304-306) It is also necessary to prevent further losses by developing alternative public policies and attitudes. Nature tourism may make visible environmental impacts in places where they are neither intended nor even accepted, but which may not be recognised as significant, and demonstrate the opportunity and feasibility of viable alternatives.

The alternative land uses of conservation and protection are not merely expressions of ethical commitments. They are also occasions for distributive justice through the highly contentious matters of who controls natural resources and for whose benefit. Nature tourism as a philosophical enterprise can articulate this issue not only for advocates of nature, to whom the question is not whether to protect and respect nature but how best to do so, but also for those to whom the issue is superfluous, incomprehensible or insignificant. (Wearing & Neil 2009, 65-74 ff) Nature tourism cannot evade this conflict, nor can it ignore its own culpability in possibly causing environmental harms even in its most conscientious demonstration of purportedly "appropriate use" of nature. Nevertheless, perhaps more than any other activity of nature protection, it both reflects and causes shifts, even minimal, towards ecocentric considerations of land use and environmental policies. The more it can appeal to otherwise legitimised values, such as distributive justice, the better it can foster this conceptual change. Nature tourism may often be surreptitious in this duty. But it must also, when circumstances permit, have the courage to declare itself forthrightly. The imperatives towards nature are intended to this end.

The means of acting on these imperatives, in addition to the prohibitions, include providing a variety of civic activities to facilitate direct participation in a place's natural history, attuning us to refine our sensitivity to nature and impelling us into encounters with nature which are pleasurable. Nature tourism can organise opportunities for behaviour from ecological virtues. All modes of human expression and understanding

appropriately facilitated for various age and social groups, such as visual arts, storytelling and dramatic performance, examining natural items, singing and dancing: the array of methods and purposes of behaviour to attune us to the natural history of a place is as diverse as the range of human capabilities, but more selective and ethically governed.

Nature tourism can also have more indirect influence by demonstrating the feasibility of appropriate technology, and perhaps developing it. In all its activities it seeks to bring natural history directly into society's prevailing discourses with as little mediation as possible through other social structures. It eschews anthropomorphic narratives of natural events, which trivialise them, unless the explicit purpose is through fiction to uncover the range of agencies within nature which we may not ordinarily appreciate as purposive. (Bennett 2010, 98 ff) Even with this proviso, anthropomorphic stories must attune us to the nonfictional narratives of natural history.

Through nature tourism society can somewhat naturalise itself. The more considerable are nature tourism's claims to legitimacy or even considerability as a factor of environmental policy, the more society completes itself in its fundamental task of empowering people to recognise right and good and to act accordingly. Nature tourists are encouraged to proselytise the value of their experiences. It must arouse their interest beyond the limits of the activities and motivate them to persevere in duty, if only from the pleasure of their memories of their sojourn as tourists in nature.

This indicates the second category, imperatives towards people. It involves nature tourism in the contentious realm of the formulation and formation of human character disposed to virtue generally and ecological virtues specifically. Not only does it impinge on other institutions designated for this, it also challenges them, both to perform their functions better and to alter their criteria and methods of character formation. Nature tourism must be discreet. It cannot dogmatically declare what virtue is, what kind of person behaves from it, or what kind of behaviour that is. It has no sanctions at its disposal, other than those accruing to the prohibitions effective in its immediate activities. It must respect personal autonomy and self-determination and do no more than demonstrate within the confines of its activities that virtue is possible and practical, that acting from virtue forms character disposed to the ecological duties of respect for nature, and that consequently when once a person has been a successful nature tourist she can remain one wherever in society she is.

Through its practical instruction in earth education, nature tourism enables dispositions to virtue to find expression and mutually reinforcing acknowledgement among the tourists, who may subsequently transmit it further. In this sense, perhaps, it is a mode of elitism, seeking to educe excellence from the best persons. But its elitism is available to all, just as is nature. Its appeal is v b widespread, if often latent and intermittent until proven otherwise, and even then it must strive to establish its appeal. Nature tourism can abide no social structures of exclusion.

On these grounds it is clear that the imperative is focussed most directly on the nature tourists themselves, whose choice to participate can be taken as an act of self-determination to practice virtue. Nature tourism respects this by facilitating the tourists' capabilities to generate their own activities, governed by the tourist operator's function to organise and supervise the observance of the prohibitions. A nature tourist, then, is not primarily a customer, she is a partner in the project to participate in natural history, perhaps only less schooled and experienced in it. But this entails the imperative for the operator that in

marketing the activities there be no misleading themes, no irredeemable promises or false accounts of what the nature of a place is or what is expected of the tourist.

Appeals to character formation and virtue may not be an attractive ploy. But there can be no compromise with honesty about nature and the demands of participating in it. The duty of honesty and truthfulness in marketing is perhaps contrary to advertising's established norms and methods. But nature tourism cannot discharge the duties of its imperatives to people if it reneges on this requirement. (Buckley 2009, 70-79) It must attend scrupulously to an examination of its own practices and environmental impacts, not as intended but as they are. It must not succumb to the blandishments of false or unverifiable marketing measures and messages. Not the least of my ambitions for this study is to argue for the substance of honest and truthful marketing to be suitably adapted by those skilled in popular persuasion. On this matter too Emerson is a difficult taskmaster. Character is neither reflected in, appealed to or enhanced by what passes as successful marketing. "Impure men consider life as it is reflected in opinions, events and persons. They cannot see the action until it is done.... Character is centrality, the impossibility of being displaced or overset."(Emerson 1950, 369-371) Nature tourism must induce character before its activities, lest the tourists fail to recognise them as mandates and possibilities for virtue.

In two further respects nature tourism assumes imperatives towards people more indirectly. Because the purpose is to bring nature and society closer together within natural history, the environing community and culture must be respected and if possible utilised to its benefit. The limit of this is of course those instances in which the environing community has an exploitative and hostile relationship with its immediate nature. But even then, when nature tourism is a direct challenge to it, the local community cannot be cast as an enemy, at most as an obstruction which informed cooperation can overcome. A focus on localism is implicit in activities designed for participation in the natural history of a place. But it has as well the further dimension that nature tourism cannot thrive in a hostile community or even an indifferent one. Well rooted in a community which acknowledges it as a good, it can endure a hostile or indifferent society. Likewise it can bolster a community's own defence of its nature against the power of a delocalised economic system or authoritarian society. Nature tourism must develop effective means of "adaptive co-management" through which the community, clients and tourism operators alike collaborate in the governance of their difficult task to use nature by respecting it. (Plummer et al 2013, 541-551) This may contribute to the development and interpretation of reliable indicators of what the tourism actually does to the environments of its places.

A second indirect imperative is to demonstrate the practicality and pleasure of ecological virtue to those people who do not participate, to show that the pragmatics of ecological duty can engage everyone in some manner for a general good. As with virtue generally, ecological virtue is within the capability of any normally competent person, if the opportunity, motivation and communal recognition are present. In its public relations nature tourism can communicate this even to those not enticed by its activities. The pragmatics of ecological virtue can be linked to seemingly unrelated pleasures or situations: the joyful innocence of a child swimming, the ordinary compassion we feel for suffering, awe at the spectacle of a natural creature behaving magnificently.

Ecological virtue is not isolated from other experiences of excellence. It must not be propagated too forcefully. But its context and purpose need be explicit both within the immediate situation of the tourism and as a pre-eminent social attitude and ethic. The

experience of duty and virtue can be expressed both by former tourists who recapitulate their experiences, and inter alia by extended local economic interests in the viability of the nature tourism venture. Commercial economics cannot be discounted. But it cannot be overriding. Nature tourism does not promote itself as selling a commodity, but as providing a service which transcends and enhances economic interests. It nurtures the feeling most of us have that we are something more and better than merely commercial subjects and economic factors. Commitment to duty proportions commercial interests to greater values, and it is incumbent upon nature tourism operators to provoke this public discourse.

Imperatives to society are the third but not necessarily the only other category. It is apparently straightforward, given the limited scope and resources of nature tourism, but its ethical significance surpasses perhaps all the others, including the prohibitions. Its fundamental aspect is to find in its own sphere, and then to propagate to society, a naturocentric solution to Aristotle's dilemma of the potential impossibility of being at once both a good person and a good citizen. The dilemma starts with his assertion that a mandatory purpose of the virtues is commitment to the good of others. Virtuous actions always serve in some discernible way such loci of good. (Aristotle 1987, V,i) Circumstances dictate the extent and means, but not the motivation. For the person, virtue has two public dimensions: to be a good person, and to be a good citizen. A good person is committed to the good of humankind universally and particularly, while a good citizen commits to the good of the body politic through and in concert with other citizens. One of the virtues of being a good person is to be a good citizen, and conversely, the criteria of good citizenship include being a good person. But above that, the virtues of good citizenship are defined by the duties, rights and capabilities inhering in the citizenship of that body politic. (Aristotle 1986, III, iv)

The dilemma is that the body politic may demand of the citizen duties and capabilities incompatible with being a good person, if the body politic itself is flawed by injustices preventing it from service to the good of others. In such circumstances a good citizen must forfeit the virtues of being a good person, and a good person likewise the virtues of citizenship, and to that extent each is the less virtuous. The virtues cannot be realised in both at the same time, and thus a person is faced with the impossible choice of which set of virtues to deny. To act on that choice is to abandon virtue overall. Aristotle does not clearly specify the beings whose good is the concern of the virtuous person. However he does indicate two relevant considerations. First, natural beings have a good of their own, and hence by implication are included in the scope of the virtues of the good person. Second, the effective cause of being a good citizen is to be governed, so that a citizen's virtue originates primarily in cooperation with the governing of the body politic. A just body politic will commit to a wide range of beings whose good is its duty to serve. To be governed is to participate in this commitment. In a flawed, unjust body, the citizen is committed to injustice to the extent that the good of some is neglected or violated. Ecosophy entails a considerably wider definition of good and the beings to whom it is owed than in Aristotle, but the reasoning is similar.

