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Healthy Aging in Digitized Societies

Proceedings of the 1st Summer Workshop of International Conference on Innovation & Entrepreneurship in Management, Wellbeing and Smart Health

"I am growing old, my body is deteriorating, and like all of you, will eventually cease to function. As a robot, I could have lived forever. But I tell you all today, I would rather die a man, than live for all eternity a machine."

- *Andrew Martin, The Bicentennial Man (1999)*

Aging has become global phenomenon in research and in development in recent years. In the Strategy 2015 – 2020, the University of Eastern Finland (UEF) has identified aging as one of four global challenges for which solutions are sought through research-based education in order to meet challenges of tomorrow's working life. Aging, lifestyles and health has been selected to be the first challenge, as it has influence upon the economy and welfare of countries. Globally, the number of older people (aged 60 years or more) is expected more than double, from 841 million people in 2013 to more than 2 billion in 2050. The number of older people in less developed countries is projected to increase by more than 250 percent, compared with a 71 percent increase in developed countries.

Healthy Aging in Digitized Societies – HeADS`2016

Proceedings of the 1st Summer Workshop of the International Conference on Innovation & Entrepreneurship in Management, Wellbeing, and Smart Health

The 1st Summer Workshop of the International Conference on Innovation & Entrepreneurship in Management, Wellbeing and Smart Health has become reality due to the interest of the University of Eastern Finland (UEF) to collaborate with the rapidly developed Asian countries in research and sciences. Aging has been the growing reality in Finland for the past decades, and has become the global concern influencing economies and politics of countries. Rapid demographic changes have intensified the need for new technologies and for the development in human resource management, education and healthcare systems in order to maintain and improve wellbeing services for the aging population.

The collaboration initiative with the Kyungpook National University (KNU) in Daegu South-Korea began three years ago in 2013, when professors from KNU came to visit the Joensuu campus of UEF along with their trip to the Metropolia University of Applied Sciences (UAS) in the capital area. Later in "The 6th International Conference of Entrepreneurship, Innovation and Nursing" in South Korea the suggestion to hold the conference in Finland was raised by Korean partners in November 2015. These annual conferences have been multidisciplinary by nature since the beginning. So far, participants have come from areas of business, information technology and nursing.

Healthy Aging in Digitized Societies HeADS' 2016 was selected as the core content for the conference in Joensuu. Both

South-Korea and Finland are challenged as the fastest aging countries in their regions. Both countries have experienced rapid development in science and in education, reaching top results in Pisa evaluations of education in the past few years. Regardless of the cultural differences between the Oriental and Northern European regions, there are many common concerns as well as interesting differences in practices of healthcare. New ideas can be encouraged by sharing research results as well as seeing practices. Through this summer workshop, we hope to find common interests concerning the aging phenomenon for further research and education. By developing education in healthcare, as well as in service designing together with digital development, we can improve wellbeing of aging in our societies. We seek to take further steps towards finding suitable solutions through interdisciplinary research and education in order to work towards a responsible and sustainable future for all aging people in our societies.

The HeADS`2016 conference in Joensuu has been made possible due to financial support of the UEF University Joensuu Foundation and The Federation of Finnish Learned Societies. The City of Joensuu has shown its support by organizing an evening reception and participating in the mutual tour of local sights for the international guests. Metropolia UAS has been active partner in conference planning since the beginning. In addition, numerous hours of work and networking between individuals and institutions have been contributed in order to make this conference reality.

The last but definitely not the least is our "GREAT THANKS" to the Professor Gyewan Moon, who has initiated this conference and has been constant encourager and adviser on the way to the goal. We welcome you all to participate the Workshop.

Markku Tukiainen, Saara Hiltunen and Roseanna Babashkina

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Contents

PART I: Keynotes

1. Healthy Aging in Digitized Society

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The use of information and communication technology (ICT) has already been evident in multiple sectors of society for decades. However, in health and social care the adoption of ICT has made relatively slow progress especially in the care of elderly citizens. In recent years the demographic change and growing number of aged citizens has been a driving force globally to look for new models, means and tools to provide support, assistance and care for this special group in society. [1, 2.]

A lot of strategic planning and initiatives have been published to guide the development of ICT implementation. In Finland the "National eHealth and eSocial strategy 2020 - Knowledge to support wellbeing and reforming services", as an example, highlights that all services must be client-centered, effective and equally accessible to everyone. This calls for reorganizing services and diverse cooperation between actors and care providers. Further, it requires that the exchange of information is safe and secured as well as based on the patient's preferences. The strategy is also based on an assumption that citizens are active in terms of being able to take responsibilities for their own wellbeing and health and co-operate with care providers. The effectivity of social and health care services is supported by versatile use of digitization. [3.]

This presentation will discuss healthy aging with the support of ICT applications. The special interest is to focus on the topic using to concepts: integrated care and connected health, which

are partially overlapping [2; 4-5]. In this presentation **integrated care** means client-centered care with multiple levels of coordinated services and collaboration between various actors. **Connected health** means the use of advanced technologies to share, analyze and use health data for advanced decision making. Finally, some central ethical aspects will be raised.

1.1 INTEGRATED CARE

In general reorganizing health and social care services for citizens has the same challenges as a focus on any specific group of citizens, for instance the elderly – innovative solutions, sufficient resources, competencies and empowerment of clients. However, participation, collaboration and management of services needs more in-depth planning for aged citizens as they may have various constraints based on diseases and aging. The services will be provided using ICT at least partly, and in some cases completely, depending on target groups' needs, context, infrastructure, and legislation. Integrated care has the presumption of continuity and coordination of care delivery. Thus, these services are needed for the long term and have preventive, chronic and rehabilitation forms and models. The service providers represent hospital, primary care and social care. In many cases informal caregivers and family members have a central role, especially in home care. [2; 4.]

In long term care as well as in rehabilitation various robots have been tested and adopted in practice. The acceptance of robots has raised a question of whether they are pets or really services providers? Previous studies have concluded that robots can be used as activators for dementia patients, collectors for various items, operators for transfers, and can support patients' contacts with their relatives. [6.]

1.2 CONNECTED HEALTH

Connected health technologies can be divided in to application areas supporting lifestyle, prevention, and rehabilitation. These areas are all growing fields of technology aiming to support self-care as well as institutionalized care. Applications to support management of chronic diseases is an area profiting aged citizens, especially in terms on distance monitoring. [2.] Aged people will also benefit from applications supporting living at home, especially preventing them to fall or in case of cognitive decline [7]. The adoption of technology involves acceptance to use applications that in the case of aged citizens need support and guidance, based on a previous study [8].

Electronic health records are systems used in clinical settings for data management. Personal health systems are systems aiming to empower citizens to be engaged in their own health and care. [9.] These systems can support the continuity of care and can be interoperable with clinical records. These systems can be ambient and/or body devices that acquire, monitor and communicate physiological parameters and other health related data of an individual. Systems can also consist of intelligent processing of the acquired information with expert biomedical knowledge to produce new insights about an individual's health status. Systems may also create active feedback based on such insights. [2; 10.]

An evolving area to support connected health is sensor systems. Sensors are able to record a variety of signs and signals. Today, miniaturization of sensors, energy efficiency, comfort of use and connectivity are key principles for the design of sensors. Numerous sensors are now commercially available and mobile-connected for wellness and basic lifestyle assessment. However, they will have a great role for chronic diseases due to the minimal burden for the patients. [2; 5; 10.]

Connected health technologies, enabling the recording and archiving of health and health related data, lead to remarkable possibilities to mine data. This "Big Data" can provide deep insights to prevention, care and disease management. Further,

these huge databases will be deployed as cloud services, which will also provide flexible and efficient access to collected data for analytics. [2.]

1.3 DISCUSSION

The use of advanced technology constantly creates needs to discuss ethical questions involved in implementation. Ethics is especially important when a vulnerable group of the population, such as aged citizens, are concerned. Confidentiality and privacy are cornerstones of human behavior and also regulated by various laws and norms in health and social care. In terms of digitization recording, information exchange and management with technological tools and applications, data security and protection should be strengthened both with guidelines and technology [2]. These strategic statements have been active already for many decades but still they need to be reworded in each strategic document as especially professionals tend to neglect them.

Further, the adoption of technology creates questions of competencies; do both citizens and professionals have knowledge and skills to use applications and systems. Fairly often aged citizens are accused of being too ignorant and incompetent to use ICT. Previous studies have stressed the importance of service providers to take on active role in empowering aged citizens in the implementation of new technology [8].

The use of ICT has also been criticized to be inhuman in the care context [10]. Thus, it is surprising that robots, especially pet-robots, have proved to activate human touch. [6]. In terms of ethics one can also argue, isn't it unethical not to use technology when it promotes to deliver more efficient services and safer care than humans. The use of ICT has also created the concept of telepresence which can be interpreted as attributes: a tireless and active collaborator [7].

Based on an integrated care model and connected health technologies [2] we can assume that aging in the future has a lot of technological support for collecting health data and in information management. In terms of a digitized society, patients, informal and professional care providers, as well as family have a lot of support to monitor, assist and assess healthy aging, to access and manage timely data and information, and make precise decisions for the future.

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2. After The Venture: The Reproduction and Destruction of Entrepreneurial Opportunity*

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Research summary

The endogenous formation of entrepreneurial opportunity has become an important theoretical perspective. Research to date focuses on initial opportunity creation dynamics leading to venture formation. This excludes the ongoing enactment of opportunity that takes place after venture founding. We focus on this phenomenon, arguing that opportunities must be continually reproduced through maintenance of consensus among stakeholders about their viability. If consensus fails, the objectivity of the opportunity is "destroyed" in a process we label "opportunity de-objectification." We identify predictors of opportunity de-objectification and summarize their effects in

propositions suitable for future empirical testing. Implications for future theory and research are also discussed.

Managerial summary

Previous entrepreneurship research has focused attention on the process through which opportunity ideas become objectified and perceived as external facts by entrepreneurs and their stakeholders during venture formation. While such attention is critical, we argue that venture founding marks the beginning, rather than the end, of a dynamic process in which the fact-like status of opportunities is maintained. If stakeholder consensus about opportunity viability is disrupted, it raises questions about this factual status and opens up the possibility that the opportunity is a subjective cognition of the entrepreneur rather than an objective reality. We call this phenomenon "opportunity de-objectification," and we identify a number of factors that precipitate it. We also suggest that entrepreneurs may reduce the likelihood of this phenomenon by managing some of the factors that induce it.

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3. Japanese Integrated manufacturing system and IT strategy for Sustainable innovation

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Abstract

Japanese Integrated manufacturing system has sustained its usefulness in numerous integral type of product architecture groups including manufacturing and export-driven product development projects since post-World War II to the current global competition contexts. In practice, various high performance automotive products, industrial machinery equipments and electrical machinery component parts have maintained their relative competitive advantage in the global markets. Behind such sustainable performance edge there has been effective team work of cross-disciplined engineers, serious efforts of building information technology capabilities that allow effective flows of design information across diverse organizational units. This is what we call integrated manufacturing IT system (IMIS)

which has supported Integrated manufacturing system. Prior to network revolution period (1995-2005) most Japanese firms used internally developed their own IT system. As the result, integrated manufacturing IT system (IMIS) has sustained Japanese Integrated manufacturing. In this paper, we provide a research model which defines the dynamic relationships between integrated manufacturing IT system (IMIS), global standard IT system (GSIS) and global integrated manufacturing IT system (GIMIS). Based on case studies of Japanese global firms we present how to implement global integrated manufacturing IT system (GIMIS). Lessons and implications are discussed as well.

Keywords: Japanese Integrated manufacturing system, Sustainable innovation, Product Architecture, Organizational capabilities, Integrated Manufacturing IT System(IMIS), Global Standard IT System(GSIS), Global Integrated Manufacturing IT System(GIMIS).

1.1   INTRODUCTION

Firms that pursue value innovation pioneer and deliver premium value products and services to customers put innovative effort with high strategic orientation in terms of securing creative talents, leadership practices, value differentiation, and timely responses to changing customers' needs and expectations (Kim and Mauborgne, 2005; Leavy, 2005; Salavou et al., 2003; Hong et al., 2013).

Japanese Integrated manufacturing system has sustained its usefulness in numerous integral type of product architecture groups including manufacturing and export-driven product development projects since post-World War II to the current global competition contexts. In practice, various high performance automotive products, industrial machinery equipments and electrical machinery component parts have

maintained their relative competitive advantage in the global markets. Behind such sustainable performance edge there has been effective team work of cross-disciplined engineers, serious efforts of building information technology capabilities that allow effective flows of design information across diverse organizational units. This is what we call integrated manufacturing IT system (IMIS) which has supported Integrated manufacturing system (Fujimoto and Park, 2015). In this study, we note three distinct periods of IT evolution in terms of IT usage patterns prior to information and communication technology(ICT): (1) digital revolution period (1980s); (2) network revolution period (1995-2005); (3) user revolution period (2006-)(Japanese Ministry of Commerce, 2013). Prior to network revolution period (1995-2005) most Japanese firms used internally developed their own IT system. As the result, integrated manufacturing IT system (IMIS) has sustained Japanese Integrated manufacturing (Park, 2009).

For a long period, Japanese manufacturing firms have made intense efforts to defense their competitive market position for the integrative monozukusi products in response to the open modular challenges of electronic products from emerging competitors from Korea, Taiwan and China. In the course of such turbulent competing environments Japanese firms have evolved their IT system as Integrated Manufacturing IT System (IMIS). The drawback is that such IMIS is context specific and local application orientation which is excellent for products targeting Japanese domestic market and advanced markets in North America and European Union. However, its application complexity details do not fit Global Standard IT System (GSIS) which is mostly implemented for open modular type of products targeting emerging markets.

In this article, we first review the history of Japanese IT system implementation and define diverse IT requirements that serve both advanced market standards and emerging market needs. The essence of effective ambidextrous strategy is to maximize strengths and complement weaknesses. This requires synergistic combination of integral architectural IT system (i.e., integrated

manufacturing IT system: IMIS) and open modular architectural IT system (global standard IT system: GSIS). We therefore present IT system evolution of Japanese firms from product architecture perspective. By Taking dialectic approach, we provide a research model which defines the dynamic relationships between integrated manufacturing IT system (IMIS), global standard IT system (GSIS) and Global Integrated Manufacturing IT System (GIMIS). We then examine further through several case studies. Thus, global integrated manufacturing IT system (GIMIS) is the synergistic combination of IMIS and GSIS. Based on case studies of Japanese global firms we present how to implement global integrated manufacturing IT system (GIMIS). Lessons and implications are discussed as well.

2. LITERATURE REVIEW

2.1 Product Architecture

As consumers' demands have become increasingly uncertain, diversified, and sophisticated, current products in advanced nations tend to become more complex (Fujimoto and Park, 2012). An increase in product functionality requested by customers, quantity of structural elements such as parts corresponding to these functions, and number of correlations between the functional and structural elements of product designs leads to an increment in the number of coordinative routines and procedures required for development. Consequently, both corresponding products and their design processes have become more complex.

In particular, complexity is apparent in highly functional mechanical products with many parts. Design process which designs these complex products and organizational structures are closely related to types of product architecture (Clark and Fujimoto, 1991; PineⅡ, 1993; Ulrich, 1995; Ulrich and Eppinger, 1995; Kogut and Bowman, 1995; Sanchez and Mohoney, 1996; Kusunoki and Chesbrough, 2001; Suh, 2001; Baldwin and Clark,

2002; Fujimoto, 2003; Fujimoto, 2007; Chesbrough and Prencipe, 2008; Fujimoto and Park, 2012).

Product architecture is the basic design philosophy which is divided into modular/integral (Ulrich, 1995; Baldwin ad Clark, 2000; Fujimoto, 2003; Park and Hong, 2012). For modular type functionality and structure (components) have one to one relationship and thus each component parts are independently designed and combined separately. Thus, each separate and independent unit is called a module. On the other hand, integral type shows multi-to-multi relationships. Any changes in design influence in other parts and the design details need to consider complex interrelationships within product structures.

Figure 1 depicts how firms change product architecture—either from integral to module or modular to integral (Park et al., 2012a).

Integral architecture (e.g., car) shows highly interrelated relationships between product functions and its body parts. Integral product processes are not easily divisible. On the other hand, modular architecture shows one to one relationship between product functions and product parts. So the processes can be easily compartmentalized and separated. Products with integral architecture may switch to modular one as product complexity decreases. On the contrary, product with modular changes into integral one if product complexity increases.

But product architecture concept has mainly not included relationships among customer needs and function and structure and only focused on relationships between function and structure. Until now, most Japanese firms kept quality as of first importance, most of products that target their domestic market, or the markets in North America or Europe, are highly priced. Thus, Japanese firms sufficiently cannot correspond to new global needs in keeping up with their purchasing power potential.

