10th INTERNATIONAL JTEFS/BBCC CONFERENCE
SUSTAINABLE DEVELOPMENT. CULTURE. EDUCATION.

REORIENTATION OF TEACHER EDUCATION TOWARDS SUSTAINABILITY THROUGH THEORY AND PRACTICE

**ABSTRACT BOOK
FINLAND**

MAY 22 – 25, 2012 SAVONLINNA
SCHOOL OF APPLIED EDUCATIONAL
SCIENCE AND TEACHER EDUCATION
UNIVERSITY OF EASTERN FINLAND

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Suomen UNESCO-toimikunta
Finlands UNESCO-kommission
Finnish National Commission for UNESCO

United Nations
Educational, Scientific and
Cultural Organization

UNESCO Chair in Reorienting
Teacher Education towards
Sustainability
(Toronto, Canada)

Scientific Committee of the Abstract Book:

Dear colleagues!

We are happy to invite you to participate in the 10th International JTEFS/BBCC Conference "Sustainable Development. Culture. Education." Reorientation of Teacher Education towards Sustainability through Theory and Practice", which will be held in Savonlinna Campus of the University of Eastern Finland, Finland, May 22–25, 2012.

The conference will be an international forum to present and share experiences in the fields of sustainable development, culture and education, with particular focus on teacher education.

The conference is an annual international meeting point for researchers, academics, educational scientists, lecturers, postgraduates and practitioners in education from all related disciplines, subjects and educational levels. It is an excellent opportunity to present research, work and ideas related to teacher education and to reorient towards sustainability.

An abstract book and e-proceedings, both with ISBN, will be produced with all accepted abstracts and papers submitted. The extended deadline for article submission will be until the 3rd of September 2012.

You are welcome!

In the name of the Organizing Committee

Ulla Härkönen
professor
President of JTEFS/BBCC 2012 Conference

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KEYNOTE SPEAKERS

Charles Hopkins
Professor, UNESCO Chair, York University, Toronto, Canada

Building sustainable communities: The role of education, public awareness and training

Education for Sustainable Development (ESD) has made tremendous progress since the beginning of the UN Decade of ESD starting in 2005. This presentation will describe some of the current trends in ESD, which also have implications for teacher education. First, ESD is increasingly being perceived as quality education. Studies show that students who study sustainability issues are more engaged in school socially, academically, and intellectually. Second, we note that ESD pedagogies are co-evolving with the incorporation of sustainability into the curriculum. These pedagogies are student centred and empowering to create a better future. Third, we note that because universities are doing sustainability related project and research in communities the barriers between universities and communities are dissolving. Universities are no long "ivory towers" but are partners in solving community problems and issues. Teacher educators around the world are driving these ESD changes.

Charles Hopkins is currently the UNESCO Chair at York University in Toronto, Canada where he teaches in the Graduate School. His UNESCO work focuses upon the development and coordination of an international network of teacher education institutions from over 50 countries. Collaboratively, they are working upon the reorientation of elementary and secondary teacher education to address sustainable development.

He is co-director of the Sustainability and Education Academy, (SEdA) a nationwide institution located at York University, Toronto, Canada that assists ministries of education, faculties of education, and school districts reorient their school systems to address sustainability.

Hopkins also is a United Nations University (UNU) advisor on Education for Sustainable Development, assisting UNU to develop Regional Centers of Expertise in Education for Sustainable Development (ESD) around the globe and he is a Senior Advisor to the Environment and School Initiatives (ENSI) an international network of senior education leaders.

Patrick Dillon
Professor, Emeritus, University of Exeter, UK

Managerial and educational challenges in working towards an adaptive cultural ecology

Cultural ecology is about the relationships between people and their environments, about how they interact and transform each other. Cultural ecology recognises that nature and culture are inextricably linked, that natural heritage and cultural heritage are mutually dependent.

In this paper I will argue that the modern tendency is to think and behave towards the environment as though it were a separate, detached entity. Present day organiational, managerial and legislative behaviours towards the environment are typically highly generalised ways of doing things. Whereas they may reflect good practice in terms of policy, they are not necessarily compatible with the particularity of the localities to which they are applied. In the past, people had to think and behave with the environment because their well-being depended on it. To think and behave with the environment is to deal with the subtlety of locality, to acknowledge the small differences which make one place different from another, to recognise the creative, immediate possibilities of living 'in the moment'. Living with the environment involves attention to local detail, to historically contingent and customary ways of engaging with the environment, and in so doing provides opportunities to introduce fluidity and adaptability into modern management.

Drawing on wide ranging examples from land use, craft production and rural entrepreneurship, I will illustrate how integrating scientific management with local knowledge; integrating thinking and behaving towards the environment with thinking and behaving with the environment, offers the possibility of sustainable and adaptive cultural ecological management. I will explore the educational and pedagogical implications of working towards an adaptive cultural ecology.

Patrick Dillon is Emeritus Professor in the Graduate School of Education, The University of Exeter, UK, Visiting Professor at the University of Eastern Finland, Adjunct Professor at the University of Helsinki, and Visiting Research Fellow at the PLaCE (Place, Location, Context and Environment) Research Centre, University of the West of England.

Irmeli Halinen

Counsellor of Education, Head of Curriculum Development Unit, The Finnish National Board of Education, Finland

Sustainable development and curriculum reform in Finland

In her presentation, Ms. Halinen examines the forthcoming curriculum reform in Finland, and the opportunities to strengthen the role of education for sustainability in the whole education system. ESD, in the very broad sense, can be seen as the purpose of education. Finnish curriculum system is based on intensive cooperation and continuous interaction between three levels of curriculum: national core curriculum, municipal curriculum and school based curriculum. Shared awareness concerning the goals and the means of the reform is created through the common working process. Finnish teachers have central role in this process, and they also use curriculum as their professional tool. National Core Curricula for Early Years Education, For Pre-Primary and Basic Education and for General Upper Secondary Education will be reformed between 2012- 2016. This creates challenges also for teacher education in Finland.

Ms. Irmeli Halinen works in the Finnish National Board of Education (FNBE) as the Head of the Curriculum Development Unit.FNBE is a state agency in charge of the development of education in Finland, working under the auspices of the Ministry of Education and Culture. Ms. Halinen is also a member of the Finnish National Commission for UNESCO. She is a member of the international Advisory Board for the Sustainability and Education Academy (SEdA), and a member of the Reference Committee of UNESCO General Education Quality Framework project. She has worked as a curriculum expert in China, in Nepal, and in the Caribbean Area, and with Canada, and several European, Arab, Latin American, and African countries.

Detlev Lindau-Bank
Associate Professor, Vechta University, Germany

Anna Maaria Nuutinen
RCE Espoo Sustainable Development Network, Finland

Regional Center of Expertices for the ESD and the role of regional and municipality measures

The RCE is a network of existing formal, non-formal and informal education organisations, mobilised to deliver education for sustainable development (ESD) to local and regional communities. A network of RCEs worldwide will constitute the Global Learning Space for Sustainable Development. RCEs aspire to achieve the goals of the UN Decade of Education for Sustainable Development, by translating its global objectives into the context of the local communities in which they operate.

We want to show how the aims and work of RCEs are consistent with strategic objectives of education and training policies.

Espoo is the first Finnish actor to have been approved to the UNU's RCE network. Activities bring together the three dimensions of sustainability: ecological, economic and socio-cultural. In practice this means increasing the awareness of sustainable development and of sustainable life, protecting natural diversity and creating services and products that foster every day well-being of the people of Espoo.

Detlev Lindau-Bank is Education researcher, social worker and assistant professor at the University of Vechta. He is working on school development, horse-assisted education and education for sustainable development. He especially focuses his research on young people and young adults. He is a cofounder of the RCE Oldenburger Münsterland.

Anna Maaria Nuutinen is Master of Science (Education) and a primary and special school teacher. Currently she is engaged as the RCE Espoo coordinator. Mrs. Nuutinen is a member of the R&D Group for Sustainability in the Department of Teacher Education (University of Helsinki). She is interested in the cumulative collaborative knowledge building and promotion of inquiry-based learning that is directed to transform education and to improve school-community collaboration for SD

Tuomo Jämsä
Adjunct Professor, Emeritus, University of Eastern Finland, Finland

Some basics of education for sustainability from a semiotic point of view

The paper highlights some basic theoretical, in particular, semiotic principles in education for sustainability.The target of education should be the qualitatively rich individual life. It can be called the sustainable life.It will be offered as a working alternative to the biased ideal of the economic growth that dominates the world. In education, we should get all people, from childhood to old age, to understand the present situation of the world and make an independent choice for their lives. As an example of education based on semiotics, I mention the doctrine of auto communication by the Estonian semiotician Juri Lotman.In auto communication, the addresser and the addressee are the same person.Decisive in the communication is the point when the ordinary message suddenly changes into a significant experience.As a target, auto communication might be a fruitful mental tool.The paper aims at the introduction of some semiotic and philosophical educational methods.

Tuomo Jämsä: I have born in Kemi in 1940.I graduated at Ii coeducational school in 1962.To pay for the costs of the studies, I contributed to Helsingin Sanomat, Ylioppilaslehti and Kaleva about literature and worked as a journalist in the cultural section in Kaleva and the chief editor of the cultural magazine Kaltio. Studies of psychology, Latin, literature and Finnish at the University of Helsinki and later, concentrating on language and literature, at the University of Oulu.Teacher of Finnish at the upper secondary schools of Vaala and Kontiolahti, tutor of younger colleagues in teaching Finnish and class teachers at Oulu University and class teachers, likewise, at Joensuu University in Savonlinna. Doctoral thesis about the semantics of the most frequent Finnish verbs in 1986. Visiting professor at Indiana University and at the University Göttingen, adjunct professor of Finnish at Oulu.Articles on semantics and pedagogic problems, and especially on semiotics (a member of a pioneering biosemiotic group). Retired in 2004 but still active in certain missions.

Stephen Condit

PhD, Lecturer, Emeritus, University of Eastern Finland, Finland

Walking towards ecosophy: nature tourism and ecological duty

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 from 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.

Dr Stephen Condit is a retired lecturer of English and Translation Studies in the University of Eastern Finland. His publications, in both English and Finnish, deal with environmental ethics, the philosophy and theory of anarchism and the philosophy of nature tourism. He is active in numerous organizations, concerned with human rights, environmental policy and nature preservation and international development cooperation. For over two decades he has held a variety of political positions for the Greens in Savonlinna and at the national level, including a current post as chair of the Green council group on the municipal council. His recreational interests are walking, rowing and sailing.

Roland Tormey
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Educator competence and sustainable development

Education for Sustainable Development implies a fundamental shift in what a teacher does. This in turn may mean that different skills and abilities are required from teachers today as compared to teachers in previous generations. But what are the skills, competences or abilities that teachers need if we are to deliver on the promise of ESD? The United Nations Economic Commission Strategy on ESD (2005-2015) highlighted the need for appropriate initial training and re-training of educators if the goals of the strategy were to be met. As a result, an international Expert Group was established to advice on educator competences for sustainable development and on policy actions which might support their development. The result, 'Learning for the future: Competences in Education for Sustainable Development', was completed in 2011. Drawing on work on developing social and emotional competence in pre-service teachers, I will look at the implications of 'Learning for the future' for teacher education, focussing on the specific challenges of linking what students learn in teacher education courses with their practice as educators.

Roland Tormey's research and publications have focused on how education and teacher education can contribute to global citizenship and to greater equality in a context of growing diversity. As a Pedagogical Advisor at the École Polytechnique Fédérale de Lausanne (EPFL) he supports the quality of teaching on campus through offering in-depth teaching evaluations and coaching to academic staff; providing training workshops for teachers; supporting projects which are aimed at curriculum reform and at enhancing the quality of teaching and learning on campus and engaging in research on learning and teaching in higher education. He worked in teacher education at secondary and higher education level (2004-2011) at the University of Limerick, where he was Assistant Dean for Research and later Head of the Ireland's largest department of second-level teacher education. He also worked in primary teacher education at Mary Immaculate College, Limerick (1996-2004). He has also worked as an Education Officer with the Irish National Council for Curriculum and Assessment (NCCA) in the areas of Intercultural Education and Social
and Political Education and where he was centrally involved in the development of the award winning guidelines, Intercultural Education in the Primary School. In addition to researching in Ireland Roland Tormey has been involved in educational research in Rwanda, Zambia and Uganda.

In 2007 his popular book on Gaelic Football (Summertime Blues) was nominated for the William Hill Irish Sports Book of the Year.Roland Tormey has represented the Government of Ireland on the United Nations Economic Commission for Europe (UNECE) Steering Committee and Task Force on the Decade of Education for Sustainable Development and was co-chair of the UNECE Expert Group on Competences in ESD from 2009 to 2011.

Section 1
SUSTAINABLE EARLY CHILDHOOD EDUCATION (ECE) AND PRESCHOOL EDUCATION

Paper presentations

Passion and professionalism of a teacher of classes I-III

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In a modern society a student is an important element of an education system. His/her harmonious development is directed by parents and teachers. Teacher is a great authority and individual support for a student.

The purpose of this topic is to present the teacher as a qualified person, professional, flexible and original, as a partner and a friend of the child. A teacher should have a certain attitude, unspoiled personality, competence and creativity. Article tries to answer the following questions: How do teachers develop their workshop? How do the teachers express enthusiasm for working with children? Why passion is so important? The importance of passion, understood as a pleasure, joy and enthusiasm in work, is underlined. Passion and professionalism in the teaching profession is the inner spark that shapes its own personality and helps to build authority. A professional teacher accepts the child with a passion as it is and it stimulates child's development.

Key words: teacher, passion, professionalism, abilities, personality.