The assessment of what constitutes a fundamental injustice impelling citizens into the dilemma is an ideological judgment. Vegetarians will decide differently from soldiers. Nature tourism is grounded on the assessment that our social order is flawed to

injustice in its relationship to nature. It seeks to demonstrate how a good person may act from virtue to remedy this injustice, and yet stay within somewhat the acceptable limits of citizenship. The nature tourist does not break laws. She might demonstrate their inadequacies or injustices by showing that nature provides plentiful opportunities for more benign behaviour. Nature tourism seeks to extend the reach of law by transforming its purposes and implementation for the good of nature. It does this by enlarging the concept and scope of citizenship, a massive problem to which I shall return below. Its imperative to society is to unite these dimensions of good in a coherent notion of virtue, realised through the duties implicit in its activities. However temporary it is, it can strive to prove a resolution possible, and provide ethical resources for nature tourists to seek further resolutions elsewhere.

Perhaps the dilemma is overstated. Aristotle's arguments for the stark polarity are simply assertions. There are ways of managing the incompatibility which are ethically valid and practical. Our concept of citizenship is not totalitarian as his is. It is also possible that a philosophical judgment that our social order has a fundamentally unjust relationship with nature is faulty, either in being too dogmatic or in problematic concepts of nature or even in the intelligibility of justice in the relationship. In any case nature tourism shows the limitations of the judgment by providing opportunities to act justly towards nature, even if incompletely and provisionally in spite of an unjust body politic. It is intrinsically an exercise in equity wherever justice to nature is inadequately realised. The notion of equity, the rectification of the failures or miscarriages of more formal processes of justice occurs in tourism studies, but it is conventionally applied only to the diverse groups of people whom tourism may affect adversely. (Buckley 2009, 113-114) Ecotourism demands concern with equity beyond its immediate interests, and perhaps against them. Nature tourism extends equity to nature.

Problems with Aristotelian reasoning do not however detract from the force of the imperatives to society, which even with a more moderate assessment of the dilemma express Rawls' notion of the natural duty to amend injustice, wherever and however it occurs. With more optimism than Aristotle, nature tourism accepts the imperatives to extend the realm of responsibility and freedom to other sectors of society in its encounters with nature, and to declare emphatically that nature is not secondary to other interests, that it is not only an environment, that injustice towards it or through it to people is unacceptable, and that what ultimately is at stake is the viability of the social order and the flourishing of humankind. It takes the concept of sustainability literally, if not dogmatically.

The most obvious measures of this category of imperatives are in fact rather self-centred. Nature tourism must attend to its own viability. This means providing activities which are acknowledged to be significant and pleasurable in places of favoured natural features and yet remain within its own resources in order not to be too expensive in money, time or well-being to its potential partners and not too dependent on public subsidies, which are always vulnerable to contestation. It must demonstrate the legitimacy of its demands for society's support, including financial subsidies and restrictions on competing land uses in certain areas. Because it is not primarily a commercial enterprise, it must establish itself against the often prevailing attitudes of hostility, scepticism, ignorance and indifference, as an investment in the future and rightful common good. Nature tourism challenges the ruling order, but it must do so constructively and with

good will. It can speak authoritatively on what it knows and leave the larger implications for others to discern.

In a larger context these imperatives point also to two further and obvious dimensions, both of which I have argued from diverse perspectives, indicating the scope and coherence of the beliefs which nature tourism seeks to nurture and realise. One is nature preservation and protection in all its many forms and degrees, an imperative it can and ought to share with all forms of tourism. (Hemmi 2005, 207-313) Any place whose natural history is respected, and to the extent that it is respected, is a gain for nature generally. While it is not alone in making a case for preservation, it can perhaps more easily argue for its immediate practicality in ways that engage persons whose motivations are largely self-centred.

Without dogmatism or rigidity, nature tourism can demonstrate the manifold possibilities of relating to nature with greater justice, and project these possibilities into realms of public policy which are not immediately concerned with its activities. A neglect of environmental education in the school system narrows the scope of purposive behaviour, and thus violates human rights. Waste treatment may fail to include environmental impact in its planning and operations. Nature tourism can show these and many other similar defects in public policy have repercussions far beyond their conventionally defined scope. Nature tourism need not abide by conventional categories. It has the imperative to make more audible and inclusive the discourse of sustainability throughout society. It must vigorously represent the reasons and opportunities for nature preservation wherever there is reluctance to pursue it and against whatever incurs intended and unintended harms to nature. Its perspective cannot be merely to assure its own operational environment. It must promote the good of nature on a disinterested scale, because it knows what it can offer people otherwise estranged from nature.

A second dimension is to alleviate the widespread reluctance to acknowledge the good of nature, or to circumvent it, by contributing to the reconstitution of power and influence in ways to make the case for ecological justice and respect for nature more self-evident and legitimate. One path to this social change is to strengthen civil society as a public realm through enlarging the variety of activities directly realising respect for nature and participation in natural history. When nature tourists engage in their activities they also tend to constitute themselves as a communal group committed to the natural features of a place, not only as a means to their pleasure but as a declaration of social right. In being a group focussed on a shared purpose and mutually acknowledged duties, nature tourists create a contingent, temporary public committed to activities which are governed as much by their consequences as by their purposes. As a public founded on a relationship with the nature of a place, they embody ecological responsibility as one mode of public behaviour and norms amongst the others in society. (Bennett 2010, 100-104) Through an intensely human entity they demonstrate that human agency need not be privileged to the detriment of larger realms of purposiveness. Civil society is enhanced.

Within this contingent community, nature tourists are empowered to modes of virtue previously unknown to them, or beyond their capabilities. Their communal presence in nature nourishes their will-power to duty. They commit this to the group, whose collective capabilities exceed their own and express them more fully in their autonomy within the group. (Pettit 2007, 78-96) This is not fascism; it is anarchism. Their group can be self-

unifying for purposes greater than their own because they are mutually and wilfully its authors. Duty and virtue inhere in their participation.

Nature tourists are willy-nilly civil activists, and they do not act as consumers. They become accustomed to natural history as an enabling factor in their own endeavours. Their experience of autonomy and self-determination is intensified, detached from the structural and institutional restrictions and heteronomy of ordinary life. The restrictions they do observe are inherent in their activities and enacted through communal cooperation. When a group is walking on duckboards across a bog, few of their number will demand motorcycles to speed their passage, in spite of the mosquitoes. But they will assist those with blisters and endure their own with fortitude.

Once empowered by the mutual aid and common endeavour to respect nature by participating in natural history, they may not so compliantly recede into the more passive and selfish roles allotted to us by conventional society. Nature tourism cannot be an overtly political project. But it can subtly alter the structures and purposes of political power by representing and realising modes of good too often neglected or displaced. It enlarges the public realm into nature, not as a mandate for further exploitation, but as protection against it, as a dimension of responsibility which individual persons and civic groups are eminently suited to bear. Nature tourism expands the domain of citizenship.

ECOLOGICAL CITIZENSHIP AND THE BURDEN OF VIRTUE

> *When I would recreate myself, I seek the darkest wood, the thickest and most interminable and, to the citizen, most dismal, swamp. I enter a swamp as a sacred place.... There is the strength, the marrow of Nature. The wildwood covers the virgin mould, and the same soil is good for men and for trees.... There are the strong meats on which he feeds. A town is saved, not more by the righteous men in it than by the woods and swamps that surround it.... I rejoice...that men themselves have some wild oats still left to sow before they become submissive members of society..... Men are in the main alike, but they were made several in order that they might be various. If a low use is to be served, one man will do nearly or quite as well as another; if a high one, individual excellence is to be regarded.*
>
> *Henry Thoreau: "Walking"*

The purposes of citizenship seem indisputable, as the alternatives are unacceptable. Citizenship is constituted by rules within institutions representing a body politic, which specify rights, obligations, limits on behaviour and to some extent on attitudes, values and beliefs, through which persons as members of that body perpetuate it and guarantee that it respects their indefeasible interests. It is the institution for acknowledged, autonomous and mutually reinforcing reciprocity of rights due to citizens in order to legitimise the body politic, and duties owed by them to it in order to sustain it. This reciprocity gives citizenship its contractual dimension, but its purposes and origins cannot be intelligibly reduced to that conceptual postulate, nor its justification grounded so narrowly. Contractarian arguments beg the question of how to justify the powers necessary for contracting. This is one reason more why duty to nature cannot plausibly be formulated

as a contract. Other modes of reciprocity may be argued, but are entailments of more fundamental concepts than contract. Similarly citizenship must be evaluated, and if found wanting, altered, on more fundamental grounds. If it is sustainable, the duties will be discharged primarily to secure those rights which lead to the common good of the body politic and its members. Insofar as duties function otherwise, the body politic is to that extent unsustainable, and forfeits legitimacy. Citizenship is the individual empowerment to social justice.