Figure 1 Type of Product Architecture
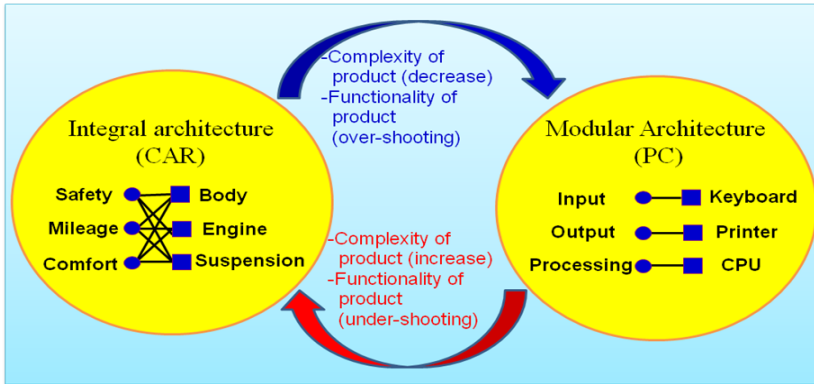
Source: Park et al. (2012a)

However, some of these Japanese firms also experience successful business models through their adaptation efforts to these emerging markets by developing products that integrate their technological capabilities to the market needs. Thus, firms that respect the unique customer needs in these growing markets and deliver the products that serve them with quality products that these customer afford. Such firms pursue strategy not merely reducing the premium elements from the products sold in the advanced markets but multiplying the new features according to the complex market requirements.

In particular, to develop closed-integral products, innovative capabilities are necessary. In this sense, we analyze relations between innovators and product architectures.

2.2 Organizational capabilities

Organizations must innovate if they are to survive in today's fiercely competitive environment. An intermediary organization is important that acts as an agent or broker in any aspect of the innovation process between two or more parties (Harison and Boonstra, 2009; Park et al., 2012b). An intermediary can help companies to maximize their chances and success of innovation in developing new products and services and R&D activities

(Hartono et al., 2010; Lee et al., 2010; Mun et al., 2010; Park et al., 2012b).

Manufacturing strategy has a determining impact on the development of competitive capabilities (Hill, 2005; Slack and Lewis, 2002; Hong et al., 2013). Through strategic actions which consider customer demands, competitor actions, supplier capabilities and firm's internal and external strength and weaknesses, firm develops its capabilities (Schroeder and Lahr, 1990).

The average US and European automobile manufacturers have wrestled with longer product development lead times than their Japanese counterparts despite the fact that the former adopted 3D CAD systems earlier and more thoroughly than the latter (Fujimoto and Nobeoka, 2006; Park et al., 2012b). Japanese auto-manufacturers report that their average product development lead time was shorter than 20 months, whereas it took the US firms around 30 months to develop similar products. The US and European firms (Chrysler as an example) adopted 3D CAD roughly three years earlier than Japanese firms and the actual results show that Japanese firms are still ahead in virtual digital mockup (Fujimoto and Nobeoka, 2006; Park et al., 2012b). In the late 1990s, most of USA Firms adopted 3D CAD for drafting their 100% component parts while Japanese counterparts did only 49% of component parts. Thus, although the Japanese firms were lagging behind USA Firms in terms of adopting the latest IT, they outperformed their Western rivals through more effective IT utilization through a set of organizational routines (e.g., collaborative problem solving at the early stage of new product development).

The Major theme of manufacturing capabilities is the manufacturers' choice of emphasis among key tasks (Hayes and Wheelwright, 1984; Hong et al., 2013). The capabilities include cost efficiency, high quality, fast and reliable delivery, and product/process flexibility (Hayes and Wheelwright, 1984). Manufacturing capabilities were built sequentially over time. With their relatively short manufacturing history, Korean manufacturing capabilities are about how to secure rapid

learning, improvement and innovation in organizations and industries.

When we consider the relations between innovation, product architecture, and organizational capabilities, we expect that consumer needs will become more sophisticated and a tendency towards stricter environment, energy, and safety constraint conditions will continue in future (Fujimoto and Park, 2012). To meet this trend, it is necessary to conduct various countermeasures, such as IT system and modularity of product architecture and standardization of parts, and construction of organizational capability for team development. In particular, complex products with integral architecture, their mechanical side in particular, may fit well with coordinative (i.e., team-work-oriented) organizational capabilities, as well as with design processes emphasizing detailed structural designs at relatively early phases of product development. Such integral-coordinative processes will also need supports of team-oriented IT.

Through this analysis, firms can concentrate on their own core competence, and outsource non-core area. Core competence differentiates any firm from its competitor (Park and Hong, 2012). Furthermore, firms using this method thoroughly understand the customer requirements and flexibly use component parts from external suppliers for cost reductions, and yet still maintain integral product architecture for high quality standards and product integrity as their core competence area.

2.1   GLOBAL INTEGRATED MANUFACTURING AND IT SYSTEM

In discussing Japanese manufacturing system it is important to understand the concept of Monozukuri which can be defined in both broad and narrow perspective (Fujimoto, 2001 ; 2003). This paper is based on manufacturing (monozukuri in Japanese) in broad three aspects: (1) an integrated manufacturing (monozukuri) IT system that connects cross-functional work including strategic management, R & D, design engineering,

manufacturing production activities, marketing, sales, maintenance and services; (2) a broad information system that focuses on design information that is embedded in all business processes; (3) the system purpose is sustainable competitiveness based on customer value. Combining these three aspects we define monozukuri as integrative communication processes of design information through diverse media mechanisms (Fujimoto, 2001, 2003; Park and Hong, 2012).

3.1. History of IT System Applications of Japanese firms

In early 1960s Japanese information service industry was born (Information Service Industry Association, 2014). At this period computer were rare and expensive. Information service firms as business computing centers offered computing services to selective users (e.g., large banks and manufacturing firms) with their huge computer systems. In 1980s, with rapid increase of software development, these firms focused on software development rather than computing services for their top sales performance. From the mid-1980s, large global firms started information service subsidiary divisions to utilize computer application technologies and experiences. In 1990s, with accelerating complexity of business network and software information processing requirements, many Japanese large firms were no longer able to develop effective information system with their internal capabilities alone. Instead, they outsourced their complex information processing system needs and diverse business solutions to information service firms with deep technology development capabilities. These information service firms became known as system integrators.

For North America and Europe, such system integrators continued to build best practices by different industries in global scale and were positioned as global standards setting IT leaders. However, in response to specific user requests, Japanese system integrators focused on building individual customized optimal system. They did not go beyond best practices of Japanese firms and thus failed to develop global industry standards like other global IT system vendors.

In addition, from mid-1980s most of Japanese firms discontinued their information processing division to reduce high fixed costs related to IT system services. By 1990s, with seriously weak internal IT development capabilities, they increasingly depended on external IS vendors and consultants for their customized needs and naturally number of competent internal IS personnel remained very small in number. According to recent information service system trend report, the average outsourcing ratio in 2014 is 61% (JIAS, 2014). These projects mostly focus on integration of firm specific legacy system and global standards IT system.

3.2. Global integrated manufacturing IT system (GIMIS)

Japanese integrated manufacturing (monozukuri) is based on factory-level embedded system knowledge (Fujimoto and Park, 2015). Japanese monozukuri capabilities in terms of technological depth and quality processes are well-documented. Japanese software system providers, which once discarded with its perceived weak competitiveness, is comparable with US counterparts in selected areas (Cusumano, 2004; Cole and Nakata, 2014). Existing IT system is not quite fit to achieve global expansion of Japanese monozukuri system capabilities which are characterized with high level of embedded knowledge in factory level. As in the case of Bridgestone, factory-level embedded knowledge should not be fixed within firm level but flow in the form of FOA (Flow Oriented Approach) (Tomita et al., 1999; Oku et al., 2010, Park et al., 2011; Fujimoto and Park, 2015). Integrated manufacturing IT system (IMIS) aims to respond to specific customer requests point by point, support product development design processes and maintain factory field level routine requirements as well. Therefore, IMIS is mostly user-initiated IT system, not IT vendor-designed IT system.

In contrast, implementation of global standard IT system (e.g., ERP) allows firms to immediately adopt the best business processes of top global firms. However, with rapid development of IT technologies, all IT systems, without any exceptions, keep upgrading their internal capabilities. A brief review of recent IT

system evolution indicates continuous progress in all IT systeme areas such as MRP (material requirements planning), ERP (enterprise resource planning), CRM (customer relationship management), SCM (supply chain management) IT solutions, and CC (Cloud Computing), SOA (Service-oriented architecture), IoT (Internet of Things), Industry 4.0 and AI (Artificial Intelligence).

In view of such breathtaking technological change speed, it is unreasonable not to associate with global IT standards. Naturally, Japanese firms are more likely to adopt global standard IT system (e.g., ERP and SCM packages) beyond firm specific IT system development.

Figure 2: *Global Integrated manufacturing IT System (GIMIS)*
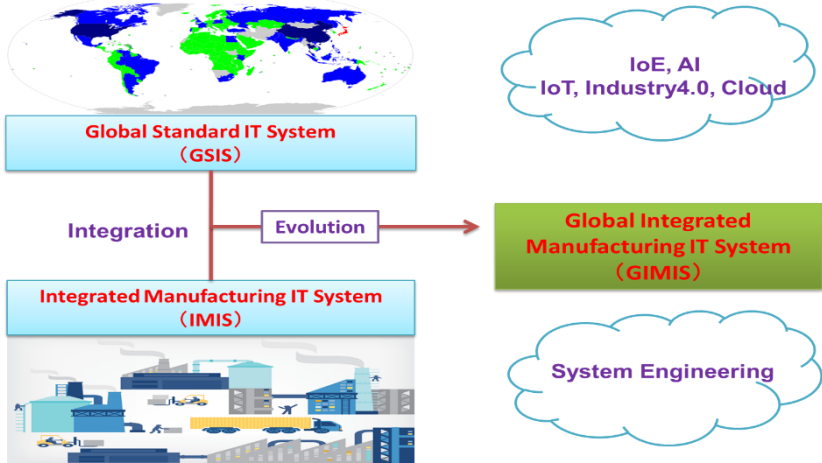
However, most of external IT system adoption tends to neglect firm specific contexts and their organizational identity. Over time, even the best systems become outdated and rigid and hence are unable to stay flexible and timely toward dynamic change needs. The only way to overcome such shortcomings is to consider user initiatives and develop unique system that reflects firm specific identity-based requirements. For sustainable delivery of outstanding products that exceed customer requirements, it is crucial to build IT system that achieves integration of product development processes and organizational capabilities. The

essence of winning strategy is ambidextrousness that highlights strengths and complements weaknesses. This is what a new kind of organizational capabilities is about. It thrives on integral architecture of integrated manufacturing for complex products (e.g., automobiles and medical equipments) which is a mark of outstanding Japanese manufacturing firms; yet it is also capable to adopt open modular products for consumer products (e.g., electronics) that use a large number of suppliers with limited manufacturing capabilities. In this way, it is possible to attain long-term global competitiveness by penetrating both the emerging markets and advanced markets. Such ambidextrous strategy utilizes both integrated manufacturing IT for integral architecture products and global standard IT for global modular products. In other words, we argue for GIMIS (Global Integrated Manufacturing IT System) that integrates IMIS (Integrated manufacturing IT system) and GSIS (global standard IT). Figure 2 shows Japanese monozukuri industry IT strategy which combines both (1) IMIS (Integrated manufacturing IS) and (2) GSIS (Global standard IS).

As global competition intensifies including in emerging economies in the environment of overall free trade trends in spite of strong national level oppositions, Japanese firms pursue "global long term optimum management" which requires both absolute domestic advantage (based on operational productivity in factory field level) and relative global advantage (based on total cost competitiveness). Such double-edged competitive swords combine IMIS (Integrated manufacturing IT support) and GSIS (Global standard IT support), not focusing on either IMIS or GSIS.

In the period of 2010-202, global firms in emerging economies (including China) experience increasing upward labor cost hike pressure. Naturally, outstanding factory level productivity performance through monozukuri system is receiving greater attention as a practical way to maintain production network in emerging economies as global export base. Japanese firms adopt global total optimum management in the form of (1) maintaining highly productive production facilities in Japan as domestic

knowledge transfer core and (2) linking emerging and advanced economies through global production centers. Most appropriate IT systems that support global total optimum management is IMIS (Integrated manufacturing IT support) for domestic production facilities and GSIS (global standards IT) for global production centers.

Table 1 summarizes the details of IMIS and GSIS that are crucial two wings of GIMIS. Although no Japanese firms have yet successfully integrated both IMIS and GSIS, there is a sign of movement toward GIMIS (global integrated manufacturing IT).

Table 1: **Comparison of IMIS and GSIS**

	IMIS (Integrative Manufacturing IT System)	GSIS (Global standards IT System)
Purpose	Knowledge Transfers of Outstanding Japanese Productivity Performance	Knowledge Transfers of Outstanding Best Practices of non-Japanese Global Firms
Strengths	Japanese domestic IMIS-based productivity performance	Global standards of Integrated IT practices (e.g., MRP, ERP, SCM Packages)
Basis	Complex production processes, efficient team work methods, and cross-disciplined workforce.	Global standards of leading firms in advanced markets that also impact the methods in emerging economies
IT System Location	Domestic Production Facilities	Global Production Facilities

For example, as a practical step for integration of IMIS and GSIS, Komatsu, Japanese global construction equipment firm, uses global standard period software ERP which facilitates daily collection of various cost performance reports of global production centers and standardizes CAD design information and BOM production requirements.

Figure 3 is BOM based architectural analysis framework which is an extension of Komatsu style of GIMIS (global integrated

manufacturing IT system). In general, BOM (Bill of materials) is a record of components codes and assembly sequences. Manufacturing firms use BOM to monitor the complex flows from order receipt to order fulfilment detailing steps of product planning, design, procurement, production, and maintenance activities. Depending on the nature of business operations, firms use design engineering BOM (E-BOM), manufacturing BOM(M-BOM), services BOM(S-BOM), and master BOM(M-BOM). M-BOM is a massive data base that covers business processes including design, manufacturing, procurement, maintenance services.

Figure 1: *Model of Architectural Analysis connecting BOM of design information*
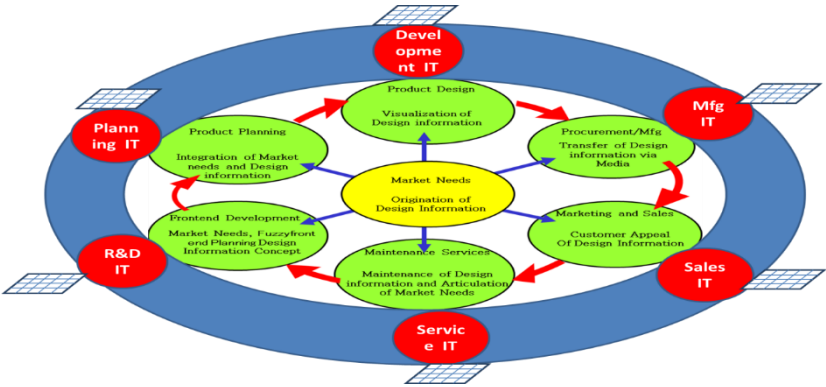
Komatsu installed KOMTRAX (from 2001) and CMS (cash management system) (from 2007) in construction equipment to manage operational efficiency, energy consumption and IT utilization rate in real time from distant locations. By 2009 Komatsu also completed standardized BOM (both design features and codes details of component parts) in all production facilities around the world. Such standardization efforts made flexible parts transfers between production facilities and simultaneous production in factory work units around the world. Komatsu, prior to components codes standardization, strengthened network infrastructure for data exchanges from any parts of the world. In October 2008, Komatsu delegated network

operation management to US-based Verizon for effective worldwide connectivity.

Komatsu also named its internally developed BOM system as G-DMS (Global Data Management System) which unified data communications between R & D, CAD design divisions, factory ERP (Infor ERP LN). G-DMS is a global single system in which each local design work unit in the upstream uses general CAD systems and every local factory unit in downstream operates MRP system installed with Infor ERP LN. Design data flows from CAD system via G-DMS to ERP. The internal development teams of Komatsu also developed interfaces mechanisms between CAD and ERP system. In this way, Komatsu's G-DMS utilizes multiple global hubs for connecting all local systems with standardized CAD and ERP systems.

The broad operational scope of G-DMS includes CAD-based component parts data (BOM data), BOM editorial function, CAD-applied electronic design blueprint, CAD data release function, paperless electronic design blueprint approval, global design change automatic notice and communication function, M-BOM(manufacturing BOM) editorial function, direct data transfer of Infor ERP LN, REACH(Registration, Evaluation, Authorization and Restriction of Chemicals) and automatic evaluation of material fitness test according to export regulations criteria. Concept of G-DMS started in 2004, actual development was done in 2005, and by 2006 the system was implemented in Chattanooga facility (TN, USA). From December 2006, D52-22 (a midsize bulldozer jointly developed by Japanese and American design teams) began a large scale production. In 2007, it was installed in domestic facilities in Japan. Similar implementation of the same system occurred in the facilities in Europe (2008), Brazil (2008), China and Russia (2011). In the course of expanding the implementation scope, Komatsu has expanded data base and kept improving overall system functions. One of additional function is target cost functions of all new test equipment. By 2009, G-DMS included such cost BOM in its data base. Such cost BOM enabled the management to monitor factory level production efficiency and productivity data and thus reduce significant

number of manufacturing processes involving extensive human activities. Komatsu's GIMIS (Global integrated manufacturing IT system) is an example of how to integrate both IMIS (Integrated manufacturing IT system) for tapping the potential of Japanese manufacturing capabilities and GSIS (global standards IT system) for addressing global market requirements.