Children as actors in a kindergarten

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The theoretical background of this study lies on the Systemic Model of Early Childhood Education, developed by Härkönen (2009). It means an aspiration to parse the phenomenon and the related data to form a comprehensive understanding about the life in kindergarten. The research will be phenomenological hermeneutic by its nature. The study seeks to examine children's experiences and how are experiences reflected in the thoughts of adults. Are the children listened to and do their thoughts on the day care shape planning and organization? What kind of actors children are in a kindergarten?

The research data consists of:
- Interviews with 6-year-old children (1 and 2) and with adults (3)
- Short stories by five-year-old children (4)
- Curriculums and annual reports of day-care units (5).

The data is analyzed by using the content analysis method. The research aim is to produce new information for developing early childhood education and to support children's partnership and interaction between adults and children. Through that the research will promote sustainable education and the democratic process in a future society.

Key words: kindergarten, listening to children, children's agency, participation, curriculum

Operations of teachers in the range of forming competence in the mathematical language for children

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In this article relying on competence of teacher of mathematics, I will concentrate my attention on the language of the „queen of science". Just as each language, mathematics distinguishes its own alphabet. Why has this formal hard language emerged? It is possible to detect an answer to this question in natural requirements of communities, how members have perceived requirements of communication, need for exchange of views and inferring. What distinguishes language of mathematics from natural languages it the fact, that it uses numbers and symbols, to create abstract contents. Manipulation of signs and symbols simultaneously makes it possible to operate mathematical notions. However, one of the elements connecting language of mathematics with other languages is the fact, that it has its own compound alphabet 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 and names of flat, geometrical and three-dimensional figures. Many specialists ask the same question, how to teach children to understand this compound alphabet? Analyzing literature of this object many educators have rejected typical one-valued verbalism, in favor of fun and games.

Key words: mathematic, language, symbol, alphabet, competence

The investigation of primary students' science anxiety in terms of various variables

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The purpose of this research is to examine whether primary students' science anxiety differ in frames of different variables or not. Survey model is employed in this study. The sample of the study consists of 397 (female = 192, male = 205) students from different grade level (6th grade = 142, 7th grade = 136, 8th grade = 119) in primary school in Turkey. To find out students' science anxiety, "Science Anxiety Scale" which was developed by Güzeller and Doğru (2011) was used. The analysis of the obtained data was achieved by using independent samples t- test and the one-way variance analysis (ANOVA). The result of the study shows that, students' science anxiety do not differ according to gender, go to private teaching institution or not, grade level, and marital status their parents. However, students' science anxiety differs according to their pre-school education. Students who did not have pre-school education had more anxiety towards science than those students who did have pre-school education.

Key words: Science anxiety, primary education

Conception of the prime times of the day in the Finnish ECE curriculums

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The aim of this presentation is to highlight the explanations to the first research question of my PhD thesis, which focuses on early childhood education science, especially on the concept of the prime times of the day in the early childhood education pedagogy. This study follows the features of Härkönen´s (2010) Pedagogical systems theory, where the concept of prime times consists one part of the educational systems and, at the same time, is linked in systemic way with the whole systems. When focusing an improving the conception of prime times, at the same time, the aim is also to reach for understanding children's sustainable human development.

First of this study´s four research questions is as follows: What is the meaning of the concept of prime times when it is analyzed from early childhood education literature? Answers to this question are searched from the Finnish early childhood education and pre-school curriculums (1973-2010). The data has been analyzed by using qualitative methods, especially content analysis and by ATLAS-ti software. Until now 35 different categories are found to chart the diversity of the concept of prime times. The process is under research work.

Key words: prime times, early childhood education, pedagogical systems theory, content analysis

How does a child help itself to learn to write and read with a computer when starting school

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Children start to understand the significance of reading in pre-school. The nature and form of what children can choose to read has changed radically, partly as a consequence of rapid technological advances. The research questions are: 1) how does a child direct its own learning when it comes to writing and reading with a computer? , 2) how can one support this learning from pre-school to school and 3) how will a child learn in future? The research was conducted by means of an e-questionnaire, and the data was analysed by statistical methods. Seventy three pre-school-, primary school- and student teachers answered. According to respondents (67.6 %) a child learns through the computer to see the connection between the letter what she/he knows and makes. A child enjoys writing with a computer (80.3%), but it is not important that a child writes with a computer every day. A child should learn to write both by hands and with computer. Computers will not replace book (85.9%) in the future. In real life our environment is full of technology, and children will use computers in at sustainable future. In this study, the respondents were aware of this thing, but they will not learn to operate computers themselves. The result is parallel with previous studies.

Key words: reading, writing, computer, pre-school, primary school and the future

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

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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 between ecology, economy, social and cultural processes in sustainable development. 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: project work, motivation, educational process, primary school, sustainable development

Growing up wild: environmental education for early childhood

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A growing body of research indicates that young children in the early childhood years learn primarily through their senses and from direct experience. They develop an understanding about the world through play, exploration, and creative activities, and by watching and imitating adults and other children. This session will introduce a new USA environmental education book for young children called Growing Up WILD. The large format book promotes teacher education with 27 developmentally appropriate activities. The guide presents a wide range of options for a variety of teaching strategies - small or whole group, centers, individual and pair work, and teachable moments. Growing Up WILD gives educators the flexibility to modify activities to meet the needs of children's different age levels and developmental stages. Activities also include opportunities for learning through play, particularly in the "Take Me Outside" and "Centers & Extensions" which includes healthy snack sand songs. All the activities interweave content areas—literacy, math, science, and the arts—and involve social, emotional, physical, language, and cognitive domains. During this interactive workshop you will take part in activities such as "Oh Deer", " Spider We Wonders" and "Seed Need." Further information can be found at http://www.projectwild.org/GrowingUpWILD.htm.

Key words: early childhood, environment, professional development

An alternative journey into forest kindergartens and the Reggio Emilia approach

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The purpose of this article is to present a description and analysis of my experiences in the field of early childhood education. A journey which begins 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 at these kindergartens shall be described and their meaning analyzed in the context of innovations in early childhood pedagogy.

I will highlight some of my working experiences in a kindergarten called Päiväkoti Sotkankoto in Helsinki, which operates according to the pedagogical principles of "at home in natural surroundings". A project called "Treasure of Friendship" that was initiated due to a case of bullying among a group of 5-7 year olds shall be presented. Other themes that will 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.

Key words: forest kindergarten, outdoor education, reggio emilia approach, alternative education, early childhood education

Teacher-principal -parent partnership supporting children's learning and sustainable development in preschool child care institutions

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Teachers must take time to know every child, to understand the way in which they learn best. When a partnership is formed between teacher and the family, the connection between home and school has been strengthened, assuring that children receive consistent messages about sustainable education. Parents should be given opportunities to learn about their children's day at pre-school. They should be involved in frequent informal conversations, invitations to participate in institution`s life and help to build the partnership.

The aim of the study is to find out how does cooperation between parents, teachers and principals support child's learning and how is communication between these groups organized.

Methods. 465 teachers, 396 parents and 167 leaders were questioned; 5-point Likert-type questionnaires were used.

Results. Cooperation with parents supports child's development, supports the smooth transition to school. Parents are involved in the organization of the learning process, developmental conversations and support child's individual development in the teaching process. Similarities and differences between evaluations of parents, teachers and leaders are discussed. All parties evaluate highly parents meetings, events and every day communication with each other.

Key words: Principal, teacher, parent, partnership, involvement in learning process

Environment factors in personality value orientation development

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Daugavpils University, Latvia

The problem is related to essential differences between the publicly desirable and actual value orientation of basic school learners.

The aim of the research is to assess environment and other factors in childhood that affect personality value orientation.

The research comprises analysis of research literature in psychology and education concerning personality value orientation development; it also singles out factors of value orientation in life-stories of self-ascertained personalities.

The practical part of the research is produced by the method of phenomenological analysis. The article analyzes intentionally selected in-depth interviews with personalities that are well-known in Latvian society. The selection includes interviews with representatives of various professions: artists, scientists, culture and public figures who have reached self-expression and ascertainment in the chosen professions and generally in life.

The present research and the analysis of research literature prove that personality value orientation is formed in early childhood. Significant factors determining the value orientation of basic school learners were brought out: the environment around the child in childhood and character traits of the child. Respecting both of these factors may be important when dealing with the problem of value orientation of school learners.

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

Pedagogical systems theory as a cornerstone of sustainable early childhood and pre-school education

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This paper will describe the background and the emergence of the pedagogical systems theory in early childhood and pre-school education as well as its focal concepts and new insights as the results of language analyses. The holistic and systemic nature of the theory will be highlighted, and the paper will aim to show (1) how these features help to understand the multiple dimensions of early education in relation to the grassroots of education; (2) how these features enhance the processes of learning, socialisation and cultural development in occupational education, and (3) how integration of the pedagogical systems theory in education at large will save time and effort, as the theoretical confusion, the need for relearning, lack of motivation and low learning results will be avoided. It is theoretically justified to claim that the pedagogical systems theory can meet the challenges of sustainable development in societal, cultural, ecological as well as economical spheres of life.

Key words: pedagogical systems theory, early childhood education, pre-school education, content analysis, sustainable education

Section 2
TOWARDS SYSTEMIC AND INTEGRATIVE RESEARCH METHODOLOGY IN ESD STUDIES

Paper presentations

Education for Sustainable development research from the researchers' point of view

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Objective. The study intends to reveal the connections between the themes obtained from the open answers of ESD researchers about ideal ESD research and the four dimensions of the model of research orientations in regard to environmental change detected by the quantitative questionnaire.

Design and methods. The 32-item questionnaire and open-ended survey were administered for the researchers (N=66) from 19 countries. Triangulation in the context of concurrent mixed methods design permitted the creation of a composite model of ESD research from the researchers' point of view.

Results. The researchers with participative and theoretical orientations consider research as a tool for cultural and environmental changes. Qualitatively oriented researchers see themselves as part of cultural evolution while often they are more interested in understanding than participation. Quantitative orientation seems to be the most detached from environmental change.

Conclusions. The suggested model helps researchers to position themselves in relation to environmental change from participative, theoretic, qualitative and quantitative points of view.

Key words: researcher, research methods, education for sustainable development, quantitative research, qualitative research.

Developing a research methodology towards systemic study

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

Key words: research methodology, educational research, conceptual models, structural equation models, research on learning and instruction

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

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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 factor analyses showed that the hypothesized 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 as 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, Factor analysis, Finnish

Paper presentation and poster

Search activity and education

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A concept of Search Activity can be used for forecasting educational difficulties and for optimization of education. The search activity concept (V. Rotenberg) provides a classification of behavior which distinguishes search activity, stereotyped behavior, panic and renunciation of search. The study used a projective technique of Behavioral Attitudes and Search Evaluation. Investigation of school and college students showed the dynamics of the age and sex differences in search activity. Recommendations in developing individual educational project planning taking into account personal behavioral settings are given on the basis of analysis of theoretical sources and experimental works. Requirements for the organization of education supporting development of a search activity and decreasing a setting of renunciation of search are determined.

Key words: search activity, individual education project planning, renunciation of search, learned helplessness, developing education

Section 3
PEDAGOGY FOR SUSTAINABLE FUTURE: MUSEUMS, FORESTS AND CULTURAL ENVIRONMENTS AS PLATFORMS FOR 21ST CENTURY LEARNING

Paper presentations

Enhancing participation of secondary schools in informal educational programmes offered in museums in Kenya for sustainable future: A case study of Fort Jesus museum, Mombasa County

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The study investigated participation of secondary schools in informal educational programmes offered in museums in Kenya. The objectives helped to answer research questions on its relevance; contribution to socio-cultural concepts of students and strategies for improvement. Utilizing survey design, qualitative and quantitative approaches, questionnaires, interviews and documents; simple random and purposive procedures were used to select 27 schools, 270 students and 135 teachers. Results indicate that: informal educational programmes offered in museums should be linked with the national curriculum because they supplement the formal classroom teaching and learning in secondary schools. Also they contribute to socio-cultural concepts of students and strategies on marketing the programmes and reduction of entry fee charges by museums could enhance participation of schools. The study concludes that linked with the national curriculum informal educational programmes offered in museums could be used as platform for 21st century which supplements formal teaching and learning processes in schools for sustainable future.

Key words: Informal, education, museums, programmes, development

Pedagogy towards sustainable future

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Design-oriented pedagogy is based on collaborative working with knowledge that is bound with local, real-life objects mediating global phenomena. In this study, the model was implemented in eight different European countries in the 'Case Forest – pedagogic towards sustainable development' project.

The research interest was to determine how participants of the project (N = 238) experience the pedagogy, evaluate its usability and future. The main source of data is the country reports from each country, transcripts from the oral presentations and collaborative discussions.

Qualitative analysis of the reports and presentations indicate that the teachers found current school practices and traditional models of teaching problematic for the implementation of the pedagogy. However, many of the project participants also saw the model as one way to break the epistemic boundaries of school learning, engage students to develop interest with real-world phenomena and taking collective ownership over their own learning.

Key words: pedagogical model, design-oriented pedagogy, learning by collaborative designing, learning object, project-based learning

Towards sustainable learning: co-developed processes and engagement in designing and constructing the learning objects of nature and cultural environment

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The aim of this presentation is to describe one design-experiment as a part of the larger design-based research project. It focuses on developing design-oriented pedagogy that connects learning in formal, non-formal and informal settings. The Activity theory constitutes the framework of this experiment, where the procedural model for learning object design was presented to 70 students in teacher education. Guided by this model, teacher students in small groups constructed 21 digital representations of the real objects of phenomena in questions around the natural trail. Qualitative and quantitative data on the validation of the procedural model suggest that the model allows to make a different kind of creative learning objects. The open-ended learning task had challenged the students to create and increase collective ideas without ready-made templates and instruction. The engagement of small groups varied significantly, which can be explained by the learning activity that was different than usually in universities as well as by the differences between students' thinking about collective ownership. By reorienting and high lightening the discussion towards authentic learning environment, practices, outcomes, and expertise of the pedagogy, would make learning more sustainable.