Aristotle sees in citizenship the pragmatics of self-governance, the realm of public, voluntary yet obligatory acts which are necessary to live virtuously. The citizen is bound to acquire the knowledge and capabilities of virtue, to become an effective cause in the body politic and to narrow the range of personal dependence on involuntary or compelled acts. (Aristotle 1986, III, i-iii) In this way the citizen takes responsibility for the condition of the body politic individually, and when acting in concert with others for shared ends, collectively. Constitutive conditions for responsibility are inter alia effective means of public deliberation and decision-making, shared and assumed notions of good which are not contingent on specific circumstances or decisions, and above all loyalty to the body politic and its institutions of citizenship founded on commitment to its ultimate ends.

Most contemporary accounts of the concept, at least in presumably liberal Western societies, derive from Aristotle's notion. Marquand locates citizenship as the role sets and resources of the individual person within the "public domain" in which services to and among persons are equitably organised and distributed. The public domain is the sphere in which contributions from diverse quarters to pursue common interests meet and attain some balance of coherence and proportion. (Marquand 2004, 1 ff, 26-32, 131 ff) Such contributions may be private, governmental, personal, communal, economic and cultural, everything in fact which impacts on the social conditions people share. Although he does not explicitly state it, this is an environmentally grounded concept of citizenship. Through citizenship the person transcends her personal privacy to lay claim to be a recognised actor in producing and using services, by right. It is, then, more than a set of roles and capabilities. It is the public recognition of the integration of the various aspects of personal life into an inviolable individuality whose realised and potential capabilities and features are at once both the origin of the body politic and its purpose. (Dagger 1997, 98-104) Through citizenship we acquire the strength to become self-determined. It transforms us by empowering us to purposes we might not otherwise comprehend or venture upon.

Above all citizenship requires established norms and procedures of public deliberation, which Rawls identifies as "public reason."(Rawls 1999, 132-148) Public reason entails minimum standards of admissible content: certain questions, the re-establishment of slavery for example, do not merit deliberation within the range of its tolerance. But because such precluded issues are relatively few, public reason is more explicitly applied to methods of argumentation and persuasion, and to their institutional preconditions. There must still be room for "comprehensive doctrines" of right and good, the real expressions of public ideology, whose only restriction is that they accept the procedural stipulations of public reason in their relationship to each other and to society, and do not seek to usurp or destroy it. Public reason inculcates a "culture of civil society" governed by an ideal of the duty of civility among citizens. This ideal is not contingent on Rawls'

rather narrow notion of individual rationality. It may exclude some modes of mysticism, as which ecosophy is sometimes erroneously conceived, but Rawls clearly allows for personal beliefs in mysticism on condition that they do not seek to impose particular duties or modes of civility. A mature ecosophy may seek to enlarge civility, but its justification in personal belief precludes any pretensions to determine civility for citizens in general. In this respect ecosophy may be tolerant to a fault, albeit necessarily so. Strict nature tourism might be a means to circumvent concepts of civility which exclude or devalue nature.

Rawls' intent is to suggest a doctrine of a "realistic utopia," which at once extends the bounds of what is ordinarily believed to be possible and practical, and which indicates the extent of remediable failure in the existing social order. (ibid 6-44 ff) As one purpose of utopia he suggests "environmental integrity." But his primary stress is on the possibility and necessity of moral learning among citizens to accept the duties of basic rights and liberties, and take responsibility for their causal agency in society. The definitive criterion is that citizens "offer one another fair terms of cooperation" according to some shared conception of justice, which must be broad enough to encompass a considerable range of values and doctrines, but not all. Relationships with those excluded are, however, governed by public reason, as are the stipulation and distribution of the rights, obligations and capabilities of citizenship.

But citizenship is not an ascribed status. It is achieved by merit, and may be variously circumscribed or rescinded by violation of its conditions. Equally precarious is its institutional structure, which is vulnerable to decay, abuse and assault. Its final defence is the assumption of duty. Duty is neither a declaration nor a conjecture, but simply a necessary corollary of public reason. (ibid 55-57, 155-156) It emerges from and nurtures a sense of justice which define right and conceptions of the good which are right realised. Despite his philosophical liberalism, then, Rawls does not found duty on reciprocity, but on moral reason, from which reciprocity follows.

In a sense this reasoning is a mode of contractualism, which is a less hypothetical version of contractarianism. It both assumes and seeks to enhance explicitly articulated and shared notions of public right, within which diverse dimensions of good can be pursued and made commensurable, or at least co-existent. It is not, however, strictly speaking, a contractarian argument, but rather a communal and social expression of ethical coherence emerging from discrete yet communicable comprehensions of right and good. Environmental philosophy argues similarly. It purports to demonstrate that nature, however conceived and experienced, is a necessary basis of value and a pragmatic occasion for duty in places whose natural features and history we value. If Rawls' notion of environmental integrity is comprehended sufficiently broadly, moral reason must concern it. It will become a necessary dimension of the procedural stipulations of public reason. Nature tourism suggests that duty to nature can be a realistic utopia.

This superficial account suffices to indicate the domain of ecological citizenship. By extending the scope of right to nature as both its intrinsic and existence value and natural good, and through nature to fellow citizens as the diverse rights to a healthy environment, ecological citizenship directs duties to actions and attitudes for the good of nature. Civility is extended to embrace nature's rights and goods. Our capabilities to act on it do not wait for reciprocity from others, but it is much reinforced thereby. On this basis we can clarify some aspects of nature tourism's possible contribution to citizenship, and its

suitability as a domain for us to exercise and develop our capabilities as citizens. The concept of ecological citizenship will acquire more content.

Nature tourism's activities engage nature tourists in actions which cannot be reduced to personal privacy, because nature is necessarily public. The more they must cooperate with each other, which is one ideal of nature tourism, the more their common endeavours enhance capabilities of decision making through public reason, focussed on the good of others. When the tourist operator explains these activities through natural history, their experience of public reason acquires a dimension whose rules of persuasiveness are clearly visible in natural events and features. There may be conflicts, if the consequences of the activities are complex and uncertain, or if evaluation and interpretation of the considerability of natural features differ. Nevertheless the procedures for resolving these conflicts inhere in the procedures of descriptive natural history, which at the very least will invoke the precautionary principle in cases of doubt.

What cannot be left in doubt is that the activities concern matters of potentially ultimate good which cannot be reduced to merely instrumental interests. Ultimate good is universal, even if the local features of the place do not demonstrate this universality. Nature tourism does however demonstrate the need and possibility for a mode of public reason that focuses on the largest potentialities of life, which in their particularities engage the virtues of human benevolence, compassion, aesthetic appreciation, pleasure, modesty and truth. (Bookchin 1990, 7-27) The potentialities of natural history, its diversity and resilience, absorb the tourists into the most inclusive of public domains, in which each person can participate to the full extent of her capabilities of self-determination, in principle irrespective of any social inequalities and inequities which otherwise restrict her. For the duration of its activities, nature tourism abolishes social stratification and exclusion, and opens to its partners equal and unobstructed access to deliberation about how to govern their participation in natural history, and through it in a fundamental condition of justice.

This is citizenship undistorted by injustice. However modest its scope in practice, nature tourism provides resources for active citizenship in domains previously inaccessible in order to experience the transformation of preferences, habits, beliefs and expectations through the realities of nature outside somewhat the structures of the environing society, although mediated to us by them. This is nothing less than the expansion of conventional citizenship, with its civil, political and social rights, to an ecological citizenship which seeks to extend such rights in appropriate forms to nature, and through nature to all people present and future. Ecological citizenship loosens our dependence on the compulsory and involuntary requirements of citizenship organised through the state. (Christoff, 1996, 151-169) It creates new realms of freedom and new burdens of responsibility within the comprehension of any person encountering nature without the intention of exploiting, possessing, subduing or fleeing from it.

The modesty of nature tourism's scope is a resource. It can develop alternative capabilities of citizenship not beholden to the state. It may be able to reveal in immediate encounters the universalities in nature's localities, without any direct challenge to the ruling power structures, which might cause them to suppress nature tourism altogether. Protected by its apparent unpretentiousness, it tends towards a reordering of society. Nature tourism provides practical experience of ecological citizenship in which the normative, personally binding aspects of sustainability can be comprehended through

modes of reason which are not fractured by specific and competing interests, but which immerse us in the deliberation of fairness towards the good of nature and through it of humankind. (Barry 1996, 115-131)

Ecological citizenship, even in the embryonic form of nature tourism, is a necessary condition for sustainability as a frame of mind. It redirects loyalty to both greater and lesser entities than the body politic of the state. In its participatory commitment to nature, it anticipates a genuine universality. In its localism it strengthens bodies politic within the state in a way possibly securing them somewhat from the brutalities of economic globalisation. By empowering us to autonomous participation in nature and attuning us to its diverse modes of being, ecological citizenship enables us to transform ourselves into subjects of nature, and hence be more capable subjects of society. It is an ultimate condition of existence. Ecosophy is a set of possible understandings of ecological citizenship.

The contribution of nature tourism to ecological citizenship seems incontestable. Through it we grow into what Bookchin calls "second nature," our essential selves in small, immediate bodies politic in which we are visible and audible, participating in nature to expand its benevolent potentialities, to strengthen ourselves against its dangers, and thereby to develop our own potentialities. (Bookchin 1990, 163-173) Because it is temporary, voluntary and, hopefully, recreational, nature tourism can do this more easily than Bookchin's excessively demanding programme of ecological, libertarian municipalism. Ecological citizenship is no longer merely an ideal; it becomes a practicality whose gradual development is within our capabilities. It engages our disposition to mutuality, and projects it beyond our own species and time. Within natural history it reveals opportunities for scientific, aesthetic, ethical and speculative thought and reflection. It is a necessary condition of self-awareness undistorted by mediating social structures whose interests are neither our autonomy and rights nor respect for nature. Even transitorily, nature tourism is an ecological body politic, and the more sustainable it is in any locality, the more ecological its environing local body politic is.