3. CONCLUSION

During Post World War II period in Japan, historical contexts of "shared destiny" among people influenced firms as a whole to jointly own value added flows in the form of integrated manufacturing work environments. Japanese style of IT support for IMIS needs reflected such IMIS-centered IT system emphasis. This is what made Japanese outstanding factory field level productivity and flexibility; however, such Integrated manufacturing IT system (IMIS) did not promote standards setting between corporate strategic division and factory field operations and therefore there was relatively weak global system linkages.

On the other hand, GSIS (global standards IT system), with its high emphasis on specialized functional segment's needs, is not necessarily compatible to IMIS (Integrated manufacturing IT system). Japanese manufacturing firms (monozukuri orientation) focus on sustainable competitiveness. Therefore, implementation of GSIS by sacrificing field level productivity performance is almost like seeking globalization for the sake of globalization.

In this article, we explain the strengths of IMIS (Integrated manufacturing IT system) and point out the needs for GSIS (global standards IT system). In other words, we argue for GIMIS (Global Integrated Manufacturing IT System) that integrates both IMIS and GSIS. In conclusion we present Figure 4 that shows an ideal GIMIS (global integrated manufacturing IT system). This reflects how to fulfill the dynamic requirements of the emerging IoT and Industry 4.0 and at the same time achieve high level of intelligent system specifications for IMIS needs sensing, complex

control mechanisms, intra- and inter-firm network connections. Future research may examine related issues further to provide useful guidelines for global firms that wrestle between the needs for unique firm contexts and global market requirements.

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4. Trust Research as a Source for Innovations Enriching Theory and Methodology with a Novel Process Approach in the UEF 'Trust within Organizations Research Group'

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Abstract

   This paper discusses a new, innovative process approach to trust research examining theoretical views on process orientation and presenting an illustrative empirical example of the groundbreaking process study of trust development in the team

context. Process orientation has emerged in organization and management studies in the past two decades or so. However, in the trust research field it is a new, emerging and unconventional approach scarcely applied so far. Process studies focus on how and why things develop, emerge, grow or terminate over time. This paper represents an example of the innovative research work applying a novel process approach. The approach adopted in the UEF Trust within Organizations Research Group was also evaluated as novel by the international research evaluation board at UEF in 2013.

In unfolding processes of trust development over time, qualitative methodology is typically used in empirical studies that produce contextual, know-how knowledge (instead of know-what). These kind of studies aim at deepening and enriching the understanding of the dynamics of trust development. The studies also complement quantitative research methodology in a mixed method research. Process orientation and studies involve a few characterizing features that are discussed and examined in the paper. And a newly published theoretically and empirically innovative research example is presented exploring the process dynamics of trust development in two teams. The study utilizes also innovative and generative power of metaphors in the interpretation of qualitative data and illustration of the findings.
Keywords: trust, development, dynamics, process, qualitative, team leadership, metaphor, innovative, novel

1. INTRODUCTION

Examining research topics as a process is a kind of worldview seen more as an orientation rather than doctrine. The world around us can be viewed as processes (not, e.g., entities). Thus, a process approach can be applied to various topics exploring an array of issues in organizational and management research, for example, traditional areas such as organizational change,

innovation, leadership, strategy, and communication. The aim of process studies is to increase and deepen the understanding of the phenomenon.

As to a methodology, a qualitative research approach is commonly applied when topics are studied from a process perspective. Recently, qualitative studies have grown gradually in number in the trust research after increasing calls for enrichment of methodological diversity in the field. Drawing on the theoretical discussion a way of studying trust development as a process is suggested (Savolainen and Ikonen, 2016). Studying trust as a dynamic process makes the research effort highly complex but is worthwhile giving the aim of the research to elaborate and advance a process approach in the trust research field, more specifically, in interpersonal work relationships. The main research question is: How does trust develop and how do the nature and dynamics of the trust development process emerge in the intra-organizational work relationship context?

Theoretically we draw on the prior trust research that has presented some perspectives and models for elaborating a process-oriented approach. In the process view, research topics can be studied as situated sequences of activities and complexes of processes unfolding in time. This departs from what dominantly quantitative, static and generalization-oriented research produces. The aim of the paper is to add to the current knowledge of trust as a dynamic process by focusing on the interactions and activity of trust-building in work teams. In process approach time is one of the most essential elements with two other main characteristics of interaction and context. The actions of actors are mediated by organizational, linguistic and material artifacts occurring in time and space and through interaction.

Empirical research on trust as a process is still at an early stage and needs more attention (Schilke & Cook, 2013, Savolainen 2011b). As enrichment of methodological diversity has been called for in recent years in the field (Lewicki, Tomlinson &

Gillespie, 2006; Möllering, 2006), it is the intent to illustrate the dynamics of the development process through qualitative, retrospective interview data from two teams. In this paper, we intend to show the team study as an example of a process approach adopting a qualitative methodology. Our studies of inter-personal trust development in the UEF research group adopt a relational view of trust in organizations attempting to find out how trust develops in different levels of organizations (individual, dyadic, group and organizational levels). We have adopted, in varying degrees, a process vocabulary and have pursued the development of a new, innovative way to studying trust development. Through that we are able explore and reveal dynamics and process patterns of trust development in different contexts. This innovative work also sensitizes us to understand and elaborate further the way of studying trust as a process.

At this stage we focus on unfolding 'becoming' (flow) and nature of trust development process. By using the term trusting indicates our purpose to move towards studying multilevel dynamics of trust within organizations. Especially in the digitalized world, a fast-changing and more and more technology-mediated management (e-leadership), challenges us to deepen our understanding of trust-building in leadership. Deeper understanding leads to benefits for practicing leaders and managers increasing their awareness of the role of trust. This way trust-building skills as well as restoring trust in organizations can be improved. Consequently, the trust skills benefit organizations by nurturing creativity and innovations and improving co-operation and co-creation, to mention a few.

The empirical example of a process study in the paper is conducted in two teams, a sports team and a multi-professional team. The sports team consists of hired coaches and members, and a multi-professional team a leader and members in a third-sector work organization. In the example of the empirical study, findings are reported using metaphors as a way of illuminating and constructing theory of the empirical findings. Thus, this

study is innovative in the sense that it utilizes the generative power of metaphors in theorizing about the empirical findings (Boyd, 1993; Knudsen, 2003). A metaphorical way for reporting findings sheds light and illustrates how the dynamic process of trust unfolds. Creative illustration may increase our understanding of both how trust develops and how it can be studied and reported as a process.

2. THEORETICAL BACKGROUND

Based on the theoretical discussion the study suggests a way of empirically studying trust development as a process. Theoretically we draw on the prior trust research that has presented some perspectives and models for elaborating a process-oriented approach. In the early 1990's process approach emerged in organization research (Pettigrew 1990, Van de Ven & Poole, 1995) and the emergence of a process. Zand's (1972) spiral model of reinforcing trust belongs to the very early theoretical models of trust development describing the strengthening of trust through interactive process of actors' expectations and actions.

Further, we draw on the recent and widely known trust models based on stage-wise development of trust (Lewicki & Bunker, 1995; Lewicki & Bunker, 1996). According to Lewicki and Bunker (1996), trust develops in three stages and bases of trust: calculus-, knowledge- and identification-based trust. The models appear progressive in nature with a tendency for linear development which we have questioned in a process view. The stage-wise models propose, for example, that the better the other party is known, the deeper the relationship between the parties will become over the course of time. To be more exact, the stage-based models may not represent "genuine" process models from the point of view of organization and management research (Savolainen & Ikonen, 2016, Langley et.al, 2013). The prior

models do not involve all the main elements of the process studies, such as the time, dynamics (interaction), and context (environment) (Langley et al, 2013). The elements will be discussed in the next chapter. Concluding the role that the prior models play in our framing of trust development for the processual study is that they provide ideas and pieces of advice representing 'the initial seeds sown' , i.e., they increase our understanding for elaborating a process approach to studying trust development (Savolainen & Ikonen, 2016).

The LMX model (Graen & Uhl-Bien, 1995, Uhl-Bien, 2006) is also utilized theoretically. It adds to the conceptual understanding of trust as a process in team relationships, as the focus in the study is on trust-building in a relational, reciprocal interaction process. The LMX model is about "leadership making" between two partners developing relationships (Graen & Uhl-Bien, 1995). LMX provides a more in-depth understanding of trust in the team leader–member relationship.

3. STUDYING TRUST AS PROCESS - MAIN CHARACTERISTICS

The three main elements characterize processes: temporality (occur in time), space (occur in place/context), and dynamics (unfold through interaction). It is back in time till the early 1990's when a discussion and theory development about a process orientation began in organization and management research, and especially focusing on organizational change research. At that time some widely quoted works were published by Van de Ven (1992), and by Van de Ven and Poole (1995) and Pettigrew (e.g., 1990). They contributed to the development of process studies. Explorative empirical process studies were made (see e.g., Savolainen, 1997 on the development of management ideology). Following Langley's et al. (2013: p.1) statement on the nature of process studies in organization and management field: (studies) "take time seriously, illuminate the role of tensions and

contradictions in driving patterns of change, and show how interactions across levels contribute to change" (dynamic activity). The context (place) also plays a role. The process approach thus adds to scientific knowledge enriching theory and methodology beyond dominantly quantitative, static and generalization-oriented research (Langley et al, 2013; cf. Lewicki, Tomlinson & Gillespie, 2006).

To further discuss the elements of process studies, temporality (time and timing) is a fundamental feature in studying processes (Langley et. al, 2013). Time has played a more or less visible role in organizations and management, as the entire organizational world temporal lenses have been used through the ages. Recently, however, time has captured different and alternative views in organization studies (Orlikowski & Yates, 2002). Time in human activity – of organizations in particular – is not necessarily considered only limited to "clock-based" (chronological, quantitative, independent of man, measurable and objective) but can be seen as "event-based" i.e., qualitative, constructed, not of measurement but of human activity and opportunity for actors to shape activity (Orlikowski & Yates, 2002). Beside the fundamental dichotomy of time as objective–subjective, Orlikowski and Yate (2002 p.686) suggest an alternative view of time as "experienced in organizational life through a process of temporal structures and structuring that characterize people's everyday engagement in the world". In other words, when recognizing the time and its influence on the social processes of human workplace practices our understanding may also deepen of how trust develops through the interactions and dynamic activity in workplaces occurring through different relationships.

Space (place, context) is the second main feature in studying processes. Trust development when understood as a continuous process of building, sustaining and restoring trust, occurs in different and changing contexts that influence on the nature of process. Even the early 'classic' work by Zand (1972) refers to a process view in a spiral which dynamically reinforces trust. A few

quite recent empirical findings of explorative contextual studies on the trust development process show that the process is complex – appearing in multiple or diverse forms, not merely linear and progressive in nature; instead, it seems that the process emerges as a kind of diverging pattern, as a kind of "wavelike" move forward and backward (Ikonen, 2013; Savolainen, 2011a; Ikonen & Savolainen, 2010; Laaksonen, 2010;).

Interaction (dynamics) is the third characterizing element of processes. Trust can be seen as an interactive, ongoing process over time (Jagd, 2010). In trust-building interactions between people occur via compatible words and actions (Lewicki & Bunker, 1996; Mishra, 1996: p.268) and via activity of actors when they undergo social change, gradual growth, contradictions, failure or the restoration of trust (Langley et al, 2013; Möllering, 2006). The concept of active trust (trusting) captures actors' involvement in the process referring to reciprocity.

4. TRUST IN THE TEAM CONTEXT

The group level is a highly interesting one for studying the trust development process. The relational dynamics within a team emerges from dynamic individual interaction, interaction between members and interaction with the team leader. Teams are widely spread and rooted in practice when organizing and performing work. We believe that a team is a fertile entity and level for studying trust building as a dynamic process, as members interact over time, develop and adapt in changing situational demands (Kozlowski & Ilgen, 2006: p.78). Teams are "complex dynamic systems, exist in a context, are rooted at the micro level, at which individual-level processes interact, intersect and manifest over time as collective team qualities" (Hackman, 2003). Team processes unfold in a task or social context while also being part of a larger organization system or environmental context.

44

Pertaining to studying teams, trust research has largely been done at the individual level while the importance of trust at the group level has been recognized (Costa, Roe & Taillieu, 2001: p.226). Both levels are relevant. The team leader is expected to build trust in the team members (peers, group level) as well as in dyadic mutual relationships between the leader and the member. Studying trust in a team requires a knowledge of the dynamics of multi-form relationships and collaborative actions. Bedwell et al. (2012: p.130) define collaboration as an evolving (social) process where two or more actors reciprocally engage in joint activities aimed at achieving a shared goal. Collaboration manifests process-orientation in dynamic exchanges between individual actors influencing and being influenced by them. The group level influence forms through individual and dyadic-level interactions of actors requiring time to develop (Kozlowski et al, 2013).

In previous team research, a common, shared vision is seen to facilitate leaders' and team members' focus on a common goal (Gillespie & Mann, 2004: p.602). Trust plays an important role affecting behaviour such as the level of cooperation (Dirks & Ferrin, 2002; Lewicki, McAllister & Bies, 1998). The cohesion of the group has a stronger impact on performance depending on the type of the team, e.g., in sports teams it is stronger compared to other type of working teams (Mach, Dolan & Tzafrir, 2010). Regarding sports teams, Dirks (2000) finds that trust in the leader has a significant effect on team performance, but at the same time trust in teammates has no effect at all. Sports teams are often hierarchically ordered and directly managed. Trust is seen as a necessary requirement for team cohesion and functioning relationships (Brower et al, 2009; Kozlowski & Chao, 2012; Savolainen, 2008).

5. EMPIRICAL STUDY - EXAMPLE OF THE PROCESS STUDY IN THE TEAM CONTEXT

5.1 Methodology

There are two main reasons for adopting a qualitative approach in the study: first, due to the scarce qualitative empirical research so far in the trust field, and, secondly, a need to advance process orientation in studying the dynamics trust development for theory development. A need exists for an in-depth qualitative approach to make process studies and unfold process patterns (Savolainen, 2011b). The study attempts to partly fulfill the need filling in the methodological gap through a qualitative approach and process orientation.

In qualitative studies, analytic frameworks link theoretical concepts and views to understand the underlying process (i.e. a sequence of events, episodes, interactions and how they relate to each other). In this case it means a process of how trust is built in two teams. Adopting a process perspective to studying trust a qualitative methodology is employed in the study. It is still scarcely used, as trust research has been mainly quantitative-based research until the early years of new millennium. The study is explorative in nature, and the empirical qualitative data and analysis play an illustrative role (cf. Orlikowski & Yates, 2002). This means that the interview data and their interpretation is reported in the form of a "thick" written description. And the findings are used to illuminate the trust-building as a process at the micro-level interaction process in a team. The study is descriptive and explorative in nature. While two teams are involved in the study and some of the team members are interviewed, the amount of data (number of informants) is considered to fulfil the purpose of the descriptive study. We also pursued producing ideas and insights for further research. It is noteworthy that it is not the purpose to generalize the findings in the qualitative study but instead to produce contextual, know-how knowledge from a real-life team cases.

5.2 Data collection, analysis and teams under study

The data were gathered from a sports team and a team of professionals in a third-sector organization during in-depth thematic and open-ended face-to-face interviews lasting from 45 to 75 minutes. Eight in-depth interviews were conducted with informants, of whom six were team members (players and professionals) and two were leaders (a coach and a team leader). By thematic in-depth interview method, the interviewees' views (expressions, experiences, beliefs, and feelings) were gained on how trust is built. Typically, for a qualitative study, the how and why (and "when") types of questions were presented to the informants. The interviews contained mainly retrospective but also real-time data.

Data are analysed holistically in the qualitative research. Thematic content analysis was used as a method of analysis. In the analysis of the interviews, we concentrated on the interviewees' perceptions (expressions of interaction, i.e. experiences, feelings, beliefs) and expressions of activities and events. This method enabled us to capture meanings in a particular situation while allowing us to understand the perspective of trust building as a process (Savolainen & Ikonen, 2016). Typically, in qualitative interpretive study several possible interpretations of the same data may be produced, but all the interpretations are potentially meaningful (Eriksson & Kovalainen, 2008). Data is analyzed, and a description of findings is made using interview excerpts (quotes) following interpretations to identify "patterns" of the process of trust development in the studied teams. The quotes from the interviews in the original study (Savolainen & Ikonen, 2016) helps the reader to find the link between the interviewee's expression and the researchers' interpretation of the data.