Key words: Design-oriented pedagogy; learning object; engagement; learning environment; mixed methods

Lessons on city and active citizenship in the web and outdoors

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The presentation introduces a practical work under development; a flexibly applicable package of web-based learning materials. It covers themes of an urban environment and encourages students to take over a city and its various places. NIC (Near in the City) is an application of a progressive inquiry model. It will be linked with two web-based learning environments including an interactive map and social media tools. NIC provides learning material of current phenomena, e.g. multiculturalism or consumption, for students' own research projects. Relating to them, NIC gives also understanding of scales reaching from students own body to a global level. Themes related to various city places, such as suburban area or street, are presented. NIC contains also descriptions of methods, which guide students to make field trips and try out research methods and participatory practices. There are also instructions to produce project presentations. An understanding of a local environment strengthens students' place identity, which is a premise for an active citizenship in an urban environment. The presentation introduces a practical work under development; a flexibly applicable package of web-based learning materials. It covers themes of an urban environment and encourages students to take over a city and its various places. NIC (Near in the City) is an application of a progressive inquiry model. It will be linked with two web-based learning environments including an interactive map and social media tools. NIC provides learning material of current phenomena, e.g. multiculturalism or consumption, for students' own research projects. Relating to them, NIC gives also understanding of scales reaching from students own body to a global level. Themes related to various city places, such as suburban area or street, are presented. NIC contains also descriptions of methods, which guide students to make field trips and try out research methods and participatory practices. There are also instructions to produce project presentations.
An understanding of a local environment strengthens students' place identity, which is a premise for an active citizenship in an urban environment.

Key words: urban environment, field trip, e-learning, active citizenship, place identity

Paper presentations and posters

Forest as a learning environment

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In the teacher education of the University of Eastern Finland new learning environments and pedagogical methods are targeted multidisciplinary in order to solve the challenges education has confronted last years. There have been changes in the very nature of the criteria of skills needed in the future. The main focus on learning should be in generic skills: skills, qualities, knowledge, and traits which people should possess to succeed in the future.

The aim of the presentation is to depict practices and pedagogical models constructed in Forest as a learning environment projects. In these projects, forest Museum, Research park, Forest expertise and forests as a context are working as a learning environment. As an outcome of these projects Forest experts, forest research and Forest museum LUSTO are in intense co-operation with teacher education.

Existing natural and constructed infrastructure at Punkaharju together with wide range of rural knowledge related to forest composes a rich resource for pedagogical purposes. Forest experts can illustrate the social, economical and ecological meanings of forests and their changes during the decades and centuries. And correspondingly, Savonlinna campus offers pedagogical expertise to construct pedagogical models to teach forest related issues.

Key words: learning environment, forest, teacher education, shared expertice, pedagogical models

Bringing education for sustainable development into Swiss teacher education institutions

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The project is a nationwide undertaking in Switzerland supported by the Swiss Conference of Rectors of Universities of Teacher Education (Cohep). It aims to integrate ESD into teacher education in all Swiss teacher education institutions. The project focuses on three main aspects. First a survey took stock of current activities concerning ESD in Swiss teacher education institutions. Second the didactical bases to teach ESD in teacher education are being authored. Third recommendations how to integrate ESD into teacher education institutions are worked out. The work is supported by a consortium consisting of representatives of the official teacher education institutions for public elementary school. Moreover, the project is part of a national action plan that aims to integrate ESD into public school by integrating it into curriculum, quality management of schools, teacher education, legal basis and by strengthening networks. Results of the project will be the publication of the didactical bases on a website and recommendations for the rectors of the institutions. The presentation of the project outlines one possible way to promote ESD in teacher education.

Key words: teacher education, recommendations, institutional change, didactical bases, networks

Section 4
SUSTAINABLE EDUCATION ISSUES IN SCIENCE EDUCATION

Paper presentations

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

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The paper recounts an experience of an educational action research fragment, 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 nonhuman 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 philosophical literature on environmental ethics by highlighting points of convergence. The paper concludes by suggesting implications for implementation of an ethically concerned teacher education for sustainability.

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

Primary school teacher students' perceptions of environmental education and its effectiveness

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Environmental education (EE) and Sustainable Development Education (SDE) in Finnish comprehensive school is an integrated subject and is one of the cross-curricula themes "Responsibility for the environment, well-being, and a sustainable future". The purpose of this case study was to examine primary school teacher students' (N=42) perceptions towards environmental education (EE) and its effectiveness. The data source included concept maps, written documents and four interviews. Results indicated that most of the primary school teacher students highlighted concepts of recycling and sustainable development. They also wrote that environmental education includes practical knowledge and teaching skills. Environmental education will affect both the individual and society. However, teacher students' confidence in their own content knowledge and skills, limited the effectiveness of environmental education. The findings serve as a basis for discussion on primary school teacher education: content knowledge is also needed as well as opportunities to teach environmental education during teacher training.

Key words: environmental education, education for sustainable development, concept maps, sustainable development education, teacher education

Outdoor education as a tool for recreation in rural village schools

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Outdoor education is a psychological approach for the restoration process which involves the recovery of a worn out inhibitor control mechanism. Environmental settings in which the processing and functioning of information is involuntary must consist of four components: being aware, extent, fascination and compatibility. Children use their favorite places, even school environments, in deciding how to gain different levels of affordances; opportunities for experience. Teachers themselves plan and control the utilization of playgrounds and natural environments which are excellent for outdoor activities as well as environmental education. The aim of this study is to examine the use of rural school environments, recreational and stressful things in school life. The research method in question has an ethnographic design. The data (N=39) was collected by interviewing, observing and taking video clips and photos. It was analyzed through hermeneutic cycles. It has been found that children`s possibility for recreation is better in a small school, natural environment than in a larger town center school. Children tend to use their playground and favorite places in a very imaginative way. Recreation through outdoor education is a very complicated interactive system. The research gives a voice for children to explain their own experiences in different school environments. It describes their recreational opportunities in different school forms and sizes.

Key words: outdoor education, recreation, ethnography, play, environment

Sustainable development and curriculum reform in Finland

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In spring 2012 a profound reform of national core curriculum for general education is in the starting phase. Sustainable development will be emphasized. The reform will focus on comprehensive competences needed in cultural transition towards a more just and sustainable world. When preparing the reform the competences of global citizens became preliminary described. Competence of sustainable lifestyle belongs to these. Sustainable lifestyle is based on wise use of ecosystem services. Social and cultural sustainability skills cover inclusive thinking, life skills and the ability to take personal responsibility. How to steer learners' thinking towards an economically sustainable culture and what could it be? A sustainable lifestyle is about choice, responsibility and action. The sense of empowerment opens up opportunities for and forms part of making a difference. We welcome discussion on these topics!

Key words: curriculum reform, comprehensive competence, competence of sustainable lifestyle, ecosystem service, operational culture of schools

Implementation of ESD in curricula

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Education for Sustainable Development (ESD) is thematically
interdisciplinary and not formally integrated within the school subject curricula of
secondary and vocational schools. ESD is not only environmental education, the
areas of economics (as defined by equitable distribution of resources) and
social/cultural challenges/topics (social justice, lifelong learning, civic
engagement) need to be emphasized.

The main challenge is how to realize a good learning practice and how to steer
such a implementation process in schools.

On the base of concrete example we want to introduce you to two concepts we
link. On one hand we describe a concept of school development processes
concerning the implementation of ESD into the curricula. On the other hand we
give you an insight into some methods and techniques which are essential for a
successful implementation into the daily teaching practice.

Key words: ESD; curricula development; educational practice; school
development

University students' ideas about favorite place in the context of education for sustainable development

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This paper presents one part from a larger research concerning education for sustainable development. University students (N=523) answered a survey where we asked students' opinion about 73 issues concerning four dimensions of sustainable development: sensitivity, knowledge, action and participation. The purpose of the present study was to describe university students' favorite places by the aid of an open-ended question. The favorite place represents sensitivity for environment and it has received a lot of attention in the researches in the fields of environment sciences, psychology and geography. The results in this study indicated that university students' most important favorite place is a social place such as home, own room or childhood home. Also summer cottage was favored in large. Ecological places such as forest or lake were also favored as well as cultural settings. The favorite place gives the opportunity to describe environmental relationship. From the viewpoint of education for sustainable development it is important to discuss and share favorite places with others.

Key words: environmental education, education for sustainable development, favorite place, university students

Case study: what environmental pedagogy I believe in?

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The paper presents an experience from educational action research in teacher education, which was obtained by conducting an investigation with first-year students. The aim of this case study is focused on the process of investigating the integration of personal individual experiences and learning outcomes in personally meaningful frames of references at the end of Environmental Pedagogy course. For strengthening the constructive, reflexive and integrative activity in this process, additional categories were suggested for broadening the content and form of the participants' frames of references. The results were analysed with a focus on: (1) different contexts used by the participants, (2) transition from one context to another during construction of personally meaningful frames of reference and (3) specific contexts and contextualization of content and metacontent choices. These frames were used by the participants for formulation of a substructure of environmental pedagogy in which they believe. The discussion and conclusions outline the characteristic results of the integration process – types of personally meaningful frames of references and the specific contexts and approaches used for contextualising the content and metacontent.

Key words: integration, personal experience, learning outcomes, frames or references, external & internal context, contextualization

Development of sustainability and environmental protection education in the frame

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Education for sustainable development and environmental protection has become a popular task in the past 25 years and it has been associated with the promise of the permanent economic growth that political and economic level as well. The basic need for their implementation evolves the fact that all the economic, social and environmental issues are treated as a whole, in one unity within a systematic and global thinking frame. Therefore it is essential in education to put special emphasis on the linkage of disciplinary way of thinking, to highlight and clarify the questions through integrated methods in education. Recognizing this, the UN declared the decade from 2005-2014 as the decade of education for sustainable development (DESD). The UNOurge and support the educational institutions from kindergarten to universities to teach values, attitudes and different ways of thinking which are necessary to establish sustainable development, this is extremely important in teacher training institutions. Social possibilities of environmental conscious-formation used 14 topics in the frame of our project. Television series about the environment consciousness and sustainability has been made, serving the passive-long term achievement for the whole society connected to the secondary school programmes and university forums. The experiences of the project will be built up on the education of university courses of teachers (Environmental protection and natural conservation, Sustainable development, Pedagogy of ESD).

Key words: Teacher training, sustainability, environmental protection, global thinking

Multidisciplinary dialogue and problem-based learning as a tool to educate super-professionals for sustainable solutions

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Finding sustainable solutions for complex environmental challenges requires novel know-how. According to Albert Einstein: "We cannot solve our problems with the same thinking we used when we created them". Environmental Professionals 2025 is a foresight project studying what kind of know-how and skills are needed in environmental sectors in Finland in 2025. The project identified future profiles of environmental professionals. One of the profiles describes super-professionals with interdisciplinary know-how, system-thinking and ability to apply knowledge into practice. They have deep scientific expertise and excellent collaboration and dialogue skills in order to create collective expertise. In this paper we will discuss how to educate these super-professionals. We will use interdisciplinary Sustainable Development Studies of University of Turku as an example. These studies are based on problem-based projects and discussions in multidisciplinary small-groups. The feedback from teachers and students has been encouraging: collective expertise, multidisciplinary dialogue and applying the knowledge into action can be practiced.

Key words: sustainable development education, environmental professionals, super-professionals, multidiscplinary dialogue, collective expertise

Using an ESD framework for climate change education: applications for teacher education

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Climate change education (CCE) is more than teaching climate science. CCE has environmental, social, economic, ethical, and political dimensions. Depending on geographic location, communities are dealing with flooding, drought, sea level rise, extreme weather events, or changing agricultural conditions as well as accompanying issues of poverty, conflict, displacement, migration and inequity. Climate change education is generally designed for mitigation or adaptation—sometimes both. CCE needs to be locally relevant and culturally appropriate while at the same time be an approach that can be applied by countries around the world. Using an education for sustainable development (ESD) framework for CCE has sped the development of ESD materials and policy.

This paper demonstrated how the Guidelines and Recommendation for Reorienting Teacher Education to Address Sustainability are applicable to CCE. It will also present some CCESD materials available from UNESCO.

Key words: ESD, climate change education, CCESD, teacher education

Latvian Mathematics Teachers' Beliefs about their Profession and Teaching Process Expressed through Metaphors

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Objective. The study aims to examine Latvian mathematics teachers' beliefs about their profession and teaching and their emotional connotation as expressed through metaphors.

Design and methods. Teachers (N=390) were asked to provide the metaphor of a teacher and its explanation. Metaphors were classified using the categories desccribing teachers professional identity-teachers as subject/didactics/pedagogical experts. Also hybrid, contextual and self-referential metaphors were elicited.

Results. The teachers used the self-referential, didactics expert and hybrid metaphors most often. Emotions expressed in metaphors were mainly neutral.