But ecological citizenship is beset with problems which nature tourism must recognise and attempt to manage, if not solve. Of the many which merit our consideration, I focus here on two of the most persistent, which I have already discussed in the foregoing exposition. One of them is the difficulty of motivating nature tourists to the project of ecological citizenship, which does not self-evidently contribute to or follow from their participation in the activities. To expect too much of them, and of us, is possibly to disparage what can be and has been achieved. If the expectations are expressed in complex concepts, as in this study, they recede even further from reality, thereby jeopardising not only nature tourism's ethical dimension but also its ability to govern its activities in proportion to the natural features of its location. That way lies the usurpation of the concept of nature tourism by purveyors of snowmobile and jet ski safaris.

Even without this distortion, the notion of ecological citizenship may impress many nature tourists as a category error, putting them into a role they seek to depart for a while. If their capabilities of citizenship are otherwise in order, they may well not want another increment to them. Like tourism generally, nature tourism is supposed to be a temporary release from conventional restrictions. It takes a subtle understanding indeed of ecological citizenship not to see it as a mere extension of these restrictions. Even a deeply motivated nature tourist may balk at assuming a new mode of citizenship, or indeed any mode

at all to excess. The notion of duty is not necessarily a good motivation to will-power. It does not promise ease and convenience, and often it has been corrupted by the injustices and dogmas of society's power structures. Nature tourism must not be seen as another of their instruments. Its demands on its partners must be significantly different, and much more expressive of excellence.

Emerson puts this problem well. We come to know ourselves and others primarily through our common endeavour of labour, to which nature, irrespective of the implements used, is both the necessary condition and the ultimate arbiter of the acceptability of the achievements. To know oneself, and thereby others, we must study nature. (Emerson 1985, 51 ff.) Effectively studied, we can see our own and other particularities as instances of universal truths. Persisting in this arduous reflection, we attain a consciousness of solitude in which truth, beauty and goodness may appear undistorted by society. Citizenship is one of society's weightiest burdens, and distorts our reflections if we depend too much on it. Emerson does not want to be a good citizen, or in ultimate matters a citizen at all. (Emerson 1985, 92-110) At best it is a distraction, at worst a corruption. He grants the need to perform necessary public actions adequately. Anything more estranges him from himself. He is particularly explicit on the accumulation of wealth. To the extent that it exceeds our practical investment in the good of nature, to that extent it forfeits justification, and serves only to increase our wants beyond our powers to satisfy them. An inadequate or erroneous understanding of nature will cause us to produce and consume wrongly. (Emerson 1950, 639-716) Ownership can by justified by the effectiveness of how we administer property, not by accumulation. Right consumption, then, follows from character. In its own activities, nature tourism seeks to restrain consumption and to empower us to value character more highly.

Although nature tourism is not specifically among Emerson's concepts, his way of life, at least literary, and even more so Thoreau's actually, demonstrates this reasoning, and how it might apply to us. When we resort to nature tourism, we can seek a study of nature which takes us into ourselves, intentionally and dramatically severed from society. To graft citizenship of any kind onto our participation in nature tourism is possibly to mistake the category of social knowledge and existence with that of self-knowledge and existence. Emerson does not reject the social knowledge of nature, but for him that is not its most profound aspect, nor need it be for nature tourists. Explicitly he rejects mastery. An encounter with nature can turn us inward. It "unlocks faculties of souls" attuned to natural forces and entities, providing us at best with experience of practical self-realisation as inhabitants of a place. This is virtue. "A life in harmony with Nature, the love of truth and of virtue, will purge the eyes to understand her text.... The invariable mark of wisdom is to see the miraculous in the common.... (N)ature brings it in the concrete to be solved by your hands."(Emerson 1985, 25 ff) He is searching for a truer mode of being than citizenship.

We do well to be reluctant to assume too hastily a new dimension of citizenship, or to assume that virtue and duty always sit well with it. Let nature tourism facilitate benevolent encounters with nature and refrain from any loftier pretensions. But we must overcome this reluctance and recognise the claim of ecological citizenship even if or perhaps particularly when the experience of the activities does not make it explicit, as indeed it seldom has any need to do. Ecological citizenship inheres in the fact that participation in the situated nature of a place necessarily brings society into it, even if we are each of us

alone there with only our preconceptions of what nature is and how to respect it. When nature tourism organises activities in self-governing groups, the social dimension is no longer a precondition; it is an essential aspect of the encounter and hence of the place's natural history for that brief moment. If we cannot avoid it, we must embrace it as intentionally and autonomously as possible. This confronts us with a second problem, which I have already discussed above at some length.

The assumption of ecological citizenship inevitably entails duties, including how to motivate ourselves to duty and empower ourselves to its capabilities. Because the body politic to which ecological citizenship is bound is not intended primarily to realise our immediate good but rather to greater realms of right, the Aristotelian link between the two concepts is altered. Ecological citizenship expands duty beyond the body politic, away from reciprocity with rights and towards increasingly impersonal dimensions of good. (Melo-Escrihuela 2008, 114-128) It is, much more than conventional citizenship, a burden of supererogatory duties grounded not in contractual obligation but in concepts of nature. These are not democratically determined, although a democratic social order furthers the freedom and responsibility of inquiry necessary for their development.

There are many reasons why ecological citizenship tends to duty. It is not institutionalised as a form of socialisation and education within and for a body politic, save to the extent that its duties may not in fact be due only to nature but concerning nature due to other persons, who reciprocate. Even in this case the actions of the duties are ecologically responsible to natural history prior to social responsibility to people. Duty to nature indicates the need for and possibility of a natural morality which is both a coherent vision of the world as it is and might be and a justification of one's own existence as an instance of that vision. (Clark 1987, 35-53) It is not therefore contractual in origin or in the actions to discharge it, although in consenting to be nature tourists we do contract to the specific duties of its activities.

The justification of a natural morality of duties to nature is not straightforward. It may be little more than mere assertions that we have or ought to have them, which is neither very persuasive and motivating to sceptics nor conceptually clear even to ecologically responsible persons. The duties of ecological citizenship are social and secular, and theological justifications only add another indefinite entity within or above nature as the origin of ethics and duty. A resolution to this impasse may lie in something close to Spinoza's notion of adequate ideas in which intuitions, reasoning, empirical facts and practical actions all lead to and indicate an independently existing reality of which we can have clear, distinct and true knowledge. Such knowledge entails duties to reality, lest we lose our own will to the fullest existence possible to us. (Spinoza 1989, 201-224) Duty is implicit in the coherence of our knowledge, which is our essential conatus to perfection. On these grounds duty is our most natural frame of mind to which we must return in spite of society. But such "power of the intellect" must have particular forms available to us even when imprisoned by inadequate ideas. One of the purposes of ecological duty is to engage us in actions with which our ideas become more adequate. This puts on us the onus of discharging duty prior to its justification, which inverts the conventional structures of duty. Ecological citizenship cannot conceptually resolve this circular argument. But it can prefigure a body politic in which duty is communally verified within the palpable contingencies of situated nature. Our ideas become more adequate. Conceptual justification can follow.

Duty is then essential to nature tourism, inherent in its endeavour to inform attitudes and behaviour. Nature tourism is an exercise in the development of ecological citizenship. Duty might lead to ecosophy, and without doubt ecosophy entails duty. Ecological duty indicates an ontology of potentialities discerned in the fecundity of nature and the breadth of its interactions with society, including the travesties of its abuse and debasement by society. Duty to nature relentlessly demands of us a strength of spirit with little tolerance of the human weaknesses and vulnerabilities against which conventional citizenship protects us. (Bookchin 1990, 74-85) Without an intensely mutualistic body politic, it may be hard to endure. We must motivate ourselves to duty with no clear end-state in view, save at best love for a particular place of favoured natural features.

My central argument in this study is that nature tourism is a means not only of facilitating our motivation to duty but of empowering us to its practical capabilities because thereby we can experience the pleasures of natural beauty and history, attuning us to an appreciation of its modes of being. An ecosophical claim is that these are the highest forms of human excellence, or at least an essential one. An empirical question beyond my analysis is the extent to which nature tourism can or has achieved this realisation of natural morality and ecological citizenship. If it cannot, my argument fails. The obstacles are many fold. Duty, as I have argued, is a contested concept, and ecological duty the more so. It easily engenders submissiveness to arbitrary authority. It is difficult to identify its beneficiaries, or to gauge the effect of enacted duties on them. Being at least partly supererogatory, or being considered so, it may impede obligation to more clear cut duties, or simply be denied as too difficult or impossible. And also, somewhat contrary to these contestations, it may lead to a self-centredness of virtue incompatible with other rights, duties and goods in society.

Duty is not always a benign frame of mind. When its practices are intended to realise potentialities, whether in nature or society or ourselves, it diverges from the moderating social constraints of reciprocity and tends to elevate one's own will as a natural and social causation irrespective of the consequences. (Condit 1987, 17-33) In the context of nature tourism, such megalomania is not probable, and would be difficult to act on. But if ecological citizenship takes root, it may find less benign spheres of action elsewhere, unless it is firmly based on the governing principles and practices of conventional citizenship. Some of the excesses of animal liberation may be an example of this, in spite of the prevailing tendency of the ruling order to distort its arguments and intentions. Ecological citizenship, then, is not an alternative to but a development of conventional citizenship. It may assume some conventional features, but it can also transform them.