The focus of the analysis was on the process and dynamics of development of trust in teams. Thus, the interest in the data analysis when exploring unfolding processes lay in the flowing (moving). That is to say, the focus in on team interaction, activity and events as processes in which actors, chains of activity and

events are in continuous and mutually interacting flux (Langley et al, 2013). The handling of data requires proper coding, organizing and thematizing of the interview material. In the process study the analysis meant recognizing and identifying "logic" patterns behind the trust-building process by looking at the unfolding dynamics. This required "under the surface", in-depth investigation and understanding of the data, interpretation of the data and making a "thick" description of them. While developments (principally activities, events and interactions) may be more or less complex, the final aim was to reveal how a dynamic trust-building process develops (Savolainen & Ikonen, 2016).

The sports team, remaining anonymous in the study, represents a common ball-game team at the highest national league level. As the sports team members are hired employees, the trust-building situation is assumed to be similar to that in the context of a work organization team. The sports team comprises thirteen members and two coaches, who lead the team. The access was gained on the basis of prior knowledge of and contact and familiarity with the team (Laaksonen, 2010). These circumstances facilitated the building of trust between the researcher and the informants selected for the study (Lyon, Möllering & Saunders, 2012). In the other, professional team, the data were gathered from the team members and the leader in a not-for-profit organization that provides social services and is organized to work in multi-professional teams. Each team has its performance level set, as future funding opportunities for new projects depend on the achieved performance.

It is noted that the description of data analysis in details is not included in the paper, as the main purpose is to present (illuminate) the outcome, i.e., the key findings (features of trust development process). Data analysis procedure was explained in this chapter as an informative piece of knowledge for a reader to understand the empirical setting of the qualitative study.

6. KEY FINDINGS

The findings of trust development process and its features are illustrated through using metaphors of seed and shell, sprout and growing plant. 'The seed' is used to describe the fragile nature of initial trust. A seed shows the delicate nature of early trust building in which sensitivity and courage are needed to take steps forward. 'The sprout' is used to describe how trust emerges and is built by time and interaction when the members of the team came to know each other better. 'The growing plant' is used to describe a progress in trust-building emerging as the "opening up" when the process develops towards reaching the fruitful "moment" in progression of building trust. Finally, the trust development process in the teams was described as 'the plant metaphor' with the three "branches" seed, sprout and growing plant (Figure 1).

In the illustration summarizing the key findings in Figure 1, the trust development process is described with the help of the plant metaphor with its three metaphoric features ("branches") of seed, sprout and growing plant. The seed, generating the "shell", involves the dynamics of initial development and is manifested in protection and suspicions. This development may remain "in the shell" or emerge as the "opening up" in the progression of building trust. To reach this fruitful "moment", the shell state seems necessary for the team: initially, they have to become familiar with each other and grow in courage to go ahead while considering the risks; occasionally, they might have to remain in a suspicious and/or defensive state. In this way, if at all, the opening-up moment of building trust will be reached. However, it seems that non-progressive development may develop (low growth of trust): stagnating, breaking off or even declining. An interesting paradox emerges in the trust-building process featuring tensions between stability and growth. This means the metaphors of seed and sprout manifested in suspicions vs. opening up.

7. CONCLUSIONS, LIMITATIONS AND IMPLICATIONS

While the features and patterns of the trust development process in two teams were found in the study, the findings provide "sprouts" of unfolding dynamics of how the trust-building process emerges in the team context (how it is initiated with suspicions and protection, opening up, growth, stabilization, moving forwards and backwards, making progress, etc.). The study makes both theoretical and methodological contribution. Theoretical contribution is the key finding (outcome) of the study, illustrated as the pattern of the trust-building process through "the growing plant" metaphor (Figure 1). This illustration aims to illuminate and increase our understanding of the complexity of the trust development process. Methodologically the study contributes to how the nature and dynamics of the trust-building process can be explored and revealed. In the study, a way for studying was developed.

This study has a few limitations. The data is gathered from two teams, and a part of the sports team's members were interviewed. The study is explorative in nature which has allowed us some degree of freedom in choices of the size of qualitative data and selection of the context. The issue of construct validity (Kozlowski & Chao, 2012) is also related to the study concerning also the retrospective, indirect type of study in this case. Qualitative empirical process studies of trust development are still marginal and, thus, the basic aim has been to produce findings and insights for further research. This illustrative exploration naturally needs and deserves further consideration and scrutiny in continuing future process studies of trust, and also extension of empirical research to different contexts.

Finally, the study implies for managers how important it is for training leaders and managers to help them to see and understand their crucial role in leading with trust and how to manage the complex process of trust-building. For example, a

team leader's support and regular interaction from the very beginning could be one of the essential means for trust-building. Moreover, it is crucial for leaders to take care of those who tend to remain in 'the shell' under suspicions and protection to encourage them making progress towards 'opening up' and leading to fruitful moments for 'the plant to grow' - all for the team's and its members' successful performance eventually.

Figure 1: *Dynamics of trust-building process in the team context, illustrated as the growing plant metaphor (adapted from Savolainen & Ikonen, 2016, p. 249).*
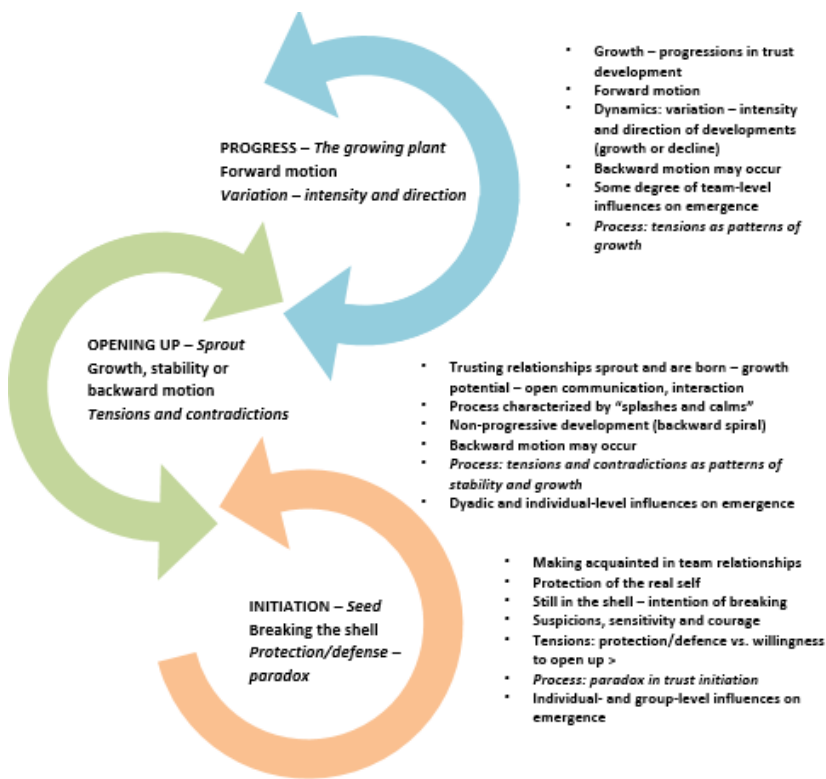
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5. FHIR Profiling for Screening Information

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Nowadays, many people want to get medical services with high quality due to ageing society, longer life span, and so on. For these reasons, many governments and medical organizations try to provide medical services. In Korea, Acquiring Health Screening Data is one of representative services which is given to people above 40 years old. Some screening services provide mobile services for users but these services don't provide structured data. This makes users not to enable their screening data access from other clinics and data exchange between other clinic organizations. To solve these problems there needs a structured model for screening data based on international standards. For these reasons, we make a structured model of screening data based on FHIR which is next stage standard on developing process. Also, to implement this model we adopted the concept of profiling which extends basic FHIR resources for specific use case.

1. BACKGROUND & INTRODUCTION

The number of medical services for elder people is increasing especially in high-income countries, due to increase of average life span. By this tendency, healthcare organizations and governments try to provide medical services with more suitable price. Meaningful Use and Obama care which is on progress by USA government is one of example. In Korea, government and medical organizations provide many medical services for elder people and one of representative service is regular screening service. Some screening center provides its own mobile screening services to get screening result. However, these mobile services don't exchange screening data with international standard format. To lower data exchanging cost, international standard should be adopted. HL7 FHIR on development progress for next stage standard is suitable for this. [1] HL7 FHIR is suitable for mobile environment for following reasons: more convenient interface, simple health exchange model, granularity services, and so on. To adopt representation of screening information with HL7 FHIR, resources profiling is required. This profiling means changing of original FHIR resource structure for specific use case. This research aims to make a screening information model based on HL7 FHIR.

2. METHOD & RESULT

2.1 Method

To make FHIR profile for screening information, we should investigate existing screening service in Korea. In Korea, regular screening service is provided for recipient of more 40 years old per two years. Recipients can get regular screening service at near clinical organizations. Figure1 show samples about screening result.

***Figure 1.** Screening Result Sample*

This sample covers following information: patient data, screening information, total opinion and observation result. Patient data contains name and social number. Screening information represents about location which screening service is held and time of screening service. Total opinion is consisted with two parts: total judgment and detailed opinion about screening results. Total judgment of screening data decides necessity of getting more advanced screening service for recipient. Detailed opinion suggests several medical action and active management which is based on screening result. Observation result shows observation value and instrument range of each screening entry so it helps to know which item has problems. Based on this sample, we developed FHIR profiled resources of screening information.

2.2 Result

After considering about existing methods of representing screening data, FHIR resources profiling has been done. We used following resources for FHIR screening profile. The list of resources is shown at table1.

Table 1: List of FHIR resources used for screening profile

FHIR resources	Usage
Diagnostic Report	Total Opinion
Encounter	Time and Location of Screening Service
Observation	Result Data
Patient	Patient Information
Practitioner	Clinician Information
Organization	Organization Information

FHIR screening profile has been developed using these resources. While performing profile we used the ClinFHIR profiling tool. This profiling tool is provided by web service and this service automatically generates the Structure Definition of each resource which contains profile information [2]. By using this profiling tool, following resources are needed to perform profiling: Diagnostic Report, Encounter, Patient. Following figure shows example structure of profiled resource.

Figure 2*: Profile Structure of Diagnostic Report*
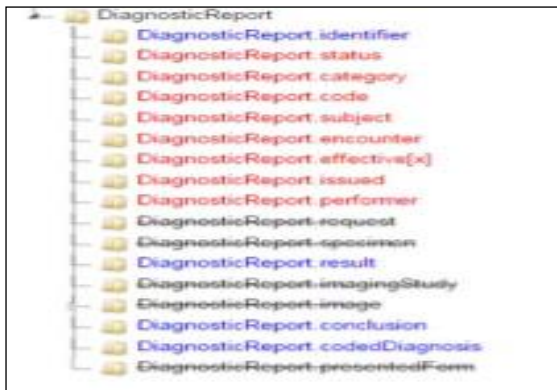
3. CONCLUSION

This research developed HL7 FHIR screening profile for Korean screening service. By this research, we expect interoperability of screening information between other organizations will be increased on mobile environment. This screening information model can be used to future FHIR based services. For the future work, this research will deal with questionnaire data of screening service. And this work will expand to other type of screening service so that we make various public health or population health information models by defining appropriate profiles and validating its conformance.

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PART II: Full Papers

6. The European Core Competences Framework (ECCF) for Future Professionals Working with Older People

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Population ageing is a severe demographical challenge in the near future. The World Health Organization (WHO 2014) stated that between 2000 and 2050, the proportion of the world`s population over 60 years of age will double from about 11 % to 22 %. Especially the rapidly growing number of the oldest age groups (80 + years) will indicate increasing need for social and health care services. The demand of skilled health and social care professionals and a lack of interest in working with older people is a common challenge for many European countries. (Aho, Arola, Mikkonen 2016.)

The European Later Life Active Network - ELLAN (26 Higher Education Institutes from 25 countries) developed together the European Core Competences Framework (ECCF) to improve new kind of social and health care expertise for professionals working with older people in the future. The research and development work was done in project funded by EU LLP-programme for years 2013-2016.

1. METHODS AND RESULTS

The development of the ECCF is based upon five studies which were carried out in different European countries during the project. The results of these studies are presented below.

1.1 Literature review of competences needed to work with older people

The aim of the literature review was to find out what is already known about the competences of social and health care professionals working with older people.

Figure 1: CanMEDS roles
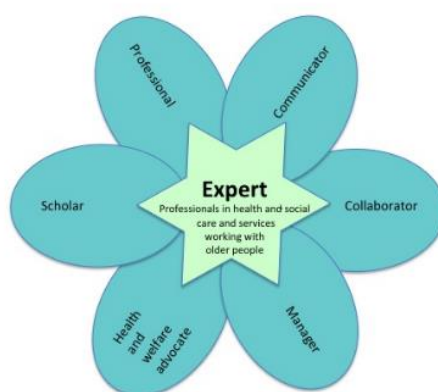
In the first round, a total of 228 studies were found and displayed in different reports. Based on the literature of the role descriptions for working with older persons, the CanMeds model was chosen to be the basis for the competences of ECCF. The CanMeds model consists of seven roles: Medical Expert (the integrating role), Communicator, Collaborator, Leader, Health Advocate, Scholar, and Professional. (Frank et al 2014.). (Figure 1).

The secondary analysis was conducted to get insight into the generic competences of professionals related to CanMEDS roles. A total of 38 studies were included in a secondary analysis. The conclusion of the literature was that the care and support of older people is very complex. A multidisciplinary team approach is necessary. Collaboration and communication are essential competences to optimize the team approach but also to respond to the individual needs of older persons. (Aho, Arola, Mikkonen 2016; Dijkman & Roodbol 2016.)

1.2 Older people's perceptions about required competences of professionals

Older people's perceptions about the required competences of professionals working with older people were collected by interviews in six European countries. The partners selected a convenience sample of 16 participants (N=96) and used semi-structured interviews for data collection. Participants were aged over 60 years old, living either alone/with family or institutionalized, without cognitive impairments, and experiencing different health conditions.

Data analysis was conducted using a qualitative method of thematic analysis. As a result of this research four major themes were identified: (1) recognizing older people's individuality as well as their personal and social background; (2) effective communication and positive relationships between professionals and older people; (3) technical competence and expertise as well as team work; (4) vocation, commitment and ethical recommendations. (Soares 2016.)

1.3 Professionals' views of competences needed to support older people

Social and health care professionals` opinions about important competencies needed in the care of older people were collected by survey also in six countries. Professionals taking part in the research were medical doctors, nurses, physiotherapists and social workers (N=885).

The results showed that professionals perceive important to encourage older people to believe in themselves, to motivate them, to acknowledge their potential, to give hope, help and support when needed. Professionalism in care of the older person was experienced as crucial. Health and social care professionals regard collaboration, risk assessment and the encouragement of autonomy as important. A central theme was accepting aging as a physiological process and not just a disease. (Felsmann & Andruszkiewicz 2015.)

1.4 Social and health care students´ perceptions on working with older people

The aim of this sub-study was to measure the attitudes of health and social care students towards older people, along with their perceptions of working with older people. Undergraduate health and social care students from five European countries (N=955), in their final year of study completed a demographic questionnaire; Attitudes towards Older People Scale (Kogan 1966) and Students' Perception of Working with Older People Scale (revised) (Nolan et al 2006).

According to the results, students' attitudes were generally very positive towards older people. The main result of the study pointed out the apparent indecision among students to work with older people or choose careers of working with them in the future. Based on the results recommendations were made to promote the attractiveness of working with older people: 1) A focus on the promotion of gerontology as an existing career opportunity, 2) The formulation of a competence framework for working with older people that will serve to articulate the skills, knowledge and expertise necessary for working with older

people to inform systems of professional education for practice. 3) The identification of innovative methods of education and training in gerontology that will also develop students' interest in the topic. 4) The promotion of care environments for older people as 'enriched', of high quality and where working with older people is valued and respected. (Coffey et al 2016.)

1.5 Identification of best practice and innovative teaching and learning methods

A study to identify *innovative good practices in education for gerontology* was carried out in order to find learning approaches which could positively contribute students to choose a career in gerontology. The literature was consulted to find criteria to decide whether the learning or training method could be called an innovative good practice. These criteria were found in Nolan's (2006) six senses model and in the description for innovation in education by Murray (2013).

Data collection was carried out by a template based on the Senses Framework described by Nolan et al (2002). The completed templates were analysed in a deductive way and the results were presented using the educational model of Miller (1990), which is a model for competence-based learning. (Schoofs et al 2016.) According to the results, innovative teaching methods that take into account the needs of students were found and structured by Miller's educational model for competence-based learning. The selected best practices will be disseminated throughout Europe.

2. CONCLUSION

The European Core Competence Framework (ECCF) is based on the view that professionals are in different roles while working with older people. The framework describes the minimum set of competences that constitutes a common baseline for all professionals in social and health care working with older people.