Conclusions. Most of the mathematics teachers have personal associations with this profession, according to them a teacher has to be an expert in many fields but didactics dominates. The results suggest the challenging relationships between the teachers' beliefs and their possible engagement in education informed by the principles of sustainability since the teachers' beliefs about their profession have a strong influence on teaching/learning process at school

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

Sustainable mathematical education for engineering students

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The aim of the study is to find ways how mathematical education for the students of engineering can promote sustainable development. With this purpose a design-based research has been conducted to develop the study modules of mathematics for Environmental Engineering and HVAC Engineering study programs in Mikkeli University of Applied Sciences, Finland. The focus is on developing virtual learning environments, learning materials, computer programs and pedagogical practices, for study modules, as well as theoretical perspectives. The data includes observation notes and reports made by students. One of the reports was a personal journal. The concepts of cybernetics were used to analyse the sustainability of mathematics: to respond to concrete real-world problems concerning the changing environment seems to push mathematics towards emergent programming from the traditional style of tight programming, at the same time emphasising the role of numerical computation and computer. The study module itself can also be interpreted as a cybernetic system being simulated by its environment. Based on the study it is proposed that ways of cooperation between the study modules should be developed. In the development of new curriculum for the Environmental Engineering, the goal is to embed subjects like mathematics more closely inside the study modules of environmental engineering.

Key words: mathematics, engineering , environment, sustainable, development, cybernetics

Blogs as a tool for collaborative identification in teacher education

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This study aims to clarify primary school teacher students' (n=98) thoughts about the use of blogs in the context of biology education which includes field work and collaborative inquiry based approaches. Teacher students conducted a small inquiry about forest ecology and reported the phases of the process. During their field work, each group of teacher students took photographs of plants and linked them to a collaboratively formulated plant blog. Every photograph included the tags: forest type, level of forest, life-form categories as well as the name of species. The inquiry process was scaffolded with the aid of three research questions and tags. This study used both qualitative and quantitative data. The teacher students were asked to fill in an e-questionnaire and they also had a small group discussion which was recorded. The findings showed that teacher students contributed to the ecological understanding of plants and biodiversity. Although there were differences in abilities to use ICT with the aid of blogs and tags, it is possible that teacher students' approach to biology learning created greater motivation and confidence. Photographs and tags give an opportunity for teacher students to form connections between main ecological concepts. For promoting sustainable development, we should aim for more authentic opportunities for environmental learning and collaborative plant identification.

Key words: biology education, blogs, collaborative inquiry, plant identification, tag, teacher education

Teaching renewable energies: the case of the geothermal energy

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The utilization of the geothermal potential for aims of energy production may be an attracting component of the sustainable energy supply. The energy use of the geothermal phenomena will be reviewed, critically evaluated, the special requirements connected with the application of the geothermal energy will be discussed. It will be shown that one cannot expect the development of a power station of considerable size, but the use of geothermal energy for space-heating and for agricultural use may be successful. An estimate will be given for the contribution of geothermal energy to the whole energy need, which may be in the few percentage range. The environmental consequences of the geothermal energy use will be analysed and it will be shown that the use of this quasi-renewable energy source is controversial. ― A didactical method for teaching of the use of geothermal energy will be discussed.

Key words: geothermal energy, environment, teaching sustainability

Posters

Education of environmental- consciousness and sustainable development in Sarkad town and its small region in Hungary

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All of us feel that something does not work well in our educational system.

Sarkad town is a poor area where people do not find jobs. Families are falling behind the society and live from allowance and do odd jobs. The future generation have to be taught to seek the way out by the help of schools.

I have been teaching at Ady Endre- Bay Zoltán High School since 2003. Our school is the only high school in this region and it plays an important role in this task solving. I am considering the idea of cooperation among the schools of the region to introduce to sustainability and environmental-conscious thinking. Our high school would be the centre of this education.

Teachers work out ways to deal with topics of sustainable development and try to follow our students' change of view. By the help of local media, we can get the principles to other generations.

Besides we organized an environmental competition for 14-year-old students and created a team to elaborate the common thinking.

Key words: environmental-conscious thinking, sustainable development, marginal social strata, common thinking

Sustainable development of education in Hungary, with examples, practice and outlook in some EU countries

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The objective of environmental education and training is to promote the development of an environmentally conscious attitude and life style in pupil and student age groups. This is how the growing up age groups can be educated and trained to be able to use this concept and knowledge in their future activities and decisions. The increasing emphasis on environmental and nature conservation issues make it necessary to give more priority than before to subjects and activities on environmental phenomena, processes and correlations. It is important to make it part of the entire system of education, training and vocational training, of the chain of knowledge on environment from the nursery school to the university. Or aims are to study the tasks of environmental training and education can only be implemented successfully if they are integrated into knowledge on sustainable development. In education, the European Community's social sectors, among which are not directly affected by any EU legislative effort. The structure of Member States' education system, governing the operation of this document, the form of financing will remain within a circle of national jurisdiction. As a consequence of environmental education in each country as well as the entire educational system, are very different. The European Community member countries in cooperation with the education sector, however, the common areas of labour and economic base, which requires that kind of harmonization with similar aspirations and goals of such a common parent. Our conclusion is that the education policy has the task to meet the individual's lifelong learning needs. Decision making in the education section responds to the environment, and partly to shape it. The educational leaders in the process of drawing up guidelines for the management of laws, the politicians, ministers, financial constraints, global trends, interest groups, the media operate in the world.

Support opportunities for professional development of the new pedagogue

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Modern society raises the need for competent and creative teachers. Teachers' work is realized in scope of several meta-systems that consist of separate independent subsystems, which are bound by mutual interaction. The complexity of structure and content in education sphere demands high professional level of work. Furthermore, the professional development of pedagogue depends on various objective and subjective factors influencing the pedagogical activities. In the context of society development in Latvia, the promotion of competitiveness among pedagogues is vital in optimizing the education system. The research problem is the management of the new teacher professional adaptation difficulties. The implication of the research problem and social significance is confirmed by common noteworthy contradictions: inconsistencies in the implementation of changes in Latvia's national education policy, decrease in the prestige of teacher profession in society, especially among youth, increase in average age of pedagogues, lack of motivation for young professionals to choose the pedagogical career path. Difficulties of training adaptation abilities and creation of professional identity of new teachers, consequently, affect the performance of pupils. Starting the new pedagogue career productively anticipates targetful activities and their systemic for professional support, in order to satisfy the needs of all parties involved in the education process – teachers, student.

Key words: adaptation, support, new pedagogue, challenges, professional development

Beliefs of mathematics teachers in grades 7-9 about teaching mathematics: the qualitative and quantitative perspectives

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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. The aim of the present research is to make out the approach to learning (traditional, formal, or constructivist) preferred by mathematics teachers in Latvia in their beliefs on efficient teaching 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 within NorBa project that were evaluated according to 5 point Likert scale. For deeper interpretation of the survey results, phenomenological interviews with 3 respondents of the survey have been carried out. It was stated that the beliefs of mathematics teachers about efficient teaching of mathematics are more tended towards constructivism, though in many issues teachers 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 process of learning.

Key words: mathematics, teachers, constructivist, formal, traditional beliefs

Workshop

Research and practice seminar «Declaration of BBCC teachers: what are we thinking about the effectiveness of diagnosis science education?»

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Educators, methodologists and students are invited to take part in the seminar, the seminar is designed for 20-40 participants. To work on the seminar is open to all who are interested in the problem of estimating the effectiveness of student learning and diagnose student readiness of professional.

Main aims of the seminar: join the efforts of professionals for discussing problems of diagnosis and monitoring of effectiveness of educational activities. The seminar is designed for 120-150 minutes, with two short technical breaks (5-10 minutes), which can be used as coffee breaks if needed.

The workshop plans to include a three-part serial. Each part of the workshop will be devoted to their subjects: understanding the theoretical foundations of diagnosis, discussion of problems of modern diagnostic techniques and design of diagnostic systems responding to modern requirements. Formulating a hypothesis of the study and creating the sequence of research steps to solve it, the author used classical works on educational diagnosis. In this regard, it is more convenient to present the course of the seminar is in the form of a "dialogue" between the traditional definitions of classical pedagogy and new requirements to the educational process.

Objectives for the authors of the seminar:

• Describe the most interesting and modern techniques and methods for diagnosing the quality of educational process

• Develop the problem of monitoring the effectiveness of educational process

Key words: Effectiveness of educational activities, workshop on diagnosis

Paper presentations

E-learning interface for educational action research

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The study aims to bridge newest information and communication technologies and action research which has come to be known as a modern inquiry driven learning method and also a learning strategy. To this end, the paper presents a research into the effectiveness of action research as an e-learning method, notably, identifies the basic principles of e-learning environment, explores the importance of constructive supportive dialogue and discusses the creation of the model of interface for educational action research (EAR) in an e-learning environment.

The paper analyses an experience from a Business course implemented in an e-learning environment in Riga Technical University over a two-year period. Statistical analyses of the characteristics of students' activities and self-appraisal are performed. The basic principles and the prototype of interface developed in the course of the study take into consideration pedagogical theory and previous experience of designing e-learning environments.

Thus, the study: (1) discusses the advantages and disadvantages of EAR in an e-learning environment in the context of sustainable education and (2) evaluates the adequacy of the developed interface model to the user's cognitive needs. The proposed methodology suggests new possibilities for creative cooperation in e-learning environment for sustainable ubiquitous education.

A Study of the e-inclusion process in a real-life e-course delivery context

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The study measured the degree to which e-inclusion was achieved in selected e-course subtopics by their practical usage probability. We proposed the model in which practical usage probability was determined by following factors: the degree in which expert was willing and able to share knowledge; the degree in which the students were willing to learn; the learning capacity of the students; the degree in which the organization supported learning development; the degree in which the organization promoted learning. Our purpose was to identify the relations of practical usage probability by applying the following variables: the teacher's support and knowledge; the learners' professional reasons, hobbies and social interests; self-evaluations performed by learners in basic computer, Internet skills; content knowledge before and after the course; easy of e-course navigation; formulation of learning objectives; speed of task performance. Data were collected from a group of five-hundred learner through questionnaires. For those learners who had entered the course with prior knowledge, the results showed that they demonstrated a higher practical usage probability of the course content.

Integration of sustainable information communication technology for effective teaching in public secondary schools in Kenya

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This study investigated integration of sustainable Information and Communication Technology (ICT) for effective teaching in public secondary schools in Kenya. On the basis of the research objectives the study investigated the relationship between effective teaching and learning and: integration of ICT; access of ICT by students; access of computers by students after class; access of computers by teachers and internet facilities in schools. Descriptive survey design, quantitative and qualitative methodology, questionnaires, document analysis and non-participant observation was utilized. A sample of 8 schools, 550 students and 48 teachers was selected using simple and stratified random and purposive sampling. The results indicated inadequate: integration of ICT;   access of ICT by students; access of computers by students after class; access of computers by teachers; internet facilities for effective teaching and learning. The study concludes that sustainable investments in ICT infrastructure translates into better utilization of related technologies which augment access rates for teachers and students with assumed positive teaching and learning impacts.

Key words: Effective, teaching, information, communication, technology

Towards more usable content presentation language for e-learning

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More expressive, 3 dimensional, visual presentation techniques in e-learning could be used as a great tool for sustainable education. For that to succeed, data presentation must not only be simple to comprehend, but also easy to prepare for content providers. This research focuses on observing and assessing the reactions of content providers, as they prepare the data presentation. The results of the observation are later used to offer a better and more intuitive way to achieve the same task.

Key words: Content visualization, 3D, E-learning, Rendering, Presentation

An analysis of the European masters in intercultural and environmental management of schools

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The study is an evaluation of a European Master Course in Intercultural Eco-management. The course was carried out through an online virtual learning environment. The main aim of the course was to improve environmental and intercultural management skills in educators and it addressed students from Italy, Bulgaria, Malta, Portugal, Romania and Turkey.

The study involved the use of mixed methods; Questionnaires were submitted through the online environment to collect quantitative data, and a number of interviews were used to collect qualitative data. An analyses of the virtual learning environment was integrated with the mixed methods to evaluate the context and to compare log in times and test scores nationally and internationally.

The research identifies a number of areas in which the input from the countries and individuals concerned were at a similar level, while it also highlights a number of areas with very different input levels and other discrepancies. Overall, the course was found to be very effective in increasing the awareness of teachers and students towards sustainability, and had a positive overall effect on the students' attitudes and behaviour towards environmental issues.

The study indicates that the course would benefit from increased face to face contact sessions and improved communication channels at both the national and international level. Considering the expertise developed by the students during the course it is suggested that this nucleus of expertise be utilised in a way as to be useful at a regional, national and international level.

Key words: Intercultural eco-management, European Masters, Mixed Methods, Online, Virtual Learning Environment

How ICT changes the cultural ecology of teaching and learning in distance education

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This study is grounded in a cultural ecological research methodology. It reports changes in the teaching and learning ecology when videoconferencing tools, recorded lessons and social media were used in the ISOverstas secondary education network. Teachers' good practices were recorded through story writing and by interviewing representatives from six different kinds of secondary school. The interview data shows that all the school communities had their own 'local' approach to using ICTs. When the new ICT tools were introduced the cultural ecology of the learning community changed from being locally based to networked. Social media played an important role in this transition and this will form the main focus of our presentation.

Key words: ICT, distance education, community, cultural ecology, collaborative learning

'Children as agents for social change' (CASC) - A technology-supported pedagogical model for promoting awareness about issues of social importance

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Social problems exist as a background to most educational setups. Though some text-based learning about these problems may take place in regular education, quality learning about these problems is vital for healthy development of the society. Quality learning for such issues may need knowledge, ability to think critically about the problem and some action towards a possible solution. Such quality learning does not take place in most of the developing countries because of two major problems: lack of number of required teachers and lack of expertise among teachers to deal with such issues. Inadequate education of such issues may lead to maintenance and even aggravation of such problems. Though teachers may lack knowledge or skills about social problems, working-level experts are very good resource to understand social issues and have a lot of knowledge about these problems at local level. This article proposes the hypothesis that a pedagogical framework that combines use of Information and Communication Technologies with constructivist educational practices can be used to promote awareness, higher level thinking and skills learning in relation to social issues among middle and high school children. Children feel more connected to an authentic issue when the issue being discussed comes from their local context, the discussion takes place in their local language by the experts in the problem area and when the learning is aided with multi-media technology to explain complex issues in simpler ways. This framework can be largely independent of the kind of problem to be explained to the children. Achieving these educational objectives can make people (current and future citizens) more responsible in their behavior towards these problems which can lead to a better quality of life in a community.