Ecological duty is more than a disposition to act in ways coherent with the notion of ecological citizenship, prefiguring and preparing for it. This is the explicit message of nature tourism to its partners. But this understanding is not sufficient. Insofar as it organises some initial experiences of ecological citizenship, nature tourism, I have suggested, also becomes a body politic of ecological citizenship and assumes the responsibilities inherent in that relationship with its partners. They must act with the civic duty of civility to promote good in such a manner than the body politic is itself strengthened. They must act to govern themselves with and for the body, to develop their autonomy as a duty to it and to its purposes, which include both the good of nature and the transformation of other values, interests and behaviour in society to this end. The claims of civic duty are

no less than the duty of virtue. (Dagger 1997, 13-40) Ecological duty follows necessarily from ecological citizenship, which is itself a necessary if usually inchoate structure of nature tourists' participation in their activities. Duty is an essential capability of the virtue of citizenship.

Ecological citizenship is a commitment to virtue conceived as disinterested participation in nature's rights and goods as the highest mode of autonomy, self-determination and self-governance. Autonomy includes acknowledgement of the justified demands of an ideal body politic on our actions and beliefs, so that we commit to its good, which is transcendent to its own specific interests. Autonomy nurtures a critical distance from any real body politic which falls short of this ideal. (Condit 1987, 54-59) Nature tourism allows us to express in practice respect for nature even when it falls short of its aspirations, but in return it entails a refusal to acquiesce in the social structures and practices of disrespect, which includes also its own shortcomings. But nature tourism does not necessarily empower us to this refusal. A necessary function of the greater self-transformation of attunement is to discern when nature tourism fails in this manner, and when a form of tourism marketed as eco- or nature tourism is another kind altogether. We cannot afford naivety that nature tourism is what it purports to be, even when it aspires to rightful ends.

The burden of virtue required to sustain these conflicting, almost incoherent pressures is formidable. Nature tourism is a mutual undertaking to virtue, which is a more attractive motivation to will-power and ecosophy than duty because it appeals to our self-esteem and to our intuition of our own excellence. With such an aretaic motivation, duty may seem less onerous. I must return then one last time to an account of virtue in order to examine briefly how nature tourism can do this without forfeiting its function as a voluntary endeavour for the pleasure of encountering nature. Conceptually the argument is simple, in practice complex, obscure and never wholly successful.

Despite the central significance of duty in the ethical configuration of nature tourism, it does not depend on or stimulate a primarily deontological respect for nature. This would be insufficiently motivating, at least outside the immediate confines of its activities. Deontology is essentially an ex post facto conceptual structure and a practical ethics for only very strongly motivated persons. On the contrary, nature tourism fosters ecological duty through an aretaic respect for nature, the experience of natural history as an experience of one's own potential excellence which is an instance of it.

While eschewing any explicit declaration of what our characters ought to or might be, nature tourism seeks to create opportunities in which we can realise the virtues of committing to the good of nature, and knowing we are right in doing so. It seeks to demonstrate that these virtues are practical and possible, that they can transform other values and practices, and that we can become better thereby, not because we are told to be or how to be, but because our excellence is implicit in the encounter with nature. Virtue is a supervenience on the facts of natural history as we react to them if adequately perceived. Insofar as nature tourism succeeds in moderating both nature's ruthlessness and human excesses, it empowers us to act from virtue. The motivation to duty is the aretaic experience of nature. From this we can discern the demands of ecological citizenship.

This approach is, as I have suggested above, broadly Aristotelian. It is not enough to possess a character knowledgeable of and disposed to the virtues. We must exercise them, even at the risk of failure. We must become habituated to them. An aretaic frame

of mind is necessary for understanding, but it also follows from practice whose ultimate good is a complete life of virtue. (Aristotle, 1987, I, viii, II, i, ix) On the way, even without ever attaining it, we can experience the pleasures of the excellences in other things, stimulated by our own. This is not a recipe for an easy life. It demands a persistent struggle of self-governance. The promise of nature tourism, among other means of benevolently encountering nature, is that it can assist us in this struggle with little compromise on the motivational conditions of voluntarism, autonomy, pleasure and situational limitation.

An externally necessary condition, of course, is that the nature we encounter is self-evidently good. This does not mean tame, or harmless; wildness is essential to nature's good. But it does mean that our encounter be structured in such a way that we are induced to feel both its good and our excellence in responding to it. The thrill in beholding a spectacular landscape is an obvious example of excellence. It may not do to delve too closely into the origins of our appreciation, but some self-awareness that we are capable of it is sufficient to indicate our potential for excellence. Natural beauty takes us away from our mundane affairs, towards greater things.

Beholding natural beauty, we can relinquish claims to causal agency because we can acknowledge that there is no human way to improve what we see. We do not ask why or how it could be different to its or our advantage. We see anthropogenic impact, possibly often wrongly, as degradation. (Sepänmaa 2010, 51-59) But it is always important to see it. In regarding the beauty of natural history we transcend the restrictions of human and social time. If we are led to inquire into the history, we are induced into ecology. In diverse ways we transcend our conventional situation and become more primordial, more knowledgeable and more self-aware. Our being moves closer somewhat to perfection. We can cultivate this feeling to encompass a widening circle of environments, behaviour and beliefs. We can, as MacIntyre argues from a related perspective, feel the virtue of being with and for a community of good, and being a constitutive subject of this community through its representative practices. (MacIntyre 1985, 146-164) Ecosophy may germinate there.

With apparently unpretentious means nature tourism can possibly provide an environment for the development of virtue specifically suited for practices in encountering nature, but ultimately touching on the whole of our existence. Participating in a natural history of good, we can act for the sake of virtue, feeling within a "fine inner state" of our natural excellence, guided towards practical activities conducive to wisdom about what constitutes good in at least that particular situation. (Swanton 2005, 128 ff) In these relationships, virtue need neither exaggerate our self-centredness nor subject us to self-abnegation. We can come close to a place we love and keep respectful distance from its nature. Our appreciation of its natural features nurtures receptivity to its details, from which our comprehension of universality becomes palpable. Not least, nature tourism limits both its own and nature's demands on us. Excessively supererogatory duties can negate virtue. Even in the easiest of circumstances, acting from virtue calls on strength to bear its costs of self-restriction and motivation. (ibid, 198-211) Aretaic motivation is never easy. Nature tourism can make it as easy as it gets, without trivialising its purpose of respect for nature or its context of the features and events of natural history.

The structure of virtue in nature tourism is similar to any sphere of civic virtue and duty in a public realm governed through public reason. This is recognised even by such

a stern naturocentrist as Taylor, whose notion of respect for nature both leads to and depends on the nurturing of a deliberative character of "self-mastery."(Taylor 1986, 198-212) If we know how to respect nature, or want to learn, we can know or seek the required features of character, such as integrity, patience, courage, disinterestedness and "steadfastness-in-duty" from which we acquire the strength of mind and behaviour to act on this respect. Ecological virtue extends to nature the conventional virtues of citizenship, such as benevolence, compassion and sympathy. Nature tourism instructs us to actions from these virtues. From these actions we enrich conventional citizenship and thereby become subjects of better, more just bodies politic.

But respect for nature is only one dimension of the virtues of respect for other goods. Every realm of good implies attitudes, beliefs and actions somewhat specific to its own forms of social being. Although respect for nature pervades society, it also focuses on specific, usually contentious issues in which the good of nature does not seem to cohere with other goods or to be self-evidently right. Ecological virtues inhere in those practices intended to defend or extend the good of nature. They acquire their characteristic profiles from the demands on us which can be distinguished from other demands either by their relatively greater significance to nature or by their relative insignificance to other goods. But we cannot act from them or reduce our duty to them in disregard of other virtues, duties, goods and rights. We need to specify what ecological virtues are in order to proportion them coherently with other demands on us. Being provisional and voluntary, nature tourism facilitates our capability to do this in situations we choose somewhat for ourselves, and to act from contingently comprehended ecological virtues in places of nature.

Typical ecological virtues in this sense would be for example acceptance of human finitude, asceticism, receptivity to nature's many modes of being and attunement to their messages. An account of the ecological virtues follows from an account of the how we can recognise the good of nature as a purpose of society, and of the activities to pursue that purpose. Ecological virtues are the character traits needed for discharging these duties in an exemplary manner with the inner state of awareness of the significance of what we are doing. The ecological virtues realised in duties derived from the activities of nature tourism are specific to each situation, in addition to expressing the less focussed virtues of excellence in our character.

What might seem to be a rather burdensome ethical attitude not easily accessible to anyone is in fact not unlike broadly recognised aims of nature and ecotourism marketing. Wearing and Neil profile some features of the typical ecotourist. She possesses and seeks to act on an environmentally centred ethic. She is intrinsically motivated to refrain from degrading any feature of natural history, and she defines degradation with considerable strictness. Her orientation to her responsibilities is biocentric, even perhaps ecocentric, which she strives to realize through immediate, first-hand experiences. She expects from nature tourism guidance and enlightenment to heighten further her capability to know and appreciate nature. (Wearing & Neil 2009, 196 ff) Nature tourism markets for these character attributes and promises to fortify them by giving occasion and reason for them to flourish. It seeks to be accorded satisfaction from its clients or partners by providing situations in which they can be willingly virtuous in these ways, freed from the constraints of ordinary everyday life. But it need not present these character traits as virtues; they are skills needed for full appreciation of the activities provided. Too much moral

proselytising would be dubious commercial practice. Nevertheless nature tourism is a means of ecological virtue by constituting bodies politic in situated nature. Participation in its activities is a mode of ecological citizenship which depends on virtue.