The competences are formulated on the European Qualifications Framework (EQF) level 6 (Bachelor) and 7 (Master). The competence framework describes the outcomes that professionals working with older people in different roles are expected to achieve and able to demonstrate. The framework was published in June 2016 and translated into several European languages. It will be used in developing curricula in social and health care professionals' education all over the Europe

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7. The exploration of constructing Robot-health concept in Early Childhood Education

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The purpose of this study was to examine the concept of Robot-health in an effort to ensure the safe and healthful utilization of Robot in childhood education. A metaphor approach was applied to review the nature and reality of robot, issues related with robot ethics and robot health. Advanced media such as robot, computer, mobile-phone used in children's daily life could impact on children's education and mental health. Among these machine, robot has special characteristics including autonomy and responsibility, and interactive with humans. Before applying robot in educational setting, we need to consider the critical aspects of robot media in the perspectives of scientific philosophy, mobile-health and ethics. However, still, there is no considerations concerning the issues related to machine -health problems. So, this study is expected to suggest some of the right directions for the utilization of robot in early childhood education by analyzing the concept of robot-health based on robot ethics and scientific philosophy.

1. INTRODUCTION

According to the rapid development of scientific technology, the opportunities of using advanced high-tech machinery could be more expanded in people's life. The development of computer helped becoming ubiquitous society which is unlimited networking is possible transcending time and space. Recently, in terms of robot is used in many parts of people's life such as business, education, medical world, and architectural area etc, there exists some prediction that artificial intelligence and robot could lead a future society. To review the prospect of robot industry, in the future, the function of robot will be more developed and even will arrive at developing third generation robot. Not simply using robot, people need to understand the ethical aspects of using robot and mental health considering the features of robot. It's time to think seriously about how technologies coexist with humans in general. Because young children today, expose technologies earlier than in the past, early childhood teachers should have the perspectives of the coexistence and harmony between human and robot and understand the ethical issues related with robot.

In early childhood education, robot-based learning(R-learning) is applied to practice creative learning activities assisted by educational robot, such as, Kibot, iRobi Q, Genibo. Educational robot can be described as intelligent robot designed for assisting teachers' teaching and other creative robot-based learning. Due to the intelligent robot has unique characteristics including mobility, interactivity, and maneuverability compare to the functions of computer, the robot has advantages of human-friendly which can help children as a friend or teacher.

The purpose of this study was to investigate the concept of Robot-health in an effort to ensure the healthful utilization of Robot in early childhood education. A metaphor analysis method was applied to examine the nature and reality of robot, issues related with robot ethics and robot health.

1.1 Robot ethics in R-learning

The origin of robot starts from the imagination of something which can replace with human and actualize integrated human abilities and technology. Image of human-like machine was found in ancient Egyptian artifact and Greek sculpture. Robot is related not only with scientific technology but a lot of different areas such art, literature, history etc.

Even the roles of robot similar with other educational media, especially intelligent robot has different roles in terms of moving, talking, and interacting with people. The intelligent robot can recognize and has the function of self- regulation of surrounding environment.

From the '90's, with the rapid development of robot technology, the range of robot application was being widened in the part of industry field, medical area, and education etc.

Recently, robot based learning (R-learning) is applied actively in the area of early childhood education emphasizing the role of robot as an advanced educational media. The media experience interacting with robot could help young children get media perception and wide and rich learning experience.

As the increasing use of robot in the early childhood classrooms, the concerns about robot ethics have been emerged. Even robot has similar function with computer, it has more advanced system in the way that robot can perceive external environment and judge the situation by oneself and move on automatically. Intelligent robot has special feature of human friendly image in the base of human affinity and positive interaction with people. Interaction between robot and human can have advantage in the aspect of emotional interaction is possible as compared with other human-machine interaction. The main educational functions of robot can be summarized as important learning instrument through motivating and stimulating exploration and learning (Kumar, 2004).

Early childhood teachers in Korea still have negative perception about R-learning even they admit robot is effective educational media (Lee, Chung, & Im, 2015). The reason is that Korean early childhood teachers have shown lower level of understanding of robot and teacher-belief in R-learning (Lee,

Kang, & Chung, 2013; Lee, Kang, & Cho, 2012). To apply R-leaning effectively in early childhood education, at first, the teachers' understanding of robot and robot ethics should take precedence.

Recently, researchers have insisted the importance of robot ethics in regards to robot has perception, judgment skills, and capacity to act which make them unique. Before handling robot in classroom activities, teachers should understand principles of robot ethics and philosophical viewpoint. While intelligence robot has advantage of taking place of human acts, it has the irreplaceable utility and risk at the same time. With the developing of robot, the issues of protecting human against possible dangers like seriously effect on health or safety were raised. This requires that the purpose, functions, and features of the robot system should be explicitly defined and consistently examined from manufacturing to application. The ideas of meaning of robot health and ethics can be different depending on one's view of robot. Therefore, there's no consensus yet on robot health or ethics in education exist. Especially, in early childhood education, the research should focus on the ethical problems occurring from relationship between child and robot. It is needed to have ethical standard to follow when children use robot such as treating a robot as a friend or companion, not using of bad purpose or not remodeling illegally. This study tried to find out definition and meaning of robot health and ethics in relation with robot application in classroom activities.

1.2 Metaphor approach

To analyze the robot health concept with abstract, unfamiliar nature, metaphor analysis could be useful tool to utilize. Metaphor approach helps people express their ideas about theme using concrete object and analyze the implicit meaning in terms of the expression. Metaphor can be described by cognitive, linguistic, and empirical conceptualization process which can have great effect on people's perception, thinking, and behavior patterns (Tait-McCutcheon & Drake, 2016). Also, it could encourage exploration of person's cognitive perception and

provide insight of meaning behind text in relation to observable concept (Saban, 2004; Woodhams, 2014). Therefore, metaphor helps people understand and express phenomenon or concept even though it is hard to describe specifically. One way of qualitative research method, metaphor analysis has advantage of investigating one's beliefs and attitude related with specific situation and ideas (Fabin, 2013). Recently, metaphor approach has used for analyzing educational phenomenon and concept to increase teachers' professional development in the way that metaphor find rationale about teachers' belief system.

This study tried to examine early childhood teachers' belief of robot ethics to provide healthful media environment for children using metaphor approach.

2. RESEARCH METHOD

2.1 Participants

This study collected metaphor data from 50 Korean early childhood teachers working at public and private kindergarten. Among the collected data, 20 data were excluded since the data doesn't meet the criteria of analysis. The final subjects for the study were 30 teachers who included for the meaning analysis and statistical analysis. The participants' demographic information is shown in Table 1.

Table 1. Demographic information(N=30)

Variables	Categories	N	%
Type of ECE setting	Private k	22	72
	Public k	8	28
Teaching experience	More than 5yrs	16	52
	Less than 5yrs	14	48
Age	20s	21	70
	Over 30	9	30
Total		30	100

2.2 Instruments

To analysis about early childhood teachers' metaphor and the reasons, the researchers developed survey questions such as "The robot ethics is ~~~~, because ~~ ". Teachers can freely describe what they think about robot. Before answering the question, the researcher explained about the method of metaphor to increase the understanding of metaphor and provided some examples which is not related with the theme of this study. To enhance the validity of this study, we examined of preliminary questions with 1 early childhood professors and 5 teachers.

2.3 Data collection

Data collection process has proceeded for two months from May, 2016 to June, 2016. Prior to investigate, the researcher explained specifically about the purpose, research method, research period of the study and got permission from directors of kindergarten. The survey was carried out with the 50 teachers who agreed to the study.

2.4 Data analysis

The collected data was utilized for analyzing according to the research question. The procedures of analyzing data in metaphor approach include the process of coding, classification of metaphor, developing category, and find theme.

2.5 Coding

Firstly, open coding was performed for making metaphor category using collected answers. The answers of not providing metaphor and the reasons of metaphor and was excluded from the analysis.

2.6 Classification of metaphor, developing category, determine theme

After coding, the appropriateness of analysis criteria was examined. The metaphor from the data was 50 individually and 11 categories. And 3 subjects. The specific content of metaphor about the image of robot health of early childhood teachers were as follows (Table 2).

Table 2: Metaphors for analysis (N=30)

Metaphor (n)	Subject
useful and hopeful being (5)	
friend but unknowable (4)	Understanding robot being
AlphaGo's fear (10)	
another being of me (2)	
'close but fearful'	
'a strange friend'	Relationship with robot
'obey my command'	
'human problem solving'	
'robot is our hope and future'	
'future imagination'	The roles of robot
'protect human and protect robot'	

2.7 Validity and reliability

To ensure the content validity of this study, the researcher got supervised about the categories and subjects of metaphor from the Korean language major. Also, to ensure the reliability of the study, the interrater agreement was checked. The reliability of this study was .95.

3. RESULTS

3.1 Understanding robot being (friend but fearful)

12 subjects responded to the category of 'friend but fearful' in understanding robot being. Early childhood teachers referred robot being to 'beyond me there', 'alphaGo and Lee Se-dol', 'alphaGo horror'

'beyond me there': I heard that in this time, intelligent robot can think, communicate, interact with people and move by itself. So, if the intelligence of robot is superior to me, I can't control it.

'alphaGo horror': because Lee Se-Dol was defeated in the competition between AlphaGo and human. In the future, robot with artificial intelligent would win humans.

In the category of 'understanding robot being', a lot of metaphor expression has reported in terms of robot has intelligence and someday it can threaten human. The teachers

recognize robot being as a kind of machine but has some feature what human has. They consider intelligence of robot could be developed at high speed because of the development of scientific technology. On the one hand, the teacher accept robot as a friend to play with, on the other hand, they have fear of the functions and intelligence of robot in the way that robot could attack human world with high level of intelligence.

3.2 Relationship with robot (near but a source of dread)

'close but fearful': Because the appearance of robot resembles a human, feel more friendly and comfortable than other machinery like computer, projector, etc. But, the robot has powerful intelligence and someday it can beat me…..so, the existence of robot can threat to humans.

'a strange friend': I consider robot as a friend, but I don't understand how it could think, interact with people and what kind of system in it.

'obey my command': robot has to obey to human since robots are constructed by the instructions of human. So, we can tell that their relationship could be described as master and servant.

The early childhood teacher defined robot as a friend because they look like human but they are having hard time understanding robot. It is because when the teachers interact with robot, they don't know the robot's reaction mechanism. Therefore, the teachers believe that robot can be a friend with human when there is better method of understanding their behaviors. Also, the teachers have assumptions that robot don't just respond in a passive way to human but is possible having interrelationship with human.

3.3 The roles of robot (our future imagination)

'robot is our hope and future': robot can be our hope and future because it solves difficult problems what human face with

'future imagination': in the future, robot can enrich people's life and extend imagination in terms of making people think about future.

'protect human and protect robot': in some parts robot need

to protect human, and in another side, robot should be protected by human.

The teachers think that robot is a tool for beginning to explore a future society. Robot can help people find answers to the many problems facing our environment. However, people also need to protect robot in terms of not abusing and not using bad purpose.

4. DISCUSSIONS AND CONCLUSION

Today, as we can't imagine living a life without smartphone, the era is coming when we can't live without robot. Even robot has developed for the replacement of man's labor by machinery, the rapid progression of robot industry was made people think of robot ethics concerning healthful use of robot. In this stage, to apply r-learning in early childhood education appropriately, firstly, the teachers need to understand the meaning of robot existence, and the importance of coexistence between human and robot. Therefore, this paper examined the metaphor of robot existence for the early childhood teachers to figure out the concept of robot ethics related with robot health in psychological aspects. The answers of thirty early childhood teachers' metaphor questions were analyzed using qualitative research method.

From the metaphor of teachers, we can infer that they accept the existence of robot and recognize the positive roles of robot to human. On the other hand, they want to have knowledge of characteristics of the robot's working system which can relieve anxiety.

In the future society, the utilization of robot can be generalized in life. With convenient aspects of robot, we need to think of the ethical problems related with human and robot coexistence. Because the scientific technology is developing rapidly, intelligent robot will be changed into more advanced forms in the near future. According to robot expert, robot technology could pose serious challenges for humans. In this stage, early childhood teachers should have the perspectives about the meaning of existence of robot and how human face with future problems

provoking by robot.

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8. Entrepreneurial Environment and Ecosystem Health

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This research aims to examine under what conditions entrepreneurial ecosystem has the highest performance. We employed productivity, robustness, and niche creation as measures for the performance of an ecosystem. (1) regarding productivity, degree of financial supports from government has an inverted U shape relationship and fertilization of (external) supporting entities has a positive relationship with the productivity of the entrepreneurial ecosystem respectively, (2) with respect to robustness of entrepreneurial ecosystem, level of government financial support has an inverted U shape relation and institutional system to help failed entrepreneurs recover from their past experience has a positive relationship with the robustness of the ecosystem, (3) regarding niche creation, openness and domestic and global connectedness has a positive relationship with the niche creation of the venture ecosystem.

1. INTRODUCTION

Ecosystem refers to both a place where members of living organism go through the cycle of birth, growth, and death, and interactions of its members with others and their surrounding environment. Many scholars in the area of management, these days, are

getting an insight for understanding the behaviors of its members and interdependent nature of the system from biological ecosystem. Though biological ecosystem is not exactly same with business ecosystem, it provides meaningful insight to understand the behavioral patterns of its member and interactions of an ecosystem. Strategic management, specifically, are shedding a special attention to this concept along its natural developmental process. Since its initial development in 1960s, strategic management theory specifically is swaying like a pendulum from micro perspective to macro and macro to micro one. It started with setting the direction of an organization in terms of organizational policy, to analyzing an industry structure for identifying the attractiveness of an industry by taking a macro perspective in 80's, and redirected its attention to internal core competence of an organization (again micro perspective), to this current issue of business ecosystem perspective by macro perspective again.

Part of the reason for the application of ecosystem perspective on strategic management comes from the development of an internet that enables an organization to overcome the limit of both time and place. An enhanced connectivity among the members of the system and its members' relation with environmental entities Remarkable increase in correctness, speed, and quality for the management process provides companies a strategic advantage over their competitors. Wall-Mart, for example, is a good example for enhancing their competitiveness in terms of connecting customers' need to suppliers' network. Network effect is another good source of competitive advantage by having a more users to be included in firm's network, resulting in an enhanced firm's value (Leibenstein, 1950).

Network-based view of an ecosystem raises the question of how we can differentiate good startup from not-so-good startups. Since startup companies are disposed to the liabilities of newness in their survival efforts, entrepreneurial ecosystem, e.g. government, VCs, mentors, and universities, that could help new ideas transformed to be a good product plays a key role for the survival and growth of the promising new startups. Government supported startup promotion program is, however, having chronic problems to support only an early stage of the new startups. Korean government's effort to nurture a

unicorn venture has not been successful yet. Director of Korean Innovation Center in Silicon Valley recently mentioned our efforts for nurturing a new startup lacks an expertise in selecting potential candidates to survive in a Silicon Valley which is functioning like a business jungle and providing a mentor's counsel for the new startups. In addition to this expertise issue, each ecosystem itself needs its own evolutionary vision to guide its members to design a socially responsibly entrepreneurship. New idea for building a sustainable innovative community is highly recommendable for each ecosystem to be evolving into a happy, healthy and sustainable entity. Korea Academy of Management recently published a book suggesting this vision as a remedy for curing Korean business practices that have been put into practice for the past 40 years. Asian Entrepreneurship Award, which has been devised by Tokyo University with the support of Japanese government and private real estate company, Mitzui Fudosa, has been awarding new venture ideas that are based on socially responsible technology. Business idea with functional excellence is very important, but it needs a human guidance to build a sustainable community.

For large established company to be adapting to changing environment with flexibility, sound startup ecosystem is necessary. If new startups are nurtured independently, their intensity of efforts and the level of motivation, which determine their absorptive capacity will be increased and these small niche players are essential for maintaining a sound business system. Korean Chaebols have been very successful in catching-up the advanced companies by internalizing the production of components and capital utilization, thus forming Korean specific Chaebol structure with unrelated diversification. 'From chip to ship' is a typical naming of Korean Chaebol. While Korean Chaebols are diversifying into several business areas, their relationship with their vendors are not that reciprocal. They wanted their suppliers to work just for themselves, not allowing SME to develop their own developmental agenda, which reduce the SME's survival probability directly, weaken Korean Chaebol's competitive capabilities to compete with other

potential entrants with cost leadership strategies like Chinese competitors.

For a startup ecosystem to be healthy and productive, 7 constituents of entrepreneurial ecosystem need to do a proper job what they are expected to perform. Those 7 entities are as follows: Government, Universities, Investor, Mentors, Service providers, Large companies and Entrepreneurs. Feld (2012) argues specifically that among all these members, leadership role needs to be performed by entrepreneurs and government, universities, and investors need to perform the feeder role in terms of providing financial resources, human resources. Mentors are expected to provide a high level of support for decision making and solving difficult problems. If government is, for example, trying to lead the startup companies and its entire ecosystem, startup companies and its surrounding ecosystem suddenly fall into a bureaucratic x-inefficiency trap. Speedy decision making, prompt reaction to the ever changing technology, on-time solution needed to be made by entrepreneurs will be gone with the government control. The following diagram is showing the mutual relations startup companies will be having with its ecosystem members for establishing a healthy entrepreneur econsystem.