Section 6
ADULT EDUCATION FOR SUSTAINABLE DEVELOPMENT

Paper presentations

Assignments used to assess student learning related to ecological sustainability

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This paper's objective is to discuss the assignments and assessment rubrics used to teach an online course titled "Issues in Sustainability." The author contends that hands on activities in one's community along with social interaction and sharing experiences on the discussion boards, are among the best ways students learn and adopt behaviors conducive to sustainable living. Using a social constructivist paradigm that emphasizes the importance of context (McMahon 1997), and the situated learning model (Lave and Wenger, 1991), the author addresses existing contradictions among American cultural values, the media, and the notion of sustainability in an urban environment. The author concludes that although the world moves toward a virtual life, fieldwork activities remain a vital, educative tool that advance learning through the senses and promote participatory citizenship. Also, implications for practice arise from this paper along with the author's suggestion that online educators embed grading rubrics in all the assignments and create an environment that promotes mutual appreciation among students about what is valued in assessment and their roles within this process to achieve successful learning outcomes

Key words: student assessment, rubric, sustainability, fieldwork, constructivism, situated learning, American culture, online

Graduates' attitude towards acquirement of necessary pedagogical competencies at university level retraining studies

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The objective of the research: to disclose the availability and sources of graduates' acquired pedagogical competencies. Research methods: analysis of documents and scientific literature; questionnaire for graduates, statistical analysis of data. The sample was 81 graduates. Factor analyze allowed to categorize indicators of teachers' competencies in to the notional blocs: pedagogical knowledge, communicative skills, ability to find and solve the problem, ability to find and use the necessary information, human values, general competencies. The research data on the topic disclosed the majority of graduates were emphasized the study subjects they studied is suitable to teachers job. Further analysis disclosed graduates' main emphasis in retraining studies on the pedagogical knowledge problem finding and solving, ability to find and use the information. A little bit less graduates 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.

Innovative component in research work of doctoral students in the field of social sciences

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Innovative component in research work of a doctoral student in social sciences characterizes several aspects: the aim of research, competences of a doctoral student as a researcher, conditions of acquiring a scientific degree, and in a wider context – social significance of results of the research done.

Question of research: what signs characterize the innovative component of a doctoral student's research in the field of social sciences?

Design and methods: qualitative study design is applied. Doing scientific theory analysis of the innovation phenomenon, as well as the cluster analysis of experts' interview, there are selected and interpreted the signs of innovative component of doctoral student's research in the field of social sciences.

Results: study results characterize the signs of innovative component of doctoral student's research in the field of social sciences; the interpretation of the content of these scientific categories is done.

Conclusions: the innovative component of doctoral students' research in the field of social sciences is of ambivalent nature, which is characterized by two basic factors – innovation and usability.

Key words: doctoral students, research activity, innovative component, social sciences

Needs and expectations: an experience from in-service teacher training program

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The paper presents a part of on-going evaluation research conducted for an environmental education training program for in-service teachers. The program consisted from seven 250-hour long courses organized by Czech environmental education centers in 2010-2011. As the part of the evaluation, the entry-level analysis of participants' knowledge and skills was investigated. The research, consisted of set of tests and seven focus-groups, revealed that participants (N=176) had lack of competencies, especially in areas connected with program designing, and a limited concept of environmental education. They formed a heterogeneous group with a large variety in their expectations from the program and experience from the field. The paper discusses implication of this analysis for the following program and discusses strategies for dealing with such a group.

Key words: teacher training program, evaluation, environmental education, needs analysis

Engaging student teachers in sustainable praxis in Aotearoa, New Zealand

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The whakatauki or traditional proverb " Mai te kore, ki te pō, ki te whaiāo, ki te āo marama" lies at the heart of a conceptual framework that guides teacher education in the early childhood degree programme of Te Tari Puna Ora o Aotearoa/ New Zealand Childcare Association. Students are challenged to become aware of the potential (mai te kore), and the possibilities and uncertainties (ki te pō), as they move into the world of light (ki te whaiāo) towards enlightenment and understanding (ki te āo marama) about their responsibilities as human beings and as teachers of infants, toddlers and young children. This paper draws on the narratives of three teaching staff as they collaborate to transform student teachers' thinking and praxis about sustainability through a bicultural perspective that acknowledges Māori and Western ideologies. It will discuss some experiences that student teachers found to be transformational such as: whakapapa (our connectedness to all things, both living and non living), a mini action research project on the 'rubbish' generated on their class days, a visit to the local waste water treatment plant. The findings suggest that student teachers become articulate and passionate about sustainability through engagement in activities that challenge 'taken-for-granted' everyday practices. As their confidence and competence increases student teachers can realise their potential to make significant curriculum changes that impact on children and families.

Key words: early childhood, teacher education, Māori (indigenous) perspectives, lived experiences, bicultural

Gender equality in public higher education institutions of Ethiopia: problems and prospects

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This article aims at assessing the problems and prospects of gender equality in public higher learning institutions of Ethiopia, particularly in technology and natural science fields. Descriptive survey and analytical research methods were employed in the present study. Subjects of the study consisted of university instructors, gender officers, and 160 university female students. Gender policy documents and guidelines were used as sources of data. To gather the data, questionnaire, interview, and document analysis were employed. The data were analyzed by blending quantitative and qualitative approaches. The findings of the study showed that the prominent factors which make Ethiopian female students show little interest in hard sciences are poor self-concept, inadequate preliminary knowledge and skills in the fields, persistent effects of socio-cultural gender stereotypes, inadequacy of sustainable gender-based strategies at the higher learning institutions, existence of negligible number of female instructors in hard sciences, and lack of favourable learning environment in the current Ethiopian higher education institutions. Suggestions which assist female students join and succeed in hard sciences like their male counterparts are discussed in the paper.

Key words gender equality, higher learning institution, hard science, natural science, prospect

Empirical checking of criteria of the self-directed English acquisition readiness scale in blended e-studies for adults: qualitative research

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Self-directed learning readiness scale – SDLRS is used for general measurement. It does not include subject-matter, technological and collaborative dimensions what 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 integrative model, were collected. The qualitative research aims to check empirically their using by learners and find out additional criteria for the Self-directed English Acquisition Readiness Scale - SDEARS in blended e-studies for adults.

Hypothetically is assumed, that adult learners have accumulated foreign language acquisition experiences and the stories reflecting unknown learning methods could be told.

The qualitative researches are not so long used in researches of SDL, but they are recognized to be appropriate for extending the SDL research map. An object of the qualitative research is the new SDEARS, the subject – additional criteria for the scale.

Narratives of five volunteer participants of the research, written in the form of essays, are contextually analysed in four steps. Results of the qualitative research extent the comprehension of SDL concept and will be used for designing the scale of the quantitative research.

Key words: self-directed learning, the integrative model, perspectives and dimensions of the integrative model, the Self-directed English Acquisition Readiness Scale - SDEARS, criteria of the SDEARS

Learning to a responsible citizenship

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Non-governmental organizations and voluntary work have a remarkable role in activity for the cultural and social sustainability. Also their educational role is important: they offer adults a context to civic participation and an informal environment to develop citizenship skills. In my ongoing research I aim to find, using actors' experiences and literature, what the essential elements are in individual learning process to citizenship activity.

In the paper I present several cases, where voluntary workers tell their learning experiences. Freire's praxis-based learning and theory of transformative social learning give framework for analysis of the interview data. The results indicate that interaction with others and real life situations are essential in engaging to activity for the sustainable future.

Key words: citizenship, cultural sustainability,, informal education, praxis based learning

Poster

Experiences of institutions dealing with gerontological education

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The issue of gerontological education in Latvia becomes more and more topical every year. The number of elderly people in the country is growing continuously. So is the number of people at the retirement age eager for self-education or improvement of their knowledge in different fields of science. What is the reaction of the contemporary Latvian society towards the necessity to deal with issues of gerontological education? Only a few universities of the country run courses for seniors; in most cases paid. There are individual institutions offering courses for elderly people (e.g. computer and ICT courses), as well. A modern society needs to seriously consider the problem of gerontological education. Experiences of other countries can certainly help here.

Aim of the study: analysis of foreign gerontology experiences. Materials and methods: theoretical analysis of literature on social gerontology.

This paper presents an analysis of activities of educational institutions offering various training courses for the elderly people abroad (outside Latvia).

Key words: gerontological education, geragogics, elderly people, senior education, geragogists

Section 7
ARTS, DESIGN AND SKILLS

Paper presentations

Initial period of mastering improvisation: problems and tendencies

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The previous research has proved that during improvisation several specific processes take place simultaneously.

Research aim: to observe the activity of secondary music school pupils at the initial stage of mastering improvisation, to analyze and compare the performance of various informants in improvisation art, to establish whether the density of time has some impact at the initial stage of the process of mastering improvisation.

Research methods: partially structured inclusive observation; 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 analyzed. The best results were achieved under conditions of a lower density of time – when the improviser has 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, density of time, musical dialogue, criteria for evaluating improvisation, observation

School children´s classical music listening experiences

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The aim of the study is to examine how the school children experience classical music. The research method and the philosophical background are phenomenological. The empiric data consists of the third–fourth grade school children´s (N=17) essays and pictures produced in various music listening situations. Phenomenological analysis will be used to get to know both the individual meanings and the shared meaning of listening experiences. Particularly, I am interested in finding out how children perceive, feel and valuate classical music. The results can be used in connecting music education and emotional education.

In spite of our PISA´s access, it is not clearly enough recognized that developing awareness of emotions is also important for one´s successful and happy life. Emotionally powerful, high quality music could be used to arouse the varied and intensive emotions and to support children´s emotional well-being and balanced development.

Key words: classical music, meaning, experience, phenomenology, school child

The multiple aims of arts education support sustainable development

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In this article we focus on multiple aims of arts education through a historical overview. We explore the beginning of art education and the social connections behind it. The suggestion for a resolution in EU parliament 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 like it would be clear to all actors. 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. We see it necessary to develop new theories for art education, and in this article we explore the opportunities for doing it. According to Adorno (2007, 30) the conception of art is hidden in its historically changing constellations which naturally resist being defined. We explore the essence of art education as a part of sustainable life and development.

Key words: Art education, development, philosophy of art aesthetics

Combining stories and craft products in child's activity

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Finnish childhood education stresses art related ways of learning. According to the nationwide basis of early childhood education (2005) learning should take place in child-specific activities and ways of thinking through playing, moving, studying and exploring the different areas of art. The high quality of art related education has a positive effect on child´s well-being, self-esteem and identity development. Our research material consists of anticipatory stories collected by story crafting and characters made by children with craft materials and techniques as well as the character descriptions. The story crafting method is implemented in this study as an anticipatory story based on a fragment of a fictional text. The character is made by the concept of a complete craft, where the maker designs, products and evaluates the whole process. The aim of this study is to examine every child´s individual activity and to categorize the typical features of this activity. The aim is thus to determine an individual child's thinking process during craft process and to test the different approaches in the testing of pre-school age children thinking assessment. From the material of this research it is possible to draw conclusions from the child's literacy and his/hers ability to take advantage of his/hers own production of different kinds of materials in craft process. It seems, that literature and story crafting supports designing craft products.

Key words: story crafting, literature, craft, art related education

Teacher's competences in textile technologies

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Teachers' competences in Latvia are stated by the Standard of Teachers' profession and it is applied to the teachers of all subjects though there are no detailed competences worked out for each teacher in the certain study subject. The aim of the article is to analyze what kind of competences the teachers of Home Economics and Technologies should have in textile technologies. Methods: studies of literature, analysis of documents, interviews, analysis of own pedagogical experience, artefacts. The article reveals pedagogical experience of the author in preparing teachers, the contents of textile in comprehensive school and university. Necessary competences in textile technologies for the teacher are stated as well as their link with the quality demands of textile goods. Problems are identified; ways how to solve them are cleared out while students and their teachers – teaching practice leaders are inquired.

Key words: Textile Technologies, competences in textile technologies, Home Economics and Technologies teacher education, textile quality, content of textile technologies

Dyes and images from the forests:
practical cases of environmental education in craft teacher education

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One of the most important challenges, at the local and global levels, is how to support a lifestyle based on sustainable development. A person's environmental sensitivity and interest in nature, has an effect on how interested he or she is in environmental questions. Craft education is a prerequisite for promoting environmental sensitivity.

In this presentation, we wish to show how, in practice, craft can foster environmental sensitivity and interest in nature. Our aim is to support students in discovering how great variety of natural dyes can be found from the nearest forest or even from their back yard. In consequence they also learn how to dye materials for crafts with natural dyes. Otherwise we understand nature as a great source of inspiration: experience of colors, forms, sounds, sense of touch, even old beliefs based on nature and its creatures. Our presentation will introduce projects, where students have used nature (e.g. forest) as a material and an inspirational source for designing and making crafts. Projects will be through the criteria of meaningful learning.

Key words: environmental education, environmental sensitivity, craft education

Study methods influencing the sustainability of teaching in technology education

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The sustainability of Technology Education is related to traditional understanding of Craft and the methods used to teach it; however, the methods used in the teaching process have been influenced by the innovative changes accompanying the development of technology. One prerequisite for guaranteeing the sustainability is adopting innovated teaching methods in the subject lessons.

The aim of the current presentation is to find answers to the question of which teaching methods guarantee the sustainability of the modern Technology Education and the development of students' personality?

The study is based on questionnaire surveys carried out across Estonia in 2004 and 2011. The current presentation treats the issues related to the teaching methods used in Technology Education. The research results are based on factor analysis and frequency tables.