Ultimately, however, the potential of ecological virtue is wider. It anticipates a naturalistic foundation of virtue founded on a much expanded notion of human flourishing within and for a flourishing nature. (Sandler 2007, 10 ff) Supervened on the specific ecological duties of behaviour and beliefs in service to respect for nature is a teleology of human purpose as an instance of natural history, and governed by its conditions. Nature is understood as more than an environment of society. It is a necessary condition, and natural entities are society's members. The teleology of ecological virtue prefigures an inclusive notion of ecological citizenship transcending both anthropocentric religiosity and materialistic secularism. (Curry 2006, 100-107) Its teleology is towards a re-enchantment of the natural world through descriptive and analytical ecology, practical commitment to specific actions to respect nature, and a form of wisdom congruent with these beliefs and behaviour, an ecosophy. There is little space there for self-righteous dogmatism, ecototalitarianism or despair. There is also little comfort there for those mired in apathy, detachment or a blithe pursuit of amusement. Nature tourism demonstrates the magnitude of ecological citizenship, and provides a modest access to it.

Ecological virtue is also contested, not only in relation to other virtues for other goods, but also in relation to the impact on nature through the ecological duties of specific encounters with nature. Ecological complexity entails a complexity of values and behaviour which makes certainty about both our motivation and our consequences untenable. (Belshaw 2001, 205-228) Human flourishing is itself a contested notion. We know well enough the absence of human flourishing, but nature and people do not always flourish together or compatibly. We cannot assume that ecological duty and virtue invariably take precedence over other kinds, or that ecological citizenship suffices to sustain any body politic. They are modes of public reason, but not exhaustive of it.

Nature tourism is usually contested. It must propose those duties most invulnerable to rejection, and yet most expressive of an ecological virtue potentially relevant to larger domains of society. One possibility is to promote a passive virtue, a duty to silence, withdrawal and abstention from action when encountering features of nature which evoke not only respect but wonder. (Pihlström) 2000, 25-34) This apparently passive behaviour may be one form of the Aristotelian virtue of contemplation, which is the basis and condition of all other virtues and a necessary frame of mind for understanding duty. (Aristotle 1987, VI, i-iii, X) Contemplation is demanding. It may in fact entail an active participation in natural history. But it can be presented as a virtue immediately eductive of excellence of character.

The motivational impact of such a virtue cannot be underestimated. It may be, as Rolston argues, the most profound experience of the human condition, and "embodies sense of residence on a landscape."(Rolston 2012, 49, 48-52) This can be triggered by an encounter with beauty and the wild, which can put us in our place with no demand save contemplative attunement. To Emerson this experience is the origin of truth. To acknowledge it is both the highest and most natural virtue. "Such is the constitution of all things,... that the primary forms, as the sky, the mountain, the tree, the animal, give us a delight *in and for themselves;* a pleasure arising from outline, color, motion and grouping."(Emerson 1985, 13ff) It educes us gradually to more complete being, through the delight of the simple

perception of natural forms to the intuition of higher elements we can express in "acts of truth or heroism." It culminates in a search for an ultimate order, which we shall never find. But we can glimpse it in beauty, and hence glimpse the universe.

A place of beauty, which is the beauty of almost any place we perceive rightly, is an instance of the universe. Being a resident in such a place is greater than citizenship. Ecological citizenship empowers us to achieve and then to surpass it. Nature tourism may most effectively foster ecological citizenship by declaring the virtue of silence and apparent inactivity in the presence of nature, to let it come forth in a pristine mode, and lead us to more fundamental and primordial being. Nature tourism activities can be exercises in teleological inactivity.

EPILOGUE

> ...The best part of the land is not private property; the landscape is not owned, and the walker enjoys comparative freedom. But possibly the day will come when it will be partitioned off into so-called pleasure-grounds, in which a few will take a narrow and exclusive pleasure only,...and walking over the surface of God's earth shall be construed to mean trespassing on some gentleman's grounds. To enjoy a thing exclusively is commonly to exclude yourself from the true enjoyment of it. Let us improve our opportunities, then, before the evil days come.
>
> Henry Thoreau: "Walking"

When I was a young man I went walking in early June with some comrades, as clueless as I, on the western slopes of the Californian Sierra Nevada. They talked too much, so I pushed on ahead, and when I came to a fork in the trail I took, for reasons now forgotten, the one less travelled by. Afternoon turned to dusk and the trail became smaller and rougher as it went upwards, and at a certain point even I realised I had chosen wrongly and was lost. I was carrying some water and all of the cooking implements. I sat down by the trail, made a small fire, not knowing of the strict prohibition on open fires in the area, and waited for dawn so that I might retrace my way and rejoin my party. The night was mild and I was too ignorant to be frightened. I heard from time to time some rustling nearby, but only later I learned that brown and grizzly bears inhabit the region. In the morning I returned to the fork and went on some distance before I reached my comrades waiting for me, hungry because they had not been able to prepare food. I endured their incessant noise for the rest of the hike.

Some experience of and education in nature tourism would have been useful. I would not have gone ahead alone, but asked them to be quieter. I would have known something of the mountains' natural history, when and why not to make a fire, and how to fend for myself better than just sitting by the trailside. I would have known that the weather in early summer is unpredictable, and not been unequipped for a storm, which did not break. I would have regarded more the spectacular landscape and guarded more against landslides above or underneath the trail. I would have had more suitable shoes. I would not so nonchalantly have got myself into that situation, but I would have appreciated it

more, and learned more from it. I do not recall that I learned anything. In retrospect however the event has stayed with me and not to my disadvantage. Belatedly I glimpsed something of wisdom, an appreciation of the contribution of science to our understanding with an adherence to the prudence of mastering practicalities in unexpected circumstances. (Aristotle, 1987, VI, iv-vii) I intuited that virtue can be found in confronting nature which takes little account of me, yet whose good reflects and augments my own.

But many years have had to pass before I have realised, and then only superficially, that the intensification of being through wisdom does not abide either complacency or certainty, but requires commitment to an ethically sustainable communality which indicates what virtuous purpose in living might be without compelling or controlling it. (Condit, 2011, 239-278) Merely to proclaim our individuality on the terms now allotted to us is neither virtuous nor dutiful, but trivial. We must seek a more complete individuality immersed in ecology and open to whatever glimpses of wisdom nature might reveal. Such is the pursuit of character. "Character," observes Emerson, "is nature in the highest form.... This masterpiece is best where no hands but nature's have been laid on it."(Emerson 1950, 374, 365-380) It does not flourish in frivolity, but in the contemplation of why and how to act. It entails purpose beyond ourselves, and greater than conventional trivialities. We encounter many obstacles to character, perhaps because we are too estranged from nature, even in places we love.

Nature tourism can clear away some of the obstacles, and when it does, it is a means of moral progress towards a more inclusive, objective and true view of things. (Nagel, 1986, 185-188 ff) If thereby we comprehend more of the basic principles of ethics, we can comprehend more of the virtues of ecological duty, which do not much restrict us, but greatly empower us. Nature tourism can, even for a brief moment, show us what it is to live well, even when alone at night on a mountain trail.

We must be discreet about this. Ecosophy cannot be taught with formal education, nor can virtue, and duty only in its extrinsic actions, not its reasons. Citizenship, however, can be taught, if care is taken to avoid dogmatism and rigidity. Education for ecological citizenship tends to conservatism, but it is for greater things than our convenience. Nature tourism can be both a means and an occasion for education for ecological citizenship. Perhaps one day, through nature tourism somewhere, I might revisit my night on a Sierra mountain and learn from it some good, right and true things.

REFERENCES:

Ahonen, S. (2006). Vihreän kuluttajan monet kasvot.(The many faces of the green onsumer). In Massa, I & Ahonen, S. (Eds.), *Arkielämän ympäristöpolitiikka (Environmental policy for everyday Life)*. Helsinki: Gaudeamus.

Anker, P. (1998). On ultimate norms in ecosophy T *The Trumpeter*. 15(1), http://athabascau.ca

Aristotle. (1986). *The politics*. Penguin Books.

Aristotle. (1987). *Ethics*. Penguin Books.

Attfield, R. (1983). Western traditions and environmental ethics. In Elliot R. & Gare, A. (Eds.), *Environmental philosophy*. London, UK: Pennsylvania State University Press.

Attfield, R. (1991). *The ethics of environmental concern*. London, UK: The University of Georgia Press.

Attfield, R. (2003). *Environmental ethics*. Cambridge, UK: Polity Press.

Barry, J. (1996). Sustainability, political judgment and citizenship. In Doherty, B. & de Geus, M. (Eds.), *Democracy and green political thought*. London, UK: Routledge.

Belshaw, C. (2001). *Environmental philosophy: reason, nature and human concern*. Montreal, Canada: McGill-Queen's University Press.

Bennett, J. (2010). *Vibrant matter: a political ecology of things*. London, UK: Duke University Press.

Björk, P. (2007). Definition paradoxes: from concept to definition. In Higham, J. (Ed.), *Critical issues in ecotourism: understanding a complex tourism phenomenon*. Oxford, UK: Elsevier.

Blackmore, K. (1997). Environmental ethics. *The Trumpeter*. 14(3), http://athabascau.ca

Bonnett, M. (2002). Sustainability as a frame of mind and how to develop it. *The Trumpeter*. 18(1), http://athabascau.ca

Bookchin, M. (1982). *The ecology of freedom*. Palo Alto, California: Cheshire Books.

Bookchin, M. (1986). *Toward an ecological society*. Montreal, Canada: Black Rose Books.