Arguing the need for connecting and cooperating system for regional entrepreneurial ecosystem, Park (2015) maintains the following 6 that Daegu Metropolitan city needs for building a healthy start-up community. 1) Establishing an on-off line system for combining space, network, and investment. On-line start-up support portal system, and Co-working space would be a good example. 2) Developing a combined – cooperative package programs for start-ups' whole life cycle, operated by all relevant support institutions. 3) providing an educational support and nurturing an environment for financing a start-up capital (eg. cloud funding. joint IR etc.).

4) Nurturing start-ups in terms of CSV-based open innovation, activating cooperative relations between established companies and start-ups. 5) Educating a creative-convergent style entrepreneur with liberal arts

perspective through university education. And finally, formulating criteria for bona-fide start-up failure and enlarging an amount of funding for re-challenging start-ups.

Thus, this research aims to identify the conditions where healthy entrepreneur
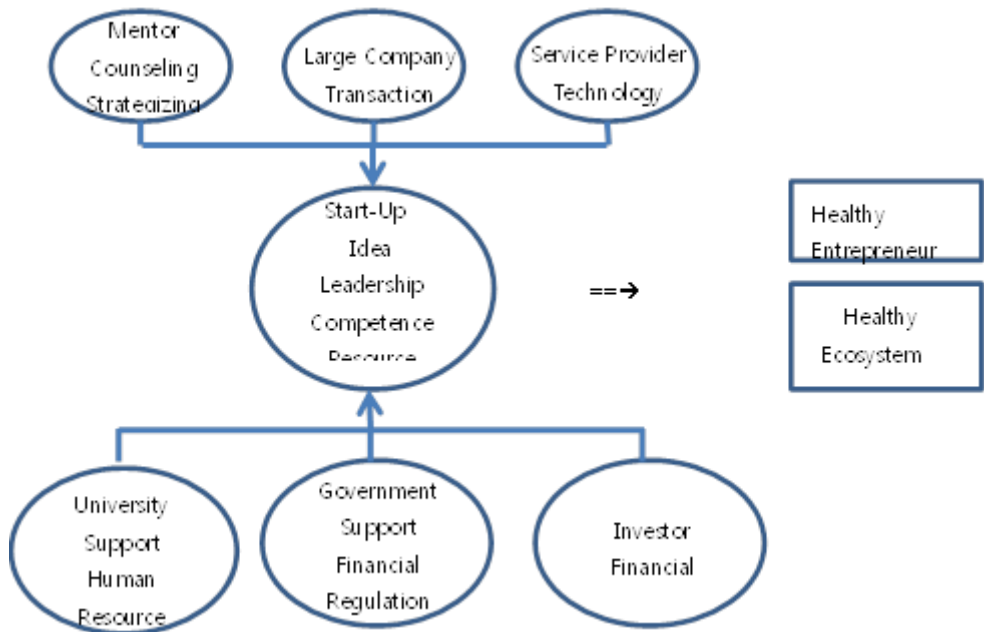
ecosystem could be established in terms of productivity, robustness, and niche creation along with Iansity & Levien (2004).

2.   HYPOTHESIS DEVELOPMENT
2.1. Productivity of Entrepreneur Ecosystem

The productivity of an entrepreneurial ecosystem could be defined in terms of the number of entrepreneurs who start their own business in a specified area. Iansiti & Levien (2004) measured business ecosystem's productivity in terms of aggregate ROIC (return on invested capital) of its members, which captures the ratio of return on invested capital. Productivity, by definition, refers to a ratio of input versus output. Start-up ecosystem's productivity could be depending on several factors including input, transformational process, and output factors. Since new start-ups are facing liabilities of newness, it needs special care for its early

take-off. Different ecosystem provides varying level of support to its members to boost their productivity. In addition to this measurement, we employ the number of start-ups for a specific time period as one more criteria for checking the productivity of a start-up ecosystem. One ecosystem may have high birth rate while others may not. These differences will make different conditions and developmental process for each ecosystem. We are interested in how government support relates with the productivity of start-ups in an ecosystem.

2.1.1. Inverted U shape relationship between government support and productivity of an ecosystem

Government support is likely to relates positively to a certain point but relate negatively after that point to start-up ecosystem productivity. Simply put, the relationship between government support and ecosystem productivity is likely to have an inverted U shape.

Since start-up companies are young and small, they all face the liability of newness. Government financial support provides resources for overcoming these difficulties at their initial growing stage. The resources could be used for hiring competent staff members to solve an administrative and market problems, funding for a new research project that is critical for the survival of the startups, engineering problem solving. Creative new ideas can shape its form when they got supported by subsequent investment.

Once they got over from the initial challenges, new startups need to continue to develop new products and have an advanced management system to support innovative behaviors of the company. For them to do these critical jobs by themselves, they need to be independent from government intervention, which usually comes with financial support of the government. Government leaders are living in a hierarchical world, not in a networked world, much more control oriented and focus more on top down approach, policy oriented and rationalize what they are doing for the public, not much problem solving oriented (Feld, 2012). If startups are stick to receiving financial support from the government, they are forced to follow administrative requirements, which is

unnecessary for new product innovation. These hinder the free flow of ideas within the company for the continual innovation to adapt to an environmental change. Then, the newly born startups become spoiled by government support and have not independent capability to stand alone to overcome the challenges.

For these reasons, we hypothesize the positive relation for the initial stage but negative relation for the later stage between government support and ecosystem productivity, put in other words, inverted U shape relation between variables.

2.1.2. Fertilization of supporting entities has a positive relationship with entrepreneur ecosystem productivity

Fertilization of supporting entities refers to a variable measuring the degree of ecosystem richness in terms of the amount and diversity of supporting fund and resources for startups. Diverse P2P support systems such as government, VC, accelerator, angel, cloud funding, vitalization of internal venturing etc. are good examples. While past research on the degree of fertilization using quantitative data have been limited to examine the existence of it, we are interested in examining how the performance level vary depending on the degree of fertilization of supporting entities. Depending on different country condition, VC, for example, would be in different developmental stages, and would provide varying scope and quality of consulting service. If an entity within an ecosystem has specific guidelines and several ways for supporting startups long with their developmental stages, timely and relevant tactical assistance and resource provision will result in decreased cost, shorter time to market, and increased performance, which presumed to be contributing the increase in productivity of the ecosystem. The quality and scope of services that each service provider provides will also determine the output level. These lead us to posit the positive relation between fertilization of supporting entities and entrepreneur ecosystem productivity.

2.2. Robustness of Entrepreneur Ecosystem

Robustness refers to an ecosystem's ability to provide durability for

its constituents to survive environmental turbulence (Iansiti & Levien, 2004). startup is, specifically, very vulnerable to an internal or external disruption because of its unpreparedness of the management system, including internal process, team work, work experience etc. Death valley is another term that describes the crucial difficulties new start-up has to go through for an early take-offs. Entrepreneurial ecosystem is important for this reason to help new startup to survive the disruption. Iansiti & Levien (2004) suggested the survival rates of ecosystem members either, over time or relative to comparable ecosystem for measuring a business ecosystem. We can employ the same measure for tapping the robustness of start-up ecosystem.

    2.2.1. Government financial support has an inverted U shape relationship with the robustness of an entrepreneur ecosystem

    2.2.2. institutional system to help failed entrepreneurs recover from their past experience has a positive relationship with the robustness of the ecosystem.

2.3. Niche Creation

Regarding niche creation, openness and domestic and global connectedness has a positive relationship with the niche creation of the venture ecosystem.

3. Methods : To be continued

By exploring multiple key factors that affect ecosystem health and assessing health of venture ecosystem based on those major elements, this study advances our understanding on under what conditions we can better develop venture ecosystem and how those conditions contribute for healthier entrepreneurial ecosystem. Also, this study enables us to obtain theoretical and managerial implications on the multi-directional impacts of institutional, financial, and capital environments on the venture ecosystem performance.

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9. Emotional Intelligence and Its Influence on Organizational Citizenship Behavior and Job Stress: Moderating Role of Authentic Leadership

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1. INTRODUCTION

"Emotional Intelligence can be learned and its competencies if learned will yield in outstanding performance work." "IQ makes up only 20% of our professional success and the rest 80% depend

on our ability to utilize EQ" (Goleman, 1998b). Such statements allowed Daniel Goleman, author of New York Times' bestseller and synonymous with the term, "Emotional Intelligence", catapulted the concept into mainstream America and worldwide. Businesses were looking for new ways to innovate and motivate its employees. Developing and utilizing emotional intelligence in its employees served as newly found potential solution.

Such quality work life initiatives were taken up by conglomerates such as Samsung, LG and Hyundai to name a few and flexible work arrangement and increased need for cooperation, communication and team work became integral part of work arrangements.

As such, previously valued qualities of objectivity and controlled emotions hindered individuals from adapting to the newer, more open and flexible and collaborative working environment leading companies to re-examine how to motivate and retain satisfied employees.

Emotional Intelligence(EI) answered as possible solution.

2. LITERATURE REVIEW AND HYPOTHESIS

Since the mid 1990's, EI has shown to increase self –efficacy and motivation in both individuals and teams and in turn lead to increase in Organizational Citizenship Behavior and Job Satisfaction amongst the employees.

In healthcare, its results indicated that Emotional Intelligence framework had negative effect on Job Stress amongst nurses (Kim, 2014).

- Hypothesis 1 is that Emotional Intelligence will exhibit a negative (-) statistically significant relationship to Job Stress.
- Hypothesis 2 is that Emotional Intelligence will exhibit a positive (+) statistically significant relationship to Organizational Citizenship Behavior.

According to research that Authentic Leadership is not a product of external influence but indirectly promoting employee authenticity by generating a sense of ease regarding self-expression, thereby providing environment in which followers can create their own meaning (Algebra & Lips-Wiersma, 2012).

- Hypothesis 3 is that Emotional Intelligence and effect on OCB will be moderated by Authentic Leadership exhibited in managers perceived by followers (nurses).
- Hypothesis 4 is that Emotional Intelligence and effect on Job Stress will be moderated by Authentic Leadership exhibited in mangers perceived by followers (nurses).

Figure 1: Research Model
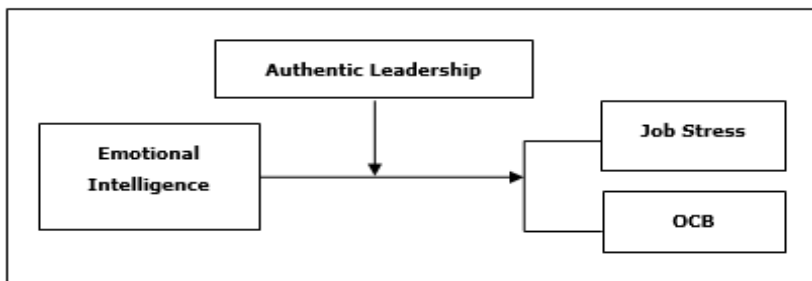
3. METHOD

3.1 Data Collection and Research Samples

A total of 260 questions were distributed to two hospitals in Pusan and 241 questions were returned (92.7% response rate). The data indicates majority of questioned nurses were 21-25 yrs making up 40.5% and less than 3 yrs of work making up 49.1% and majority of them (237; 97.9%)were women. Except for that, Regular ward making up 55.4%, and no married takes up 75.8%.

4. RESULTS

4.1 Confirmatory Factor Analyses (CFA)

Confirmatory Factor Analyses(CFA) were conducted using AMOS 21.0 As shown in Table 1, results are as follows.

Table 1: Results of reliability, CFA (Confirmatory Factor Analysis) and Inter-Construct Correlations

Variables	Questions	Estimate	S. E	C.R	P	AVE	CR	EI	OCB	JS
EI	EI10	1.000						1	.468**	.181**
	EI11	1.105	.100	11.012	.000					
	EI12	1.088	.094	11.576	.000					
	EI13	1.173	.098	11.944	.000	.749	.922			
OCB	OCB10	1.302	.113	11.521	.000			.468**	1	.287**
	OCB11	1.373	.115	11.944	.000					
	OCB12	1.139	.109	10.447	.000					
	OCB14	1.000	.092		.000	.705	.916			
JS	JS8	1.000								
	JS10	1.000	.126	8.033						
	JS12	1.015	.120	7.477						
	JS13	.898	.126	8.362	.000	.662	.914	.181**	.287**	1
적합도	x^2/d.f.= 2.101, CMIN= 107.142 d.f.= 51, p=.000, RMR=.037, GFI=.931, AGFI=.895, NFI=.919, RFI=.895, CFI=.955									

Legend: x2= chi square value, df- degree of freedom, RMSEA- root mean error approximation (must be <008), RMR- root mean square residual (must be <.08), GFI- goodness of fit index (must be >0.9, NFI- n armed fit index (must be >0.9), CFI—comparative fit index (must be >0.9)
** P<.001

4.2 Hypotheses Testing

Hypothesis 1 - Emotional Intelligence will exhibit negative (-) effect on Job Stress did not show statistical significance. (estimate .002, CR .018, p= .986).

Surveyed data collected population had significantly higher turnover rate compare to other hospitals in the area due to economical and internal organizational changes. In this case, the role of Emotional Intelligence may not influence greatly in reducing Job Stress. Therefore, hypothesis 1 did not show statistical significance.

Hypothesis 2 - Emotional Intelligence will exhibit positive statistical significance to Organizational Citizenship Behavior was validated (estimate:.571, CR:5.622., p=***). Higher one's Emotional Intelligence, stronger the influence on Organizational Citizenship Behavior such as organizational focused changed behaviors such as improving work process (OCB question 10) or making improvement suggestions (OCB question 11).

Hypothesis 3 - In the higher score Authentic Leadership group, the data did not validated(estimate: 002, CR: 018) and lower Authentic Leadership model group(with scores of 3 or less), data did not support(estimate: 0293, CR: 1.742) as well. The reasons are similar to mentioned above.

This coupled with already existing intense hospital setting may have put nurses at greater stress level than other healthcare settings facing constant change and pressure of managing day to day operational roles and responsibilities.

Hypothesis 4 - Emotional Intelligence will positively (+) influence change oriented OCB was supported with (estimates of .565, CR: 2.72, p=000) in both high AL(mean at or above 3) and lower (mean or lower 3) group. EI and OCB moderated by subordinate's view of manager's Authentic Leadership hasn't been researched

Figure 2: Structured Equation Modeling: Research Framework (with significant relationships). Model 1 (Lower AL score)
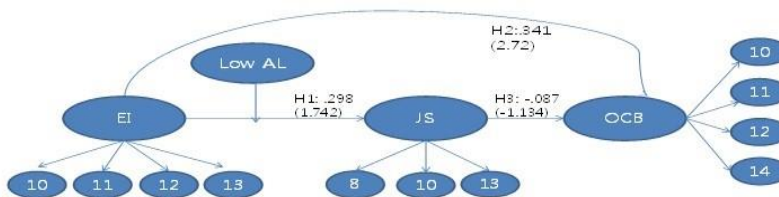
Model Fit Statistics: Chi-square/d.f= 1.928, RMSEA= .062 GFI= 0.914, NFI= .928, CFI= .964 RMR= .029,
*= p<.05, **= p<.01 ***= p< .001
( )= C.R. value

Figure 3: Structured Equation Modeling: Research Framework (with significant relationships). Model 1 (Higher AL score of 3 or above)
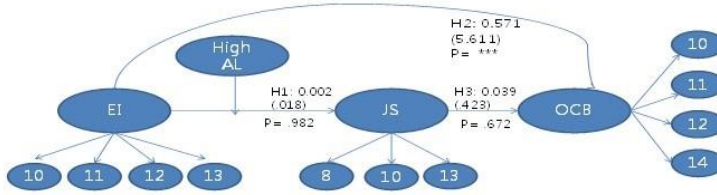
Table 2: SEM Path Analysis Results: Regression weights for Model1(AL lower than3)

Hypothesis	Pathway	Estimate	S. E	C.R	P	Hypothesis S/NS
1	EI→JS	.298	.171	1.742	.081	Not Supported
2	EI→OCB	.341	.125	2.720	0.007	Supported
3	JS→OCB	-.087	.077	-1.134	.257	Not Supported

Table 3: SEM Path Analysis Results: Regression weights for Model2(AL lower than3)

Hypothesis	Pathway	Estimate	S. E	C.R	P	Hypothesis S/NS
1	EI→JS	.002	.102	.018	.986	Not Supported
2	EI→OCB	.571	.102	5.611	***	Supported
3	JS→OCB	.039	.092	.423	.672	Not Supported

5. CONCLUSIONS AND LIMITATIONS

This study was significant that Authentic Leadership of managers had positive influence in Emotional Intelligence, especially use of emotions to facilitate performance.