In both of the surveys great significance was attributed to independent work on the computer and solving problems. It appeared that in 2011 the teacher respondents highly valued research and skillfully supervising students.

The study showed that during the two periods in question the teaching methods used by the teachers of Technology Education in Estonian schools have shifted towards a more constructive approach. This means that a greater focus is on supervising students' activity, applying active teaching methods, and stimulating creativity.

Key words: technology education, teaching process, teaching, sustainability, teaching method

Integrated aesthetic perspective for sustainable development

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In this paper I will argue that the concept of aesthetic learning processes needs to be complemented by processual aspects in order to become a functional activity in learning situations. Considering an aesthetic learning process as a fusion of aesthetic, creative and figurative (cf. gestaltung) aspects thus forming an aesthetic perspective will add activity which is necessary for the process of aesthetic learning. This paper will present aspects from the learners' point of view drawing from a study conducted in the Swedish school subject sloyd in the 9th form of lower secondary school. Methods used in the study include visual ethnography, qualitative interviews and e-mail communication. The empirical material was transformed into narratives of young people's relations to sloyd as an aesthetic activity. The stories tell of distinguishing features of aesthetic, creative and figurative aspects which connect to sustainable development, especially concerning materials.

Key words: Aestetic learning, creativity, figuration, narrative, Sloyd

Innovations in technical university student's education

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Russian education system is in change nowadays. One of the actual problems is creating an innovative approach to education. We represent the results of the author's Program «Psychology of creativity».

Objective: The primary goal is creation of educational program that will help to raise an innovative potential of each student.

Methods: Respondents: students of 1-4 courses; 190 people. The basic methods: test by K. Platonov «Creative abilities» and «Fitorobot» by outher.

Results: Our data confirmed the significance of creativity for students and their creativity attitude. We have identified the following components of creative activity: a creative position, creative expression and creative product. The conducted researches have shown 5 levels of expressiveness of a creative position. This data became the basis of the Program that develops the innovative potential of each student.

Conclusion: Given results could be the key to the development of innovative potential of students.

Key words: psychology of creativity, innovative potential, creative position

Homing and downshifting through crafts

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Critics suggest that contemporary throwaway- and success-based culture and hectic pace of life decreases well-being and meaning of life. Homing and downshifting can be seen as something opposed to these phenomena. The aim of this presentation is to depict the phenomena of homing and downshifting in the perspective of craft making. The presentation is based on an analysis of the written narratives of 46 work-aged textile craft makers (men and women aged 17 to 61). Based on the results, homing and downshifting with craft related activities have increased the participants' well-being. The participants describe that they had learnt to take their own time and privacy with crafting. They have also noticed the importance of family, friendship, and personal fulfillment and development. The aim of homing and downshifting is not just coping at work or at home, but to create a whole new way of life without stress and throwaway-culture of products and relationships. Craft has provided a link between and within generations, serving as gatekeepers to friendships and traditions. It may be concluded that also craft education may help us to promote that kind of sustainable development.

Key words: craft, downshifting, homing, meaning of life, well-being

Emotional aspects of education for sustainable development

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This paper examines how different ways of teaching Education for Sustainable Development affects how students' commitment is handled. Emotional aspects are important for learning, and students' interests are seen as a way to increase motivation. The way in which the complex matters of students' interests and emotions are perceived and handled varies depending on the instructional design. Process drama, whole-class teaching and individual instruction are compared. The three examples show that (1) incautious 'use' of students' emotions is an ethical problem, close to manipulation (2) in relation to climate threat and other alarming environmental problems many children get anxious, and perhaps 'lack of interest' is a psychological defence (3) emotionally-loaded subjects, like ESD, require a continuous exchange between teacher and students in order to contain worries, develop deeper knowledge and help students transform their commitment in ways that are positive and meaningful for them.

Key words: Instructional design, Students' Interests, Emotions, Aesthetics, Teachers role

Art educator in the changing process of the modern society

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Historically and also nowadays issues of art education have been a focus of attention among pedagogues, psychologists, artists, writers, philosophers and representatives of other branches both in Latvia and foreign countries. Establishment of specialised art education institutions, museums, depositories of pieces of art, of diversified art centres, art agencies, to a certain extent, has drawn the society closer to art processes. In the process of sustainable development of understanding art an essential role should be given to the teacher's professional activity. Balanced interaction of artistic and educational culture is one of the most significant approaches in the teacher's work. This type of approach opens up possibilities for promoting personality development as an individual representatives of culture, who in a unique way will involve people into practising cultural traditions for sustainable development. This, in its turn, might manifest itself through forms of personality competences and attitudes: to hold in esteem pieces of art impacted by other cultures, to try to characterise own perception of the world of art, to encourage people from other cultures to spread the most characteristic and unique from their culture into the art space, to focus on the common values in art.

Key words: art, educator, students, education, society

Sustainable craft - Craft teacher students´ conceptions

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The study examines craft teacher students´ perceptions of sustainable development and ethical consumption clothing and textiles. The study focuses to students´ views and their behavior in relation to sustainable clothing and textile design, manufacture and use.

The study also examines how this potential interest of sustainable craft appears in the students' own activities in the future. Study will investigate what kind of ideas the teacher students have related to teaching and how the students intend to take the sustainable craft into account in education.

The study focuses on craft teacher students of The University of Eastern Finland. The study material consists of interviews and essays of students (N = 48), and the survey data collected in spring 2012. Preliminary results indicate that the first-year students emphasize ecology and economy in sustainable development. Senior students´ thoughts on sustainable development are deeper: they also consider the cultural and social perspectives.

Key words: sustainable craft, textile craft teachers, clothing and textile design

The role of cultural heritage and craft education in sustainable teacher education

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The objective of the research was to study student teachers' experiences about the role of craft education in comprehensive school and in teacher education in their respective countries. Special attention was given to the role of cultural heritage as part of sustainable craft education.

The data was collected in an international course in the academic year 2011-2012. The students were to write an essay along the given guidelines. The essays were analyzed by using qualitative analysis methods.

According to the data, the position of craft education varies a lot in different countries. The Finnish teacher students were the only ones with the background of compulsory comprehensive craft education. The role of craft education in generalist teacher education was fairly low in all the countries the students represented. Only the Finnish teacher students had needed to attend a craft education course as part of their studies.

Craft education supports sustainable development in individual, local and global levels. Cultural heritage is an important aspect of craft education and its role in sustainable social and cultural development needs to be developed further.

Key words: Craft education, cultural heritage education, art and craft teacher education, sustainable development education, gender and education

Paper presentation and poster

Students' perceptions about heritage building

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Aim of this study is to describe students' perceptions about heritage building. In addition to this, aim is also to depict the possible changes of their perceptions during the design of the pedagogical model for teaching issues of heritage building to 5th and 6th graders in Finnish elementary school. The aim is also to describe how structurized the students' perceptions are and does the level of structuralization change during the design process. This study is a design-based-study and data will mainly be qualitative. The data will consist about students' essays, in which they depict their perceptions about heritage building before and after the design process. Background information is gathered by using a quantitative survey. The preliminary data is analyzed by using phenomenographical strategy. The structuralization of students' perceptions is presented with a three stage model.

Key words: perceptions, heritage building, structuralization, pedagogical model, phenomenography

<u>**Poster**</u>

Interior Textiles –Identity, Research and Design Challenges

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In my study recent research and design projects concerning interior textiles is introduced and analyzed. I will start with some definitions of interior textiles in where negotiation between function and aesthetics is found. Also the functions connected to textiles in public and home spaces are considered. Considerable research and development has emerged in the area of interior fabrics and textiles since the beginning of the twenty-first century for example in the era on interactive and smart textiles. Sustainability is found as one essential context of research. By introducing and analyzing recent design projects concerning interior textiles, I will conclude with some new standpoints in the relationship between textiles and space. The data of the study is examined by means of content analysis.

Key words: Textile research, textile design, interior textiles, identity, sustainability

Section 8
HOME, HEALTH AND WELL-BEING

Paper presentations

Immigrant Afghan household functions and acculturation into Finnish society

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This study examined the phenomenon through immigrant-Afghan household activities and the degree of integration through acculturation. of The aim this study was to describe immigrant-Afghan household activities, such as child rearing, family meals and living. The researcher was also interested in the interactions between immigrant-Afghans and Finnish Society. The specific aim was to describe the process of acculturation taking place, including the social and cultural changes associated with it. A theoretical framework, arising from the work of Bubolz & Sontag's (1980) Human Ecology-Theory and Berry's (1980) Acculturation Attitudes model, was employed.

A total of 264 immigrant-Afghans representing 12 % of Afghans living in Finland were surveyed. Questionnaire data was collected with an interpreter available on all occasions in nine geographic areas, including the provinces of Uusimaa, Southwest Finland, Pirkanmaa, Southern Savo and Häme. Data was analyzed using the SPSS 17 statistical package for Windows.

In the sphere of household activities, the acculturation process among immigrant-Afghans varied between integration and separation. Separation was indicated by no change or the continuation of activities similar to those found in the culture of origin. This was evident in child rearing, traditional activities and forms of interaction. Integration was represented by a clear change toward activities typical of Finnish culture. This was to some extent seen in food economy and living. Assimilation, however, had not taken place in other spheres of household activities. A significant finding in this study was that 70 % of the respondents wished for more contact with the host society. Also, participation in work-communities was seen to be important by 69% of Afghans, which indicates that most Afghans wish to integrate into Finnish society.

In the Afghan family, mothers continue to carry the responsibility for child rearing and household activities. Upbringing is authoritarian; expecting children to show respect for their parents. Dating between Afghan daughters and boys of a different

religion is prohibited whereas this is less strictly adhered to in the case of sons. 64% of the respondents believe that traditional gender role divisions discriminate against women and girls. This research highlighted the role of religion as an important part of the Afghan daily life. Non-acceptance of mixed religious marriages is deeply rooted in Muslim culture and as such represents a key element in the separation mode of attitudinal acculturation.

Case study on medicine education in Finnish families

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Medicine education can be seen as a co-operation between children, parents, teachers, and health care professionals. The aim of this case study is to find out and describe medicine education in Finnish families. The research approach orientates for Home economics and the theoretical framework is Human Ecology -Theory (Bubolz & Sontag 1980).

Research strategy combines three studies: 1) survey on parents; 2) survey on pupils (4 - and 7-classes) conducted during medicine education intervention 3) interviews made in home and medicine cabinet research.

In this presentation preliminary data on parents' survey is presented (N= 250). Children learn consumption of medicines by observational learning. However, study revealed that parents also discuss with children on medicines. Parents seem to have positive attitude against medicines and they think that medicines are essential for treatment of diseases. However, before starting medication they try also other treatments.

Key words: home, medicine education

Opportunities for healthy eating habits promotions in home economics

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One of the main questions for sustainable development is: "What can I change in my nutrition?" In school, when studying about nutrition, pupils learn about healthy nutrition and their principles in theory and also develop their knowledge and skills in cooking. It is important to find the answer to this question in teenager age, when their eating habits are still developing and strengthening. To find out what opportunities exist to promote healthy eating habits in studying about nutrition, theoretical sources about this problem will be explored, the real situation about teenager eating habits in Latvia based on statistical data will be established. Teachers of Home Economics will be surveyed about their student's knowledge about healthy nutrition and meaning of it in their own individual lives. Based on the results, specific recommendations will be developed to promote healthy eating habits formation and strengthening to teenagers, when studying nutrition in Home Economics.

Key words: Sustainability, healthy nutrition habits, teenagers, school

Seven factors and four cornerstones of sustainable development, health and wellbeing

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The objective of the study is to narrow the gap between theory and practice in mental health work.

By analysing over thousand scientific studies on reasons of mental malaise, mental disorder and negative deviant behavior, by studying and monitoring practical mental health work and by the use of factor analyses, there was formed a 7x4-field.

The first group of categories in the 7x4-field consists of the following factors: 1)types of lonelinesses 2) models 3) stresses and challenges 4) punishments/disappointments 5) losses 6) avoidances/copings and 7) changes in life situations.

The second group of categories consists of the following cornerstones which are oriented towards the aforementioned factors: a)human relations b)bodily functions/physical activity and exercise c)rational actions and behavior d) irrational actions and behavior.

By cross tabulating the aforementioned categories, there are formed 28 cells which can also be used as separate groups. The categories are further divided into about 250 smaller subclasses.

As an outcome, the developed 7x4-field is suited for many kinds of antipating mental health work, in teacher education and scools. It is to be noted that many famous artists, even poets, have probably subconsciously described 7x4-field.

Key words: Preventive mental health, taxonomy, 7x4-field, owerall wiew in education theory and practice,

Poster

How satisfied are you: Home economics teachers' views on current practice in education for sustainable development

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Objective: To assess Home Economics (HE) teachers' satisfaction with current practice in education for sustainable development (ESD) in Finnish schools. Factors affecting the implementation were examined by comparing the views held by satisfied and dissatisfied groups.

Design and methods: An online survey (n=90) was carried out in 2010. Two groups, satisfied (n=56) and dissatisfied (n=34), were formed based upon agreement or disagreement with the statement: "the current school system prepares pupils to deal with sustainable development issues". Open-ended questions were analysed for types and themes, followed by factor analysis; multiple choice ones with cross-tabular analyses to examine the differences between the two groups.

Results: Satisfied teachers emphasized the role of personal knowledge and access to continuous professional development; the dissatisfied ones considered poor timetabling and the current curriculum guidelines, a lack of school-wide policy and of personal knowledge as major inhibitors.

Conclusions: For successful implementation of ESD, teachers will need wider support for their practice.