Bookchin, M. (1990). *The philosophy of social ecology*. Montreal, Canada: Black Rose Books.

Bookchin, M. (1995). *Re-enchanting humanity*. London, UK: Cassell.

Bookchin, M. (2002). The communalist project. *Communalism: International Journal for a Rational Society*. 2(Nov) http/www.communalism.org/Archive/2/tcp.print.html

Booth, K. (2008). Holism with a hole? exploring deep ecology within the built environment. *The Trumpeter*. 24(1), http://athabascau.ca

Borg, P. (1997). Kestävä kehitys – kestävyys matkailussa? (Sustainable development – sustainability in tourism?. In Borg, P. & Condit, S. (Eds.), *Kestävä matkailu (Sustainable tourism)*. Savonlinna: University of Joensuu.

Boston, T. (1997). Situating a subjective project: A radical ecologist's interpretation of wellness. *The Trumpeter*. 14(1), http://athabascau.ca

Bradley, F. H. (1927). *Ethical studies*. Oxford, UK: Oxford University Press.

Buckley, R. (2009). *Ecotourism: principles and practices*. Wallingford, UK: CAB International.

Buckley, R. (2012). Evaluating the net effects of ecotourism on the environment: a framework, first assessment and future research. *Journal of Sustainable Tourism* 20(2). http://www.tandfonline.com/loi.rsus20

Cater, E. (2007). Ecotourism as a western construct. In Higham, J. (Ed.), *Critical issues in ecotourism: understanding a complex tourism phenomenon*. Oxford, UK: Elsevier.

Chaloupka, W. & Cawley, R. M. (1993). The great wild hope: nature, environmentalism and the open secret. In Bennett J. & Chaloupka, W. (Eds.), *In the nature of things*. Minneapolis, Minnesota: University of Minnesota Press.

Christoff, P. (1996). Ecological citizens and ecologically guided democracy. In Doherty, B. & de Geus, M. (Eds.), *Democracy and green political thought*. London, UK: Routledge.

Clark, S.R.L. (1983). Gaia and the forms of life. In Elliot R. & Gare, A. (Eds.), *Environmental philosophy*. London, UK: Pennsylvania State University Press.

Clark, S.R.L. (1987). Abstract morality, concrete cases. In Evans, J. D .G. (Ed.), *Moral philosophy and contemporary problems*. Cambridge, UK: Cambridge University Press.

Coghlan, A. & Buckley, R. (2013). Nature-based tourism. In Holden, A.& Fennell, D. (Eds.), *The Routledge handbook of tourism and the environment*. London: Routledge.

Condit, S. (1987). *Anarchist studies*. Joensuu: University of Joensuu.

Condit, S. (1995). *Luontomatkailun käsite ja normatiiviset tavoitteet (The concept and normative aims of nature tourism)*. Joensuu. University of Joensuun.

Condit, S. (1997). Luontomatkailun ontologia.(The ontology of nature tourism). In Borg, P. & Condit, S. (Eds.), *Kestävä matkailu (Sustainable tourism)*. Savonlinna: University of Joensuu.

Condit, S. (2011). Käytännöllistä millenarismia: 2000-luvun anarkismin normeista. (Practical millenarianism: anarchism in the 21st century). In Ahonen, T., Termonen, M., Vehaluoto, U.(Eds.), *Väärin ajateltua (Wrongly conceived).* Jyväskylä: Kampus kustannus.

Curry, P. (2006). *Ecological ethics*. Cambridge, UK: Polity Press, Cambridge.

Dagger, R. (1997). *Civic virtues: rights, citizenship and republican liberalism*. New York: Oxford University Press.

Dancy, J. (1993). An ethic of prima facie duties. In Singer, P. (Ed.), *A companion to ethics*. Cambridge, Mass: Blackwell.

Davis, N. (1993). Contemporary deontology. In Singer, P. (Ed.), *A companion to ethics*. Cambridge, Mass: Blackwell.

Des Jardins, J. R. (1993). *Environmental ethics*. Belmont, California: Wadsworth.

Devall, B. & Sessions, G. (1985). *Deep ecology*. Salt Lake City, Utah: Gibbs Smith.

Dobson, A. 1998). Ecological citizenship: a disruptive influence? www.vedeghylet.hu/

Drengson, A. (1989). Protecting the environment, protecting ourselves: reflections on the philosophical dimension. In Bradley, R. & Duguid, S. (Eds.), *Environmental ethics*. Burnaby, BC, Canada: Simon Fraser University.

Drengson, A. (2004). The wild way. *The Trumpeter*. 20(1), http://athabascau.ca

Dryzek, J. S. (1995). *The politics of the earth*. Oxford, UK: Oxford University Press.

Emerson, R. W. (1950). Intellect. In Atkinson, B. (Ed.), *The complete essays and other writings of Ralph Waldo Emerson*. New York: The Modern Library.

Emerson, R. W. (1950). Prudence. In Atkinson, B. (Ed.), *The complete essays and other writings of Ralph Waldo Emerson*. New York: The Modern Library.

Emerson, R. W. (1950) Nature. In Atkinson, B. (Ed.), *The complete essays and other writings of Ralph Waldo Emerson*. New York: The Modern Library.

Emerson, R. W. (1950). Character. In Atkinson, B. (Ed.), *The complete essays and other writings of Ralph Waldo Emerson*. New York: The Modern Library.

Emerson, R. W. (1950). Wealth. In Atkinson, B. (Ed.), *The complete essays and other writings of Ralph Waldo Emerson*. New York: The Modern Library.

Emerson, R. W. (1985). *Nature*. In Bode, C. (Ed.), *The portable Emerson*. Penguin Books, 1985

Emerson, R. W. (1985). The American scholar. In Bode, C. (Ed.), *The portable Emerson*. Penguin Books.

Emerson, R. W. (1985). Divinity school address. In Bode, C. (Ed.), *The portable Emerson*. Penguin Books.

Emerson, R. W. (1985). The transcendentalist. In Bode, C. (Ed.), *The portable Emerson*. Penguin Books.

Emerson, R. W. (1985). The fugitive slave law. In Bode, C. (Ed.), *The portable Emerson*. Penguin Books.

Farrelly, T. (2013). Community-based ecotourism as indigenous social entrepreneurship. In Holden, A.& Fennell, D. (Eds.), *The Routledge handbook of tourism and the environment*. London: Routledge.

Fennell, D. (2008) *Ecotourism*. London, UK: Routledge.

Fennell, D. (2013). Ecotourism. In Holden, A.& Fennell, D. (Eds.), *The Routledge handbook of tourism and the environment*. London: Routledge.

Foster, J. (2002). Deep sustainability and the human future. *The Trumpeter*. 18(1) http://athabascau.ca

Grange, J. (1997). *Nature: an environmental cosmology*. New York: State University of New York Press.

Grimwood, B. (2013). Social science ontology of environment: challenges to human exceptionalism. In Holden, A.& Fennell, D. (Eds.), *The Routledge handbook of tourism and the environment*. London: Routledge.

Hall, M. (2013). The natural science ontology of environment. In Holden, A.& Fennell, D. (Eds.), *The Routledge handbook of tourism and the environment*. London: Routledge.

Hardin, G. (1992). The tragedy of the commons. In Markandya, A. & Richardson, J. (Eds.), *Environmental economics*. London, UK: Earthscan.

Hare, R. M. (1989). *Essays on political morality*. Oxford, UK: Clarendon Press.

Hemmi, J. (2005). *Matkailu, ympäristö, luonto, osa 1 & 2.(Tourism, environment, nature, parts 1 & 2)*. Jyväskylä: Gummerus.

Higham, J. & Luck, M. (2007). Ecotourism: pondering the paradoxes. In Higham, J. (Ed.), *Critical issues in ecotourism: understanding a complex tourism phenomenon*. Oxford, UK: Elsevier.

Higham, J. & Lusseau, D. (2007). Defining critical habitats: the spatio-ecological approach to managing tourism-wildlife interactions. In Higham, J. (Ed.), *Critical issues in ecotourism: understanding a complex tourism phenomenon*. Oxford, UK: Elsevier.

Holden, A. (2008). *Environment and tourism*. London, UK: Routledge.

Holland, A. (2001). Sustainability. In Jamieson, D. (Ed.), *A companion to environmental philosophy*. Oxford, UK: Blackwell.

Holton, R. (2007). How is strength of will possible?. In Stroud, S. & Tappolet, C. (Eds.), *Weakness of will and practical irrationality*. Oxford, UK: Clarendon Press.

Honkanen, A. (2004). *Menneisyyden tulevaisuus (The future of the past)*. Savonlinna: Matkailualan Verkostoyluiopisto.

Jamieson, D. (2008). *Ethics and the environment*. Cambridge, UK: Cambridge University Press.

Katz, E. (2000). The big lie: The human restoration of nature. In Throop, W. (Ed.), *Environmental restoration*. Amherst, NY: Humanity Books.

Kheel, M. (1993). From heroic to holistic Ethics. In Gaard, G. (Ed.), *Ecofeminism: women, animals, nature*, Philadelpia, Penn:Temple University Press.

Lemetti, J. & Noponen, N. (2011). Yhteislaidunten ongelma, ihmisluonto ja ensimmäinen poliittinen kysymys. (The problem of the commons, human nature and the first poitical question). In Kyllönen, S. et.al. (Eds.), *Kiista yhteismaista: Garrett Hardin ja selviytymisen politiikka (The dispute about the commons: Garrett Hardin and the politics of survival)*. Tampere: Niin & Näin.