Authentic Leadership(internal moral perspective, balanced processing and rational transparency) all strongly correlating with aspects of Organizational Citizenship Behavior. This allows for conclusion that if a manager can show Authentic Leadership behaviors with being transparent,(i.e. encouraging others to express their emotions) and with balanced processing(listening to others, analyzing facts before making decisions, being open minded) and internal moral perspective(clear values and

following similar behaviors based on such values, respecting other's values) it can help increase Organizational Citizenship Behavior in employees. It is worth nothing that the surveyed data were derived from Nurses. The application of leadership traits are commonly found in corporate business settings but even in healthcare the need for leadership development and training is highly recommended as its industry workers are constantly under high pressure situations at higher frequency than at other industries.

This study has some limitations.

First, the study was conducted in Pusan metropolitan city only and it did not capture wider audience. Also, majority of the surveyed population were young women in their 20's with less than 3 years of work experience. Thus, the sample data did not capture wider age and work experience.

Seconds, this study was self-administered questionnaire format thus individual bias and opinions may have hindered.

Thirdly, the Authentic Leadership portion of the questions is perceived view of one's leader by followers and individual's opinions may have influenced results.

Fourth, the hospitals may have their own culture and practices where in this surveyed population had recently undergone restructuring and had shown higher turnover rate than other hospitals in the area. This may have influenced variables like Job Stress and Emotional Intelligence.

Lastly, other environmental factors and working conditions were not taken into consideration when administering the questionnaire.

However, this research has improved on other studies by examining influence of EI and Authentic Leadership relations as it relates to both Job Stress and Organizational Change Behavior. This research calls for further examinations of Authentic Leadership and Job Stress, Retention and influence on Organizational Behaviors such as Engagement and Performance.

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10. Individual Intention to Use Information Technology at Smart Hospital in Korea:

Electronic Medical Record Adaptation

Prospective

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Healthcare industry becomes one of the most important parts of modern economies because hundreds of thousands people visit hospital, clinics and health-center for wellbeing every day. The quality and super-specialized services, government policy and medication price has direct impact on cost of healthcare to individual. Information systems (IS) and implementation of information technology (IT) have vital role in the management of healthcare costs, quality of care and service efficiency. Healthcare Information and Management System Society (HIMSS) focused on better health through IT. Seoul National University Bundang Hospital (SNUBH) is also honored by HIMSS Stage 7. At SNUBH, kiosks and computers replace people and paper documents. The aim of this study was to investigate individual intention to use IT at Smart Hospital, SNUBH. Five-point Likert scale (from strongly

disagree to strongly agree) was used to evaluate the responses to the questions concerning implementation context, technological context, individual context and technology acceptance. To empirically test the proposed research model paper-based surveys from patient, doctor, nurse and other healthcare professional have been collected. SPSS 22 was used to analyze the collected data. The result showed that the intent to use electronic medical record (EMR) involves a positive attitude and user's viewpoints. A positive attitude is a combination of highly perceived usefulness, highly perceived ease of use, trust and positive user's viewpoints. Our findings identified that system compatibility is the first facilitator to shape a positive IT attitude. We conclude here that, IS has great potential to reduce healthcare costs and improve outcomes.

Keywords: Healthcare industry, information systems, information technology, electronic medical record and healthcare cost

1. INTRODUCTION

Healthcare industry becomes one of the most important parts of modern economies because people spend billions of dollars every day at hospital, clinics and health-centre for wellbeing throughout the world. Quality and super-specialized healthcare services, government policy and medication price has direct impact on increased cost of healthcare. Minimizing cost and maximizing benefits for patient become important topic for the scientist to research. Information systems (IS) and implementation of information technology (IT) have vital role in the management of healthcare costs, quality of care, and efficiency of treatment [1-3]. IT has transformed virtually every aspect of our lives including healthcare system. For example, it facilitates many succession of work like order entry, workflow management, report writing, scheduling for treatment, billing, management of inpatient and outpatient units etc. The recent IT

helps clinicians to reduce clinical errors, supports health care professionals (e.g. availability of timely, up-to-date patient information), increases the efficiency of care (e.g. least waiting time for patient) and improves the quality of patient care [4].

Electronic medical record (EMR) is a systematic collection of electronic health information about an individual patient or population [5]. EMR is designed to improve communication among providers within and between organizations by computerized collection, use and storage of patient information and may facilitate guideline compliance and decision support [6]. EMR system is one of the most important components of health information system (HIS). HIS collects data from health sectors, analyses data and ensures their overall quality, significance and appropriateness, and converts data into information for health-related decision-making [7]. Literature review showed that 45% of HIS were rejected due to user resistance [8-10]. It was reported that misfit between system and clinical practice were more common. So, it is important that the new technology must fit with updated clinical environment and accepted by individual user.

Healthcare Information and Management System Society (HIMSS) focused on better health through IT. HIMSS leads effort to optimize health engagement and care outcomes using IT. HIMSS leads effort to optimize health engagement and care outcomes using IT [11]. The HIMSS analytics 7 award honors hospitals operating in a paperless environment and representing best practices in implementing EMR. Seoul National University Bundang Hospital (SNUBH) is also honored by HIMSS Stage 7. At SNUBH, kiosks and computers replace people and paper documents. All of the medical charts have been digitalized, along with the personal data of the patients. Patients make reservations, pay and browse their medical history through kiosks and smart devices. Doctors and nurses know exactly how many hours or even minutes they have for each and every patient. Even during meetings and rounds, what they each carry is a smart tablet, not a pile of documents and pens [12]. The aim of the study is to investigate individual intention to use IT at this smart hospital like SNUBH.

2. THEORETICAL BACKGROUND, RESEARCH MODEL AND HYPOTHESIS

The continuing revolution in IT has moved beyond the realm which makes individual everyday life easy. Even though much scientist effort has been intended to understanding user acceptance of new technologies, it is relatively unidentified what motivates individual in making technology acceptance decisions [13]. The theory of reasoned action (TRA) is a model for the prediction of behavioral intention, straddling predictions of attitude and predictions of behavior. Later Ajzen [14] integrated perceived behavioral control with TRA to predict individual intention and behavior that are not completely under discretion control. In the theory of planned behavior (TPB), Ajzen [14] believed that persons with a higher perceived behavioral control are more likely to form a strong intention to perform a given behavior than those who perceive that they have lower control. Based on the concept of the TRA, Davis [15] developed the technology acceptance model (TAM) to predict user acceptance of IT. TRA, TPB, and TAM have provided the theoretical background for many studies on understanding intention toward IT usage and even for many scientists incorporate various theories into their individual behavioral model [16, 17]. Acceptance of IT by individual professionals can be predicted by three contexts that are individual, technological and implementation contexts [18]. Chau and Hu [18] defined implementation context as "the specific professional environment where the investigated technology acceptance takes place". The implementation of a new technology in the workplace could cause changes in the working style which is observed as a key challenge for the user and the organization. Therefore, the implementation context plays an important role in influencing individual to adapt new technology.

The proposed research model is based on individual intention to use IT at smart hospital in Korea. In this study, we adopted a three-layered framework [19] to understand individual attitude for IT adaptation. Figure 1 showed proposed research model of

this research based on implementation context, technological context, individual context and technological acceptance.

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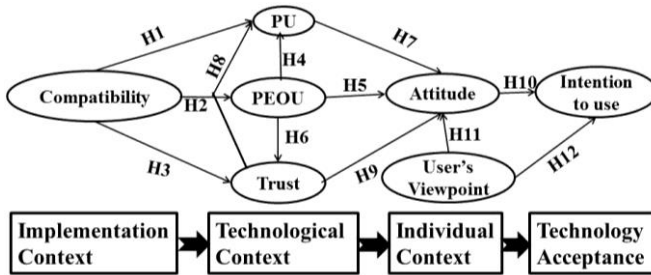
2.1 Implementation context

The implementation context refers to the particular professional setting where the target technology is supposed to be implemented [18]. Previous study suggested that implementation for a particular technology may be assessed in two perspectives: compatibility of the adopting technology and peer influences [18]. When a user observes that a particular IT is compatible with his working style, then he will realize the usefulness or relative advantage of using it [19, 20]. IT system that is consistent with its user's preferences is more likely to be perceived as an enabler of work performance [21]. Everyone desire for compatible technology [22] and perception of greater compatibility would lead to greater trust in the system because the user would be more willing to rely on the functions provided by it. Previous study discuss that system quality has a significant influence on user trust [23]. All-to-gather compatibility may favorably affect perceived usefulness, preserved ease of use and trust. Based on above arguments, following hypotheses have been proposed:

H1: The degree of compatibility of EMR to individual working tendency has a positive effect on his perceived usefulness of the system.

H2: The degree of compatibility of EMR to individual working tendency has a positive effect on his perceived ease of use of the system.

H3: The degree of compatibility of EMR to individual working tendency has positive effect on his trust of the system.

2.2 Technological context

Moore and Benbasat [20] recommended that perceived rather than objective technology characteristic are more relevant to an individual's technology acceptance decision-making. Mintzberg [24] remarks that the knowledge base of a health-care organization is sophisticated but its technical system, the set of technologies and instruments used to apply the knowledge base, is not (nor can be) complicated. Having a positive perception of a technology's ease of use may provide the development and solidification of a positive attitude toward using the technology, which, in turn, can reinforce the intention for accepting the technology. Similarly, favorable perceived ease of use may contribute to an increased level of perceived technology control. Moreover, perceived ease of use could positively affect perceived usefulness. Previous research results showed that individual users have showed a tendency toward considering a technology to be more useful when it is perceived as easy to use [25, 26]. Perceived usefulness is important for individual technology acceptance decision-making and could influence the ultimate decision directly as well as indirectly (the strengthening of a positive attitude toward accepting the technology). Both the direct and indirect effects are included in this model, which suggested that perceived usefulness has positive influences on attitude and behavioral intention. Further, a system will build trust beliefs in an individual's mind if it can perform the anticipated function and bring about the anticipated consequences, which motivates individual to have a positive consideration of the use of the system. A positive attitude is the likely results of the summing up of trust beliefs regarding the system. Based on above arguments following hypothesis has been proposed:

H4: The level of perceived ease of use for EMR by an individual will positively affect perceived usefulness of technology.

H5: The level of perceived ease of use for EMR by an individual will positively affect attitude of use of IT.

H6: The level of perceived ease of use for EMR by an individual will positively affect trust on technology

H7: The level of perceived usefulness of EMR by an individual will positively affect their attitude to use information technology.

H8: The degree of individual trust in EMR has positive effect on attitude to use of IT.

H9: The degree of individual trust in EMR has positive effect on perceived usefulness of it.

2.3 Individual context

Attitude refers to an individual's positive or negative interpretative affect about performing a particular behavior [19]. Subjective norms refer to an individual's opinion of relevant others' perceptions on whether or not s/he should perform a particular behavior [27]. Change in attitude with response to social influences that are affected by the opinions or suggestions expressed from colleagues or other meaningful peers [28]. Moreover, users may develop a positive attitude toward EMR if it is recommended or advocated by colleagues who are important to them. Additionally, information quality is also one of the key factor that may have an effect on the user acceptance level of IT application. The assessment framework for acceptance of IT covers a wide range of measurement including effectiveness of the implementation process, quality of the information, quality of the system, usefulness and ease of use of the system & its information and overall impacts on the individual, group and the organization [29]. Based on above arguments following hypothesis has been proposed:

H10: The degree of individual attitude towards EMR has a positive behavioral intention to use IT.

H11: The degree of individual user's view point towards EMR has a positive effect on attitude to use IT.

H12: The degree of individual user's view point towards EMR has a positive effect intention to use IT.

3. METHODOLOGY

Five-point Likert scale (from strongly disagree to strongly agree) was used to evaluate the responses to the questions concerning implementation context, technological context, individual context and technology acceptance. To empirically test the proposed research model paper-based surveys from patient, doctor, nurse and other healthcare professional have been collected. Concurrently, we collected 199 responses from patient, doctor and health allied professionals from SNUBH. Seven multiple-items construct were subjected for analysis by a factor analysis using SPSS 22. The majority of respondents who were actively participating in EMR were female (55.8%) than that of male (44.2%). 63.2% of respondent was patient, 13.8% Doctor and 25% were health allied professionals. In order to assess the reliability and convergent validity of our model, we need to check Cronbach's α, squared multiple correlations (SMC), and construct reliability and AVE values which are presented on Table 1. The Cronbach's α value for each construct is more than 0.813, which implies that items have a relatively high consistency [30]. All the items presented on Table 1 were significance at 0.01 level.

Table 1: Result of measurement model assessment.

Constructs	Items	Mean	SD	Cronbach's α	Construct reliability	SMC	AVE
Compatibility	4	4.68	.409	. 898	. 841	. 724	. 624
PU	4	4.32	.398	. 886	. 828	. 624	. 632
PEOU	4	4.49	.412	. 813	. 841	. 655	. 641
Trust	4	4.40	.452	. 817	. 847	. 629	. 652
Attitude	4	4.68	.391	. 897	. 851	. 589	. 670
User's Viewpoint	4	4.39	.424	. 875	. 875	. 651	. 692
Intention to use	4	4.11	.663	. 822	. 812	.599	.709

PU= Perceived Usefulness; PEOU= Perceived Ease of Use

Figure 2 and Table 2 show the results of path coefficients of the proposed model. All the values were significant at the 0.01 level. The standard path coefficients for compatibility to PU, PEOU and trust were 0.32, 0.23 and 0.42 respectively and for attitude from PU, PEOU and trust were 0.63, 0.39 and 0.44 respectively. Our data showed that people are participating in EMR with positive attitude to accept new technology for betterment of healthcare system. The standard path coefficient for intention to use EMR from attitude and user's viewpoint were 0.51 and 0.28.

Figure 2: *Path analysis of proposed model (** significant at p<0.01)*
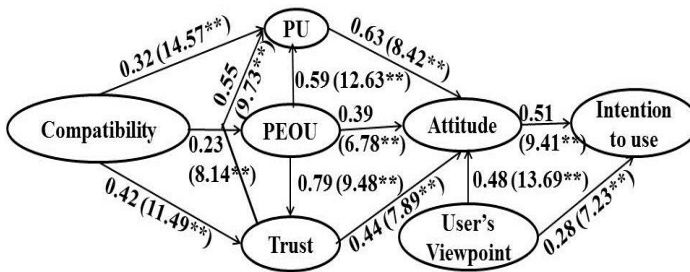
Table 2: *Summary of Hypothesis testing*

Path/ Hypothesis			SPC	t-value	Result
H1:	C	➜ PU	0.32	14.34	Support
H2:	C	➜ PEOU	0.23	8.14	Support
H3:	C	➜ T	0.42	11.49	Support
H4:	PEOU	➜ PU	0.59	12.63	Support
H5:	PEOU	➜ A	0.39	6.78	Support
H6:	PEOU	➜ T	0.79	9.48	Support
H7:	PU	➜ A	0.63	8.42	Support
H8:	T	➜ PU	0.55	9.73	Support
H9:	T	➜ A	0.44	7.89	Support
H10:	A	➜ IU	0.51	9.41	Support
H11:	UV	➜ A	0.48	13.69	Support
H12:	UV	➜ IU	0.28	7.23	Support

C: Compatibility; PU= Perceived Usefulness; PEOU= Perceived Ease of Use; A: Attitude; T: Trust; IU: Intention to use; UV: User viewpoint

4. CONCLUSION

Information systems have great potential to reduce healthcare costs and improve outcomes. Healthcare organizations have changed their storage systems of health records from paper-based systems to electronic systems to provide better health care services, e-health services. EMR have been integrating in hospitals to improve the quality of service to patients. The main purpose of this study was to examine and analyze individual intention to use information technology at smart hospital (SNUBH) in Korea. The results show that the intent to use EMR involves a positive attitude and user's viewpoints. A positive attitude is a combination of highly perceived usefulness, highly perceived ease of use, trust and positive user's viewpoints. Following the three-layered framework, our findings identified that system compatibility is the first facilitator to shape a positive IT attitude.

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11. Utilization of service robotics to promote elderly people living at home

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INTRODUCTION

The population of the world is aging rapidly. The aging of population is a complex issue: it concerns the well-being of elderly and it brings forth health, social, and economic problems. Sustaining independent living of elderly is preferred by most citizens and it is a target for the Finnish social policy. Several factors are involved in the maintenance of activities for daily living. When people age, they are faced with decreasing abilities that, among other factors, can threaten their independence. Age-related changes to mental and physical abilities can make the performance of everyday tasks difficult or challenging.

Activities concerning mobility, self-care activities, and social isolation or loneliness are regarded as the most problematic and threatening factors for the independence of elderly persons (Bedaf, et al. 2014). Difficulties of domestic life refer to shopping,

preparing meals, and doing housework. Other difficulties in elderly life are derived from memory problems, such as remembering to take medicines (Pigini, et al. 2012).