Key words: sustainability, home economics, teaching, inhibitors, enablers

Section 9
TOURISM RESEARCH – CONNECTIONS ON WELL-BEING, EDUCATION AND SUSTAINABILITY

Paper presentations

The development and evaluation of a tourist guide environmental awareness course

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The study is an evaluation of a new Unit addressed to Tourist Guides entitled – 'The Natural Heritage of the Maltese Islands'. The course was carried out through a face to face teaching environment and in the field with student tour guides.

The study involved the use of a mixed method approach. The qualitative data was supplied through the use of a number of open ended questions, while an extended questionnaire with a number of close ended questions supplied quantitative data. The research also utilized data from a number of fieldwork sessions in which the participants had to develop a thematic project that focuses on producing a guide for tourists on a natural location within the Maltese islands.

The research identifies a number of areas in which the course was very effective while it also highlights a number of areas which require improvement. Overall, the course was found to be effective in increasing the knowledge, awareness and attitudes of the students towards the natural environment of the Maltese Islands.

The study proposes changes to the curriculum and the methodology so as to increase the effectiveness of the course in developing tourist guides which are not only knowledgeable and aware of the local environment but which are also able of positively influencing the knowledge, attitudes and behaviour of tourists towards the environment.

Key words: Tour Guides, Malta, Course development, Environment, Awareness

Walking towards ecosophy: nature tourism and ecological duty

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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 from 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

Paper presentation and poster

The concepts and terms of nature tourism in America and in Finland

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The concepts and terms of nature tourism. A terminology work with a prototype approach.

In this study some basic English and Finnish terms concerning nature tourism, for example, green tourism, adventure tourism, ecotourism, nature tourism, wilderness travel in Canada and Finland were analyzed to clarify terminology in this field. The main purpose of the study was to demonstrate that classical concept theories are empirically inadequate for terminological analysis in an abstract field. Instead of creating a system of concepts, which is the aim of traditional terminology work, the prototypes and their suitability for creating the general picture and mapping the mental structures in an abstract field were studied. In this presentation I will show that the concept content of nature tourism terms can be described in terms of prototype theory. As hypothesized, the Finnish terms were used literally from the English terms, even though the concepts associated with them were quite different, e.g. the nature tourism terms contained a number of different meaning elements, sometimes purist ecological or even religious aspects.

Key words: nature tourism terms, term inventory, prototypicality, prototypes

Section 10
TEACHER EDUCATION FOR INCLUSION

Paper presentations

ICT-supported educational action research in teacher education for sustainability: Interplay of multiple voices in discourse on exclusion

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The paper reports on an action research phase that explores the potential of using google.doc environment to engage future teachers in discursive contemplation of the issue of exclusion during their studies. The methods of discourse analysis and qualitative content analysis were applied to the data generated from the students answering reflexive questions and commenting their peers' views. The findings highlight the teacher's role in both promoting and preventing exclusion in the classroom, which suggests that ways be sought to heighten future teachers' awareness of this issue and a personal commitment to inclusive teaching. The study confirms that google.doc environment can be used to initiate students' discourse on exclusion, especially if clear instructions, sufficient time and consistent tutor's support are provided. The paper also argues that interweaving first-, second- and third-person voices in a multi-vocal action research account paints a richer picture of the conducted inquiry.

Key words: educational action research, voice, discourse, exclusion, teacher education

Coping at school- academic success or/and   sustainable coping in future?

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The purpose of the research was to monitor opinions of students, parents and teachers on aspects of coping at the primary school second level in both Estonian as well as Russian schools.

The research was carried out from 2006 to 2011. The research used a questionnaire, which was administered to 652 students and their parents in grades 4 through 6 at both Estonian and Russian general education schools. In the second part of the research, 30 teachers from the same selection were interviewed.

The result of the research shows that the students, parents and teachers who took part in the research in both Estonian and Russian schools link the aspects of coping with academic success. Additionally, teachers in Estonian schools consider the students' skills of social coping also important. Both the Estonian as well as Russian school teachers consider home and parents the main factors that influence coping skills. According to the teachers, changes in the society have changed common beliefs, attitudes and the way of thinking among the parents and the students, causing difficulties in students' academic as well as social coping. Based on the rapid change of the society, it´s important to reorient teacher education. Social skills, forming the basic skills of learning and using different websites for studying will become crucial in teaching the new generation.

Key words: students, teachers, parents, coping, change in education paradigm

The module preparation to the teacher profession in Poland

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17 January 2012 the Minister of Higher Education in Poland signed a regulation defining the standards of training for the profession.

Its provisions specify:

1) the effects of education on the

- expertise and methodology,

- pedagogical and psychological knowledge, including in the field of education, including preparation for work with pupils with special educational needs,

- preparations for the application of information technology,

- the level of foreign language,

2) the duration of studies and postgraduate studies,

3) the size and organization practices.

In accordance with regulation training for the teaching profession is conducted in the three compulsory modules, including preparation of the merits for teaching, psycho-pedagogical and didactic. This training can be extended with optional modules, including the preparation to teach another subject and a background in special education.

Teacher education in particular is to acquire practical skills needed to work as a teacher; theoretical knowledge to support the acquisition of these skills and provide a scientific synthesis of experience. Thus, the provisions of Regulation increased the role of practical training, in particular in the areas of competence of the care, education, and diagnosis of pupils' individual needs.

Social sciences teachers' views on their experience

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Society faces necessity 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; (2) need for preemptive and personally significant understanding of the knowledge in the sphere of social relations necessary at school. Social conditions, the heterogeneous and complex nature of these processes set the demand for teachers of social sciences to develop the ability to have a deeper understanding of the situation and elaborate their own professional views and sustainable action approach. 107 respondents were interviewed, all of whom hold the qualification of teacher of social sciences.

The aim of the survey: to make out the personal professional experience of social sciences teachers by studying the following: (1) teachers' attitude towards the subject they teach; (2) the model of relations "teacher – learner" in the process of learning; (3) evaluation of teaching and learning; (4) trends of integrating and being integrated in professional action experience.

SPSS program is used in data processing.

Evaluation of the survey results is produced by analyzing the conclusions of the research Linda Reichwein Zientek that offers a different way of acquiring teacher professional qualification emphasizing in it self-efficacy.

In the course of data processing, two-factor structure was gained: Base functionality (F1) and Methodological and communication aptitude (F2). Two-stage cluster analysis produced by means of SPSS made it possible to differentiate between 2 homogeneous clusters. Variable CL (cluster) at the level of statistical tendencies affects the division of dependant variable Base functionality (F1) (Base functionality (F1) of smaller mean value appears in the second cluster, $F = 2.245$, $p = 0.07$).

Variable Pedagogical experience affects statistically significantly the division of variable Base functionality (F1) (Base functionality (F1) of smaller mean value appears in the second cluster, $F = 18.897$, $p < 0.001$).

There is statistically feasible relation between independent variables CL and Pedagogical experience (in the 1st cluster Base functionality (F1) practically does not depend on the experience, while in the 2nd cluster Base functionality (F1) is higher for teachers with the experience of 1-5 years, $F = 3.846$, $p = 0.012$).

Pupils' engagement in research as means of participatory and inclusive experience: the case study from Latvia

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The objective of this study is to explore the possibilities of integration of research as a tool of fostering participative and inclusive practice in schools of Latvia. The study reveals the tensions teachers are facing, as well as highlights challenges of integrating research into practice. Design and methods: This study is based on data gained in five focus group interviews in five regions in Latvia (N = 130). The focus group interviews reveal how individual teachers define inclusive environment and the ways how it can be designed by integrating research 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 inclusive practice, such as setting suitable learning challenges, responding to the diverse needs of pupils, overcoming potential barriers of learning for an individual learner for empowering their voice. The results of the study indicate that the success of inclusion depends, firstly, on teachers' attitudes to its implementation, secondly, upon their competence and experience to deliver this initiative. The research contends that if inclusion is to be established as a core principle, pupils' engagement in research should become an integrative component in the mainstream education.

Key words: pupils' research, inclusive environment, teachers' attitude, diversity, case study, pupils' voice

Inclusion, equality and diversity

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Although there are clear differences in national policies regarding inclusive education, the international debate has not fully considered their impact on implementation of teacher education within different countries. The current study is part of a wider comparative research project that sheds light on how the development of inclusive education looks from a teacher's perspective in different countries including Finland, South Africa, Slovenia, Lithuania, China and England. This paper aims to answer the following four research questions:
(1) Are there any differences between Finnish and South African teachers in their profiles of attitudes towards inclusive education?
(2) Are there any differences between Finnish and South African teachers in their profiles of self-efficacy for inclusive practices?
(3) Does self-efficacy for inclusive practices correlate with attitudes towards inclusive education?
(4) Which type of self-efficacy is the best predictor of attitudes towards inclusive education?
A sample of 319 South African and 822 Finnish primary and secondary education teachers completed a questionnaire containing a scale measuring sentiments, attitudes and concerns on inclusive education as well as a scale measuring teachers' self-efficacy in implementing inclusive practices. The statistical analyses were carried out separately for the two countries and included factor analysis, correlations and regression analysis. A comparative analysis indicated that whereas the overall sentiments towards disabilities were positive in both countries, teachers had many concerns about the consequences of including children with disabilities in their classrooms. While the most positive aspect of self-efficacy among the South African teachers was their self-efficacy in managing behaviour, the Finnish teachers saw this as their weakest point. Self-efficacy, in particular efficacy in collaboration, was clearly related to overall attitudes towards inclusion.
Comparative research that appreciates cultural and contextual diversity can contribute to a more comprehensive understanding of the role of teachers in the implementation of inclusive education. Teacher education programmes face new challenges of contributing towards the closing of the gap between policy formulation and the implementation of inclusive education. Using a comparative framework will enable us to develop an understanding of the complex local conditions in which inclusive education is being implemented and will also enable us to discern regularities and differences across national contexts that could be of benefit to all countries.

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Poster

Primary school teachers`educational values as a prerequisite for the development a sustainable learner

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Teachers` important objective is to shape students`attitudes, values and behavioural norms. The key person in this process is the teacher whose role is to inspire, encourage, challenge and counsel. This article aims to find out about the values dominating in the daily work of primary school teachers. The learning environment is seen as a combination of mental, social and physical environments surrounding learners, in which the learners develop and learn.

Research question: What is the content of educational values manifested in the daily work of primary school teachers?

Method.The study relies on a primary school teachers` survey conducted in Estonia in 2011 in which 357 teachers from different regions of Estonia participated. Depending on their content the statements were divided into five blocks, aggregate variables or summary factors were created.

Results. Values related to teaching and supporting children`s personality development were rated highest, those related to cooperation and learning considerably lower.

Teachers recognise the complex effect of educational process that helps to shape educational values and guarantees sustainable learner in lifelong learning process.

Key words: values, teacher, learning environment, teaching

Section 11
SOCIAL PEDAGOGY AS A DIMENSION OF SUSTAINABLE LIFE

<u>Paper presentations</u>

Social pedagogy contributing to the theoretical framework of education for sustainable development

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How does social pedagogy contribute to the education for sustainable development? Since the great Greek philosophers it has been realized that the cultural and social progress depends decisively on education. This understanding is the starting point of social pedagogical thought. The conception of social pedagogy varies in the midst of diverse moral philosophies, concepts of man and society, political interests and philosophies of science. It gains benefits from social theories dealing with ethical, political and educational issues. Being manifested in different national traditions it is shaped by country-specific social, political, economic and cultural conditions. It is viewed as a theory of citizenship education in general and as a form of special education dealing with people's special social needs. It is evolved as a particular profession and a discipline for various social and educational professions. The complicated concept consists of denominators relevant to the theory of education for sustainable development.

Key words: theory of social pedagogy, education for sustainable development

Legitimation of the theoretical discourse of social pedagogy

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The concept of social pedagogy has established itself as a promising research field, discipline and professional practice in many parts of Europe - notably, in Eastern European countries. It is considered as a unifying concept between education and social work, being the critical opposite to a 'repair and deficit' oriented social work discourse and referring to the emphasis on pro-active, preventive concepts of intervention. This paper argues for a nuanced approach in importing the concept to new national and social contexts - an approach which, alongside with its potential social benefits, would consider the critical aspects of scientific discourse of social pedagogy. On the basis of theoretical discourse of social pedagogy in Zeitschrift für Pädagogik, the leading educational journal in Germany, it will be demonstrated that the concept of social pedagogy needs to be considered as an ambiguous integrity which still should be scientifically legitimated if applied to new contexts.

Key words: social pedagogy, Europe, Germany, theoretical discourse

Eco-social consciousness: a key target to the modern social pedagogy

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How to create a safe and just operating space for humanity? Transitioning towards a sustainable society is a holistic process with shared responsibility. Both individual behavior change and societal change is needed in order to create a sustainable world. Social pedagogy builds on principles of human rights and social justice. This is also in the centre of sustainable development which combines environmental, social and economic development. Our planet is a system of the interdependence between human and non-human realities. Therefore, I argue that expanding of the frames of justice is the main challenge to the human-centered social pedagogical orientation. This highlights the importance of adopting an ecosystem-centered worldview, a planetary life orientation and a holistic well-being paradigm. Eco-social consciousness is a new normal of the responsible citizenship.

Key words: social pedagogy, sustainable development, eco-social consciousness, lifelong learning

Human studies as an innovation of social pedagogy

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When the region of the previous Soviet Union had a chance to study and teach social pedagogy, it happened surprisingly fast. The most problematic issue has been linking socio-pedagogical theory and practice.

In the period of fast changes in the society a danger of social exclusion has increased. It requires from a school systematic activity and preventive work. In general the task had been assigned to teachers, especially to class teachers, who do not have the necessary training, time and power. The school was in need of socio-pedagogical assistance for timely interference.

The present paper is treating the possibility of applying socio-pedagogical theory into practice.