Light, A. (1997). Materialists, ontologists and environmental pragmatists. In Gottlieb, R. S.(Ed.), *The ecological community*. New York: Routledge.

Low, N. & Gleeson, B. (1998). *Justice, nature and society*. London, UK: Routledge.

MacIntosh, D. (2007). Prudence and the Temporal Structure of Practical Reasons. In Stroud, S. & Tappolet, C. (Eds.), *Weakness of will and practical irrationality*. Oxford, UK: Clarendon Press.

MacIntyre, A. (1985). *After virtue: a study in moral theory*. London, UK: Duckworth.

MacIntyre, A. (1999). *Dependent rational animals*. London, UK: Duckworth.

Mason, P. (2013). Zoning, land use and tourism. In Holden, A.& Fennell, D. (Eds.), *The Routledge handbook of tourism and the environment*. London: Routledge.

Marquand, D. (2004). *Decline of the public*. Cambridge, UK: Polity Press.

Melo-Escrihuela, C. (2008). Promoting ecological citizenship: rights, duties and political agency. www.acme-journal.org/vol 7 CM-E

Mesimäki, M. (2006). Ympäristövastuullisen kaupunkilaisen elämäntapavalinat.(Life choices of an environmentally responsible city dweller). In Massa, I & Ahonen, S. (Eds.), *Arkielämän ympäristöpolitiikka (Environmental policy for everyday life)*. Helsinki: Gaudeamus.

Meyer-Abich, K. M. (1993) *Revolution for nature*: Cambridge, UK: The White Horse Press.

Midgely, M. (1995). Duties concerning islands. In Elliot, R. (Ed.), *Environmental ethics*. Oxford, UK: Oxford University Press.

Mitcham, C. (1997). The sustainability question. In Gottlieb, R. S.(Ed.), *The ecological community*. New York: Routledge.

Naess, A. (1992). *Ecology, community and lifestyle*. Cambridge, UK: Cambridge University Press.

Naess, A. (2006). Notes on the methodology of normative Systems. *The Trumpeter*. 22(1), http://athabascau.ca

Nagel, T. (1986). *The view from nowhere*. Oxford, UK: Oxford University Press.

Newsome, D. & Rodger, K. (2013) Wildlife tourism. In Holden, A.& Fennell, D. (Eds.), *The Routledge handbook of tourism and the environment*. London: Routledge.

Norton, B. G. (1987). *Why preserve natural variety?*. Princeton, NJ: Princeton University Press.

Nowaczek, A. M., Moran-Cahusac, D. & Fennell, D. (2007). Against the current: striving for ethical ecotourism. In Higham, J. (Ed.), *Critical issues in ecotourism: understanding a complex tourism phenomenon*. Oxford, UK: Elsevier.

Oelschlager, M. (1991) *The idea of wilderness*. New Haven, Conn: Yale University Press.

Orr, D. W. (1994). *Earth in mind: on education, environment and the human prospect*. Washington DC: Island Press.

Outhwaite, W. (1987). *New philosophies of social science*. London, UK: MacMillan.

Passmore, J. (1995). Attitudes to nature. In Elliot, R. (Ed.), *Environmental ethics*. Oxford, UK: Oxford University Press.

Pettit, P. (2007). Akrasia, collective and individual. In Stroud, S. & Tappolet, C. (Eds.), *Weakness of will and practical irrationality*. Oxford, UK: Clarendon Press.

Pihlström, S. (2000). Luonnon arvo, inhimillinen toiminta ja ihmettely. (Nature's value, human action and wonder). In Haapala, A. & Oksanen, M. (Eds.), *Arvot ja luonnon arvottaminen. (values and valuing nature)*. Helsinki: Gaudeamus.

Plummer, R., Stone-Jovicich, S. & Bohensky, E. (2013) Adaptive co-management: A new frontier for nature-based tourism. In Holden, A.& Fennell, D. (Eds.), *The Routledge handbook of tourism and the environment*. London: Routledge.

Plumwood, V. (1995). Nature, self and gender: feminism, environmental philosophy and the critique of rationalism. In Elliot, R. (Ed.), *Environmental ethics*. Oxford, UK: Oxford University Press.

Ramkissson, H., Weiler, B. & Smith, L. D. G. (2012). Place attachment and pro-environmental behaviour in national parks: the development of a conceptual framework. *Journal of Sustainable Tourism* 20(2) http://www.tandfonline.com/loi.rsus20

Rawls, J. (1973). *A theory of justice*. London, UK: Oxford University Press.

Rawls, J. (1999). *The law of peoples*. Cambridge, UK: Harvard University Press.

Rolston, III, H. (1988). *Environmental ethics: duties to and values in the natural world*. Philadelphia, Penn: Temple University Press.

Rolston, III, H. (1994). *Conserving natural value*. New York: Columbia University Press.

Rolston, III, H. (1995). Duties to endangered species. In Elliot, R. (Ed.), *Environmental Ethics*. Oxford, UK: Oxford University Press.

Rolston, III, H. (2012). *A new environmental ethics*. New York: Routledge.

Rousseau, J-J. (1981). *Reveries of the solitary walker*. Penguin Books.

Saarinen, J. (2013). Tourism in the wild: The limits of tourism in wilderness. In Holden, A. & Fennell,D. (Eds.), *The Routledge handbook of tourism and the environment*. London, UK: Routledge.

Sandler, R. L. (2007). *Character and environment*. New York: Columbia University Press.

Sarkar, S. (2012). *Environmental philosophy: from theory to practice*. Oxford, UK: Wiley-Blackwell.

Seaton, T. (2013). Tourism and romantic myths of nature: the evolution of a discursive relationship. In Holden, A.& Fennell, D. (Eds.), *The Routledge handbook of tourism and the environment*. London: Routledge.

Sepänmaa, Y. (2010). (No title). In Mannonen, A. (Ed.), *Luontosuhde: viisi kertomusta (Relationship to nature: five accounts)*. Kuhmo: Funi.

Scriven, T. (1997). *Wrongness, wisdom and wilderness*. Albany, NY: State University of New York Press.

Shafer-Landau, R. (2005). *Moral realism*. Oxford, UK: Clarendon Press.

Sikorski, W. (1993). Building Wilderness. In Bennett J. & Chaloupka, W. (Eds.), *In the nature of things*. Minneapolis, Minnesota: University of Minnesota Press.

Spinoza, B. (1989). *Ethics*. London, UK: J M Dent & Sons.

Stevanovic, I. L. (2000). *Safeguarding our common future: rethinking sustainable development*. Albany, NY: State University of New York Press.

Suikkanen, P. (1997). Luontomatkailu, ympäristökasvatuksen vaativa savotta. (Nature tourism: a difficult task of environmental education). In Borg, P. & Condit, S. (Eds.), *Kestävä matkailu (Sustainable tourism)*. Savonlinna: University of Joensuu.

Swanton, C. 2005. *Virtue ethics: a pluralistic view*. Oxford, UK: Oxford University Press.

Tappolet, C. (2007). Emotions and the intelligibility of akratic action. In Stroud, S. & Tappolet, C. (Eds.), *Weakness of will and practical irrationality*. Oxford, UK: Clarendon Press.

Taylor, P. W. (1986). *Respect for nature: a theory of environmental ethics*. Princeton, NJ: Princeton University Press.

Teller, D. (2013). The Brundtland report and tourism. In Holden, A.& Fennell, D. (Eds.), *The Routledge handbook of tourism and the environment*. London: Routledge.

Tenenbaum, S. (2007). *Accidie*, Evaluation and motivation. In Stroud, S. & Tappolet, C. (Eds.), *Weakness of will and practical irrationality*. Oxford, UK: Clarendon Press.

Thomashow, M. (1996). *Ecological identity*. Cambridge, Mass: The MIT Press.

Thompson, A. A. (2010). Walk on the wild side; teaching pragmatism, deep ecology and local exploration. *The Trumpeter*. 26(3), http://athabascau.ca

Thoreau, H. D. (1984). *Walden* In Bode, C. (Ed.), *The portable Thoreau*. Penguin Books.

Thoreau, H. D. (1984). Walking. In Bode, C. (Ed.), *The portable Thoreau*. Penguin Books.

Thoreau, H. D. (1983). *The Maine woods*. Princeton, NJ: Princeton University Press.

Todd, C. S. (2013). The importance of the aesthetic. In Holden, A.& Fennell, D. (Eds.), *The Routledge handbook of tourism and the environment*. London: Routledge.

Warren, K. (1999). Care-sensitive ethics and situated universalism. In Low, N. (Ed.),*Global ethics and environment*. London, UK: Routledge.

Wearing, S. & Neil, J. (2009). *Ecotourism: impacts, potentials and possibilities?*. Oxford, UK: Elsevier.

The World Commission of Environment and Development (Brundtland). (1987). *Our common future. Oxford, UK:* Oxford University Press.

Vilkka, L. (1995). *The Varieties of intrinsic value in nature*. Helsinki: Dept. of Philosophy. University of Helsinki.

Ulla Härkönen

Reorientation of teacher education towards sustainability through theory and practice.
Proceedings of the 10th international JTEFS/BBCC conference Sustainable development. Culture. Education.

Teacher education contains different fields of science, subjects, levels, theories and practices. It focuses on caring, teaching and educating persons of all ages. It is linked to society and culture, economics, ecology and environment. Teacher education confronts an international, global and local challenge: it must promote sustainability in life, but it must involve sustainability also in itself. Within the UN Decade of Education for Sustainable Development this book offers international approaches to *sustainability in teacher education*.

UNIVERSITY OF
EASTERN FINLAND