With the ongoing development of technology, new possibilities emerge for supporting independent living. A new emerging field in assistive technology is robotics. Service robots provide support related to four activity domains: mobility, self-care, interpersonal interaction and relationships, and other activities (Bedaf, et al. 2014; Pigini, et al. 2012).

Robots should be designed to benefit elderly themselves. However, technical ambitions seem to be guiding robot development (Bedaf, et al. 2014). The technology is not always tested with people the device is intended for. Thus, the users' needs had played a minor role when developing the type of tasks the robots perform.

During late 2014, Metropolia started up a Competence Hub for Service Robotics for Enhancing Health and Wellbeing. Metropolia's competence hub runs an RDI program. One research focus of the competence hub is the development of new technologies and service solutions for the wellbeing of elderly people. The purpose is to study how service robotics can be used to help elderly live at home longer, move safely and maintain their interest in life.

1. METHODS

A literature review was conducted. The purpose was to study how service robotics can be used to help elderly live at home longer. A systematic literature search was conducted using electronic databases Cinahl and Science Direct. From the 121 publications matching the search, six articles were finally selected and analyzed by using inductive content analysis.

Two innovation projects were carried out. One innovation project studied what kind of features smart rollators based on robotics need to have to maintain activities in daily living. Another innovation project was carried out to reveal how NAO-

robots can be used to promote elderly being active in their daily life. The steps of the projects were the following: 1) The five nursing students organized themselves a brainstorming session to innovate their topic. 2) Both groups conducted qualitative theme interview at a Finnish elderly service center. 3) The students tested their ideas of a robot rollator or NAO-robot at an elderly home in Helsinki. 4) Based on the information they had gathered, they formulated the answer to their question.

2. RESULTS

In the literature review, issues related to service robotics helping elderly live at home longer consisted of two main categories: 1) factors favoring independent living and 2) factors related to utilizing robotics. The factors favoring independent living of elderly contained five subcategories: robotics supporting mobility, robotics assisting in daily activities, robotics for medical treatment, robotics maintaining safety, and robotics facilitating social functions. The factors related to utilizing robotics contained two subcategories: features desired from robots and issues influencing the amount of robots used to support the elderly.

The final version of the innovation project consisted of the basic features of a smart rollator and optional features. The features of the basic smart rollator based on robotics are an electronic brake and stop light, an electronic determination of height, an obstacle detector, an alarm of falling and an emergency alarm. When help is needed, the emergency alarm also sends a message to the elderly home or another caregiver. The smart rollator designed in the innovation project has a steady and comfort seat. The rollator is also otherwise steady and it does not fall easily. When a user is getting up and leans heavily on the handles of the rollator, the front wheels of the rollator are prevented from rising up. This ensures a user's safety. A useful feature of the smart rollator is that the user can call the rollator up when needed.

The optional features can be added to the basic smart rollator on request. These optional features were the following: pedometer and mileometer, navigator, changeable handles, and music. With these features, each rollator could be different and individualized.

The final ideas of using a NAO-robot at an elderly home can be compressed into a task as being a messenger of good spirit. A NAO-robot can activate the elderly by conducting gymnastic exercises and singing sessions, playing music, and telling stories or news. A NAO-robot can also offer psychical support by asking about the health condition of the person, talking about everyday affairs, and encouraging to do things.

When used at an elderly home, a NAO-robot needs to have many features. A NAO-robot has to move fluently and walk without falling on the floor. A NAO need to remember the location of each room and have an ability to navigate at an elderly home. Face recognition is a useful feature, because it helps a robot to use the name of the person it is talking to. A NAO-robot need to handle simple conversation skills, such as speaking the Finnish language, hearing and understanding different sounds. It is important for elderly people that a NAO-robot looks like a robot, because it is a robot and not a human being.

3. DISCUSSION

The purpose of this survey was to study how service robotics can be used to help elderly live at home longer, move safely and maintain their interest in life. This work showed that the issues related to service robotics helping elderly live at home longer concerned either factors favoring independent living or factors related to utilizing robotics. The factors favoring independent living consisted of the following issues: robotics supporting mobility, robotics assisting in daily activities, robotics for medical treatment, robotics maintaining safety, and robotics facilitating social functions. These results are in line with the previous studies (Pigini, et al. 2012; Bedaf, et al. 2014).

The factors related to utilizing robotics were features desired from robots and issues influencing the amount of robots used to support the elderly. When using a robot at home, the robot need to be directed by the user and it need to be easy to use. Louie et al. (2014) reported that elderly had positive attitudes toward the socially assistive robot, but this study revealed that suspicions related to robots may prevent people from using them. The literature review revealed that robots should look like a human being. However, in the innovation project the elderly insisted that a NAO should look like a robot. The data of the literature review was small, but the results are quite in line with previous studies and are strengthening them.

The first innovation project introduced basic and optional features of a smart rollator. The basic features are needed to enhance the user's mobility and safety which are important issues maintaining activities in daily living as Pigini, et al. (2012) and Bedaf, et al. (2014) revealed. The optional features can be used to monitor the user's health and behavior as Sharkey and Sharkey (2012) described earlier.

The second innovation project produced different ways to use a NAO-robot in elderly care as well as a list of features a NAO-robot needs to have when it is used in elderly care. The role of the NAO-robot is to activate the elderly by conducting different activities. In addition, a NAO-robot can offer psychical support by being a conversation companion for an old person. NAO-robots are still quite clumsy in their movements which is one of the features that need to be developed if NAO-robots are to be used at elderly homes.

The information produced in the innovation projects can be used by engineering students when designing and testing technological solutions for robots. In the future, design based research might be a useful method when developing robotics, because design based research aims at developing, testing and implementing innovative practices. Furthermore, this method is an inter-disciplinary research approach where researchers, practitioners and users are collaborating in real-world settings. (Cobb, et al. 2003)

4. CONCLUSION

This research process revealed that robotics can be used to promote elderly living at home by assisting in movements, medication, safety, socialization, and daily functions. This work reports features that smart rollators need to have to enhance the user's ability to maintain activities in daily living. Furthermore, the ideas how to use NAO-robots to activate people at elderly homes are presented. These studies are a little step to pay attention to users' needs when developing the tasks robots perform and features robots need to have. Still, more interdisciplinary information is needed to develop the utilization of robots for improving elderly people's safety and well-being.

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12. Challenges in Medication Management at home

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Patient safety is global priority for healthcare systems. Its main objective is the elimination of risks and threats to patient health [1]. One of the most common health risk directly affecting patient health is medication errors [2], which are defined as "any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the healthcare professional, patient, or consumer" [3]. Medication errors can occur within the entire medication delivery process. Medication discrepancies in care transitions are common and prone to cause harm to patients as well as extra work to personnel [4].

We conducted two regional studies to first clarify, in the context of medication information management [5], which organizations are involved, who are the participants, what information they need and what tools they use, and what are needs for development are there. The second study (a project called YLÄVÄT) aimed at developing tools for medication information management and shared models for safe and

successful cooperation of the different participants in the medication process [6].

This study discusses the findings of our YLÄVÄT project and focuses on the three aspects of providing safe medication management in home care and related challenges: the multidisciplinary co-operation, use of electronic tools and competencies relevant to medication care at home.

1. BACKGROUND

Medication reconciliation is a process of identifying the most accurate and complete medication regimen of patient's enabling the provision of precise medication for patients in healthcare systems [4]. A multidisciplinary team approach involving physicians and nurses working alongside pharmacists aims to ensure that patients' physical condition and health information are taken into account as part of medication reconciliation [4,7].

The use of the medication reconciliation approach ensures the realization of a process of compiling a complete and accurate list of the patient's medications, including drug name, dosage, frequency, and route of administration. In addition, comparing this list with the physician's admission order, transfer, and/or discharge orders, with the goal of providing correct medications for the patient at all transition points, allows increasing patient safety [7,8]. This is further emphasized in home care.

The use of electronic tools, and in general, the safety implications of electronic medication management in primary care have not been established as widely as expected. Patient data is mostly documented electronically. Electronic health records (EHR) cover 100% of both specialized and primary healthcare in Finland [9]. Electronic prescriptions from physicians are available through the National Electronic Prescription Centre, which pharmacies can use to retrieve the documents. Physicians and patients can access the National Electronic Archive (KANTA) system and follow their medication regimen as well as discharge summaries [10]. In recent years, smartphone applications have

provided a new strategy for adherence improvement. Mobile phones have penetrated nearly all strata of society. This trend helps enabling low-cost, large scale implementation of interventions via smartphone [11]. It also offers an opportunity for better mobile telemedicine services through patient-oriented applications, for example, patient education, disease self-management, and remote monitoring of patients [11].

During transitions from one healthcare setting to another, it is important to provide necessary information for patients, caregivers, and healthcare providers [7]. One of the critical success factors in medication care is communication and information sharing. Poor communication on patients' medication between levels of the health care system leads to numerous and potentially harmful medication errors and increases risks associated with medication management [8, 12].

Safe medication management requires solid medication competence of the healthcare personnel. Medication competence consists of theoretical, practical, and decision-making competence and is interrelated and linked to the values and attitudes of the healthcare personnel. It is associated with the personnel's settings and patients' individual situations [4].

The medication administration process is based on multidisciplinary collaboration and requires practical competence on planning, implementing and evaluating medication [13]. It requires cognitive knowledge, at any given moment, about the appropriateness of the medication, dosage, timing, selecting the right medication, assessing it, and interpreting the assessment data. [4, 13.]

Patient medication education, documentation and evaluation of medication effectiveness from an important area [13]. Good adherence to medications and a healthy lifestyle have been proven to be important in prognoses [13]. However, studies show that medication adherence is poor in patients with chronic illness [13]. Furthermore, the use of new electronic tools creates new learning objectives.

2. MATERIAL AND METHODS

The data were collected during the joint regional development project (YLÄVÄT) in Northern Savo between the care providers and the University of Eastern Finland. The study used a qualitative approach, and a purposeful survey instrument and five workshops cases were used as methods for data collection during 12/2013 – 4/2015. The workshop cases included different topics which were related to medication treatment in home care: medication information, medication dispensing, medication administration, medication change, medication error, and instruction error. The focus of this study was medication information and safe medication management in home care. In total, 158 professionals with different healthcare backgrounds participated in five workshops during the project.

Inductive content analysis was performed on the survey and workshop materials. The participants were informed about the study, and there was no relationship between the researchers and the participants.

3. RESULTS

From a multidisciplinary perspective, the availability and reliability of medication information were highlighted as being of utmost importance. One result obtained was that only part of the medication information reached professional and lay caregivers or relatives who participate in the medication management activities at home. In addition, there are differences in the work processes of care-givers in relation to the medication process.

1 All participants in the workshops highlighted the need for shared cooperation and information management models to support safe and successful medication. The practically of electronic prescribing has been proven in Northern Savo, and smartphone applications were in use. Mobile phones have increased the availability of medication information for healthcare personnel, whereas documenting by them was less

extensive. There is a challenge of agreeing on a shared model for using (documenting, searching, monitoring) electronic tools. The project showed that human behavior was significant, while the importance of technology was less notable. Nevertheless, in order to gain competence on using electronic tools, there continues to be a demand for education and training for healthcare personnel. Knowledge related to medication, such as indications, contra-indications, side effects, and interaction, was indicated as an important factor for successful medication also in our study, confirming the results of other research.

2 The results of the YLÄVÄT project brought up a need for process thinking, which was described to involve consideration of how and why different aspects, such as people, organizations, strategies and environments change, act, and evolve over time.

4. DISCUSSION

The purpose of this study was to develop tools for medication information management and shared models for safe and successful cooperation of the different participants in the medication process. The results of this study are encouraging, as they reveal that cooperating between care providers is valued and that they all work towards high quality and safe medication care. According to this study, the object of medication information management should be to support care, make medication information available and enable its use when and where needed. Introducing the medication management process is based on protecting patients from adverse drug events related to medication errors that might occur during patent transfer between various healthcare settings [4,12].

The YLÄVÄT project highlighted factors which could increase cooperation between healthcare providers and revealed a need for agreeing a shared model of using electronic tools (including documenting, searching, monitoring). Continuous work in multidisciplinary cooperation, use of electronic tools, and medication competence are needed to ensure safe medication

management at home. Based on the results of the case studies, the YLÄVÄT project produced criteria for safe medication management in home care.

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13. eHealth in Corporate Social Responsibility

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While the world is challenged with global risks, increasing instability, population growth, ageing and increase of chronic and lifestyle diseases, United Nations Global Compact (UNGC) continue to fight against the challenges and strive for Millennium Development Goals (MDG) with 8000 volunteer private companies and 4000 non-business participants. Corporate Social Responsibility (CSR) in business is becoming mainstream managerial tool to decrease company risks and secure good public reputation and long-term profitability. eHealth has been referred as "quiet revolution" due to its potential in supporting health of people and work of health-care professionals. mHealth is increasingly enabled by growth in teledensity and the emergence of mobile phones. The technologies offer vast variety of tools for health creation; health education, wellness support, treatment compliance, cessation treatment, disaster response, data gathering, diagnosis and remote care. In this paper, the use of technology and company innovations in CSR activities is discussed, especially in the angle of health creation. While doing an explorative study of 17 well-established companies a wide range of technology use was found. Companies reported positive outcomes in added stakeholder value, increased employee satisfaction, improved governmental relations and increased intellectual property, and initiatives were described as agent for innovation. Companies which had developed technologies had also used them in commercialized purposes, which demonstrated that CSR can be a platform for development and a gate towards commercialization.

INTRODUCTION

1.1. Foreword

This study contributes to the literature of CSR by questioning if health should be included as CSR stakeholder. It also studies about companies role in health promotion and how they could use promising technologies as eHealth and mHealth in initiatives.

1.1. Target of the Study

Research Target is to seek answers to the following key questions. At first, what are companies' perceptions of stakeholder group? Secondly, how, if any, the health promotion has been implemented? Third, has the company participated to collaborative initiatives in these CSR efforts and why? Fourth, how adaptive the company was to utilize new merging healthcare technologies like eHealth or mHealth applications? And did the companies use innovations and engage in new product introduction with the initiatives?

2. CORPORATE SOCIAL RESPONSIBILITY

2.1. Stakeholder Model and Shared Value

The concept of CSR has emerged to economic research in 1930's Milton Friedman. The stakeholder challenges shareholder theory by introducing responsibility towards all stakeholders that can be affected or that can affect the business.

CSR can be described as a triangle in three level. The first level is Compliance against laws, regulations, standards and codes of conduct. The second level is Enhanced Sustainability. And the third level is Sharing created value in the society and also paying back to environment.

2.2. Health's Role as a Stakeholder

There are three roles by which health can be promoted. First, Health protection via products, goods and services. Second, Health promotion, helping people to control their health via distribution and healthy lifestyle marketing strategies. Third, Social determinants; living conditions, access to health and creation of wealth.

2.3. CSR Today

There are signs that CSR approach is becoming de facto operating mechanism in business. The biggest global corporate sustainability initiative, United Nations's Global Compact (UNGC), has over 8000 companies and 4000 non business participants which have agreed to follow the core principles of UNGC and report annually on their status.

2.4. Co-operation, Innovation and Technology

European commission states that partnerships and co-operation bring benefits in building brand reputation, consumer preference, customer loyalty, driving innovation, growth in developing, emerging markets in cost saving. Gokcen divided business innovation into two categories : process innovation and product innovation. Process innovation is about how company operates, which may be of interest of consumers while Product innovation hold responsible attributes, like the consideration of health and safety.

2.5. CSR Communication

Capital markets and consumers are interested in companies social responsibility performance but with varying standards and codes of conduct, several indexes and rankings. Also most of the ratings rely on surveys, where response rates are statistically insignificant and the responses are not verified externally.

2.6. Standardization

There are four Standards that cover CSR concepts. First, ISO 26000 is the leading guidance on Social Responsibility. It was developed using multi-stakeholder approach. Second, ISO 14001, ISO 14064, ISO 14032 handle mostly environmental issues. Third, ISO 14000 family also includes a number of CSR specific standards for different stages in the value chain. At **last, OHSAS 18000**

is for occupational health and safety management. It is soon to be replaced by ISO 45001.

3. GLOBAL HEALTH AND EHEALTH

3.1. Global Challenges

Global risk report released by World Economic Forum(2014) highlights three risks. First, increase of instability in the increasing multipolar world. Second, high employment and un-securities causing risks to the young generation. Third, cyber risk. The risks are the decreasing healthcare funding due to economic crisis, the ageing population and the growth of chronic and lifestyle diseases.

3.2. Global Health

Healthcare is changing its form. Digitization enable collection of vast data, computing power enables complex data analysis, increasing data bands enable remote care and connectivity, device size are getting smaller, and the self-care is increasing. The healthcare is becoming better accessible to people. One of the promising new technologies are eHealth and mHealth.

3.3. eHealth mHealth

eHealth is a broad application area. It can be used to exchange electronic medical records and patient data, in multimedia consultation, in remote imaging, in medical diagnostics, in remote medical procedures and in medical education. Recently it has been used in storing genomic data as part of personalized