In application of social pedagogy Estonian school has established a new subject domain - Human Studies. Covering all school stages, Human Studies will integrate knowledge and skills in the field of psychology, ethics and health education. The idea of the subject is to provide the students with opportunity to treat and apply knowledge about themselves as a developing personality and about their relations with the community. A teacher of Human Studies is practically and often by qualification a social pedagogue.

Key words: social pedagogue, human studies, social exclusion, Estonian school, innovation

Workshop

Workshop "Social pedagogy as a framework for promoting sustainability in schools"

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Social pedagogy as an educational approach has traditionally been identified within the field of non-formal education. However, there is a growing tendency to question these traditional definitions and to find ways to implement socio-pedagogical praxis in the field of formal education as well. Also, it could be argued that in the context of increasing challenges in the field of (formal) education, social pedagogy represents, with its stress on promoting social growth, equal relations and communality, such an approach that could bring about some necessary new perspectives and tools on promoting sustainability both as a starting point and an objective of education.

The workshop opens up perspectives on social pedagogy as a framework for promoting sustainability in schools. The aim of the workshop is to create discussion on those new possibilities for developing schools that socio-pedagogical thinking could bring about.

Workshop round table consists of five experts in the area of social pedagogy, Professor Inger Kraav, M.Soc.Sci Anne Backman, and Special Pedagogue Tuomas Lallukka as debators, and Ph.D. Elina Nivala, and Ph.D. Sanna Ryynänen as chairs. Elina Nivala's research interests evolve around the questions of citizenship and education for participation and solidarity. Sanna Ryynänen is specialised in critical social pedagogy, especially in its Latin American theorists, and her research themes concern the questions of marginalisation and equality as well as the role of education in fighting against inequality, oppression, and social segregation.

Key Words: Social pedagogy, sustainability in schools, sustainable communities

Section 12
SUSTAINABILITY IN COMMUNITY PRACTICES

<u>Paper presentations</u>

Key skills for the understanding of sustainable development: what do we expect from our students?

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Presented material illustrates intermediate results of a long-term research project No 3.1.2/6023, based on collaboration of professors from Urban Development Department (St.Petersburg State University of Architecture and Civil Engineering) and Architectural modeling studio (St. Petersburg). Our work is dedicated to the development of scientific and theoretical foundations for studying the tools which allow us to diagnose and develop specific skills of students. Further, the material will outline some of the results of questionnaires, interviews and surveys of teachers and students, describe the experimental methods for determining and monitoring the research potential of students in higher education (for students majoring classification of methods of diagnosis of research and creative abilities of in «Urban Development» and «Urban Cadaster») and the studio of additional education (children of 4-7 years). It should be noted that conducted study also aims to optimize the existing educational processes in the sphere of Russian engineering education.

Key words: creative abilities, research potential

School as a broken pair of binoculars. School as described metaphorically in the experiences and desires of students of pedagogic specialties

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Metaphors are viewed as condensed discursive manifestations of experiences. Based on Lakoff and Johson, metaphors are conceptual models that help to understand and explain the surrounding world. At the same time, metaphors model and dictate new ways of experiencing and acting. Thus, metaphors both uncover and hide. To which attributes of the school as experienced and desired by students do the metaphors given by the students refer? Within the period of three years (2008-2011), first year students (215 people in total) were asked as a group work to finish metaphorically the following sentences: „School is like...“ and „School should be like...“. The choice of the metaphor had to be justified. The metaphors were categorized in accordance with the field of experience expressed in them and analyzed by the method of qualitative content analysis. The metaphors used most frequently were metaphors of place, but also metaphors of means, state of being, activity and journey occured. In the school as experienced, the motif of the struggle for survival and for subordination dominated. In the school as desired, the emphasis was on the need for safety, inspiring ideas and harmony.

Key words: metaphors, experienced school, desired school, attributes of the school for sustainability

<u>**Workshop**</u>

Regional Center of Expertices – A global Network for schools, universities and regional players

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An RCE is a network of existing formal, non-formal and informal education organisations, mobilised to deliver education for sustainable development (ESD) to local and regional communities. A network of RCEs worldwide will constitute the Global Learning Space for Sustainable Development. RCEs aspire to achieve the goals of the UN Decade of Education for Sustainable Development by translating its global objectives into the context of the local communities.

In this workshop we want to show how to apply for an RCE at the United Nation University. We will show the whole application process, give examples of successful application and explain the criteria of acknowledgement.

Key words: ESD; United Nation University; formal and non-formal education sector; RCE Espoo - Finland; european policy

Section 13
EARTH CHARTER: VALUES AND MULTICULTURAL APPROACHES

Paper presentations

Back to the Maya: incorporating Maya culture into a sustainability course for social science undergraduates in the Autonomous University of Yucatan, Mexico

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This paper describes the design, implementation and evaluation results of a sustainability course for undergraduate social science students in the Autonomous University of Yucatan. Previous research into students´ environmental culture in the university, based on the application of a questionnaire, showed that, while attitude scores were relatively high, those relating to behavioural intentions and environmental knowledge were much lower. This paved the way for re-orienting the course towards a multicultural approach, which incorporated field and classroom activities, as well as readings and discussions about the Maya´s way of building houses, producing food and caring for their natural resources. Preliminary evaluations of the course suggest that the greater emphasis on specific local content and focus on traditional Maya values have significantly increased the student's environmental knowledge, intercultural awareness and their capacity to link life style with ecological consequences.

Key words: Sustainability, Maya culture, Yucatan, University students, Environmental culture

Collective learning during the multicultural projects of sustainable developmental learning

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This study collects the knowledge about four projects in environmental and outdoor educational cooperation (1995-2009). Three EU-projects and one private research have intentioned to improve these subjects in kindergartens and primary schools and also clear the concept of sustainable development. In this study knowledge about these has been called as collective intelligence.

These project studies have been qualitative and action researches, data-collection interviews, surveys, diaries, and photos etc. which have been analyzed. In this study all this knowledge has been collected together and analyzed.

The main results are that co-operators have learned a lot of things about each other's country and society. They have learned new things about the ways to teach and educate small children. They have enriched each other in considering subjects. New ways to act in collaborative groups have learned and collective intelligence be seen in the products for the foreign friends.

Key words: environmental education, outdoor education, collective intelligence, kindergarten, primary school

Values and sustainability in modern society - The example of Polish and Latvia

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This article presents one of the stages of the wide range research into the understanding of the concept of value, the system of values as well as the sustainable development and education for sustainable development. The action research was conducted in Poland and Latvia – in two Polish and two Latvian schools operating in different economic and social environments, nevertheless sharing many similar characteristics.

The aim of this article is: (1) to present the results of the action research carried out by the author, (2) to compare the understanding of sustainable development by Polish and Latvian teachers and (3) to compare the methods of implementation of education for sustainable development in these schools.

The fact that the research was conducted among secondary school teachers is of particular significance as it determines its relatively unique character.

The author's theoretical understanding of the concepts of value and sustainable development corresponds to the concept used by other researchers from European countries and other parts of the world. The assumptions presented in this research were based on the research results obtained by the author earlier.

The results and conclusions arising from the research were used by the school management in their school work planning and in order to improve the quality of their work.

Key words: values, sustainability, education for sustainability, action research

Five-string kantele – a design model of joy and sustainable development

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The objective of this presentation is to discuss about the five-string kantele as an example of sustainable design. Kantele is an example of the Finnish national heritage, a heritage which has become a part of Finland´s living musical culture in kindergartens and schools. Our national heritage of folk music and poems were collected by Elias Lönnrot, and published as the National Epic, the Kalevala in 1849. The five-string kantele was first decorated and played by "Väinämöinen", a big hero in the Kalevala.

The aim of this qualitative research is to find out which kind of role kantele has in the Kalevala and the teacher education by content analysing the text of our National Epic and national core curriculum of basic education. The other aim is to discuss the design of five-string-kantele through the interviews of three Finnish designers: which kind of elements and principles of the design of five-string kantele has made it a good and sustainable product.

The results from Kalevala shows that in Finland the Kantele, firstly had the role of the first invention, secondly the role of providing enjoyment and pleasure, thirdly the role of distributing information and finally the role of peaceful lifestyle. The elements and principles of the design of kantele show that sustainable design object consists both visual, compositional elements and ecological principles of the product.

Key words: Five-string kantele, music education, Kalevala, sustainable design

Building a culture of peace in a global community

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This paper presents the changing nature of peace movements in the contemporary globalized world. The peace nowadays is understood more widely than only as conflictual war situation. It is considered as a political process signified with the respect to democracy and human rights. The nature of peace is seen as multidimensional reaching to all levels of societies and human life. How all this started was that in February 1994 UNESCO launched the programme "Towards a Culture of Peace" and in 1997 the UN General Assembly proclaimed the year 2000 as the "International Year for the Culture of Peace"; and in 1998, the same Assembly declared the period 2001-2010 the "International Decade for a Culture of Peace and Non-Violence for the Children of the World". The constitutional principle was: "Since wars began in the minds of men, it is in the minds of men that the defences of peace must be constructed".

The objective of the study is to contribute to the promotion of the sustainable way of life. The findings of the qualitative phenomenographic study of the data consisting the statements of a group of citizens to the research question what is the meaning of peace to them in a diversity I got three categories answering the question "How to start building a culture of peace?": 1) Citizens as agents 2) Character building and 3) Nature of peaceful living. The conclusion is that the role of an individual and the moral education are crucial on the agenda of peace building.

Key words: phenomenography, cultural study, multiculturalism, culture of peace, citizenship education

What is tolerance? Discourse analysis on diversity in Opettaja ("Teacher") magazine 1980s-2010's

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Finland is one of the world's most monocultural countries. The current generation has had to open itself up to many people from every corner of the world, which is a new phenomenon in Finland. Multiculturalism brings conflicting cultural and religious diversity of society as a whole and schoolteachers do not always have the skills necessary for conflict resolution. Although diversity has been discussed in different terms, the basic contents have been identical. Two new terms have entered into the debate: "positive racism" and "hate speech", and there have been conflicting viewpoints of what the term "tolerance" really means in today's society. The subject of this study is, therefore, the phenomenon of tolerance. The study will ponder this phenomenon by means of discourse analysis. Discourses create both objective and subjective reality: they describe various social phenomena under the same umbrella. In the field of education and amongst educational professionals, the discourse on tolerance has not been studied in Finland. The aim of the research is to describe and try to understand the discourse on tolerance in Opettaja ("Teacher") magazine in the 1980s - 2010s. The research questions are: What kind of discourse on tolerance will take place in different decades? The study will help teachers and schools in their work to integrate heterogeneous and multicultural groups of pupils and to meet the requirements of laws relating to such.

Key words: tolerance, diversity, multiculturalism, discourse analysis

Values education for sustainability

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Research objective: What factors affect the value education for sustainable development in Latvian? How students understand the importance of value in the life?

Design and methods: This longitudinal study used an ethnographic approach to explore the factors affecting the value education and students' understanding of the value significance to their lives. The analysis is carried out simultaneously at four levels: field analysis, taxonomic analysis, component analysis, theme analysis. Participants: 200 students, 200 teachers, 200 parents. Procedures: Every year from 1997 - 2012 are summarized the students, teachers and parents survey data, are assessed the dynamics of the students value formation, parents' and teachers' views on the factors affecting the value of education.

Results: The evaluative aspect (moral and aesthetical) of the content of basic education reflects acquirement of evaluative activity experience of pupils, creating their own system of values. The parents' value orientation is of great importance in the process of value formation during the school age.

Conclusions: Interpersonal relations in the classroom are significant in enhancing the value formation. The teacher's and the pupil's contacts and interaction result is formation and consolidation of the main orientations. The method of M.Rokich for determining the peculiarities of the value orientation lead to an affirmation about the influence of cooperation between the parents and the child on the child's value formation.

Key words: sustainability, values, values education

Update of pedagogical values in the process of young teachers' professional development

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The aim of the research is to update the acquisition of pedagogical values for the professional development of a young teacher.

Objective(s): What are the pedagogical values nowadays? How efficient and sensible is the study process in the development of personal self growth at higher educational institution? How does the acquisition of professional competences affect personal competences? Whether and how is it possible to promote the development of a young teacher's professional identity?

Design and methods: Mixed research design (survey, interviews)

Conclusions: Not only personal self-perfection of a young teacher but also self-realization, self-education process and content should be considered but also qualitative fulfillment and practical realization of opportunities, contradictions and problems in the development of personality and professional competences of a young teacher. Acquisition of higher education should become a student's personality qualitative self–realization process, thus it is essential to ensure a creative individual with free development in the improved and pedagogically harmonized personality and professional growth process during the study period.

Key words: Pedagogical values, young teacher, professional competence.

Pupils as environmental activists

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Tutors: Ahlholm Jouni, Sairanen Kati, Lavonen Kaarina

In the autumn of 2011, pupils of Mertala comprehensive school established a group for environmentally active students. The group carried out a campaign in the school aiming to affect pupils' environmental attitudes in the whole school. The students tried to change attitudes through various means: lessons and morning assemblies were held. In addition, a video was made and the school TV was used to inform the pupils. The amount of organic waste was measured during the campaign, as its aim to reduce the volume of it.

The student group conducted a survey on environmental attitudes – the survey was done before the campaign and it was repeated afterwards to measure the effect of the campaign on environmental attitudes. According to the results, the pupils experienced the school more active in environmental issues after the campaign compared the situation before the campaign. However, results were variable in relation to the pupils' personal attitudes and activity levels on environmental issues. For some variables, a small change in a more favorable direction was observed. According to the results, affecting environmental attitudes is difficult at least in short term campaigns.

The project was a nice experience. Pupils highlighted important issues at the school, and tried to influence public opinions. The group will continue to act next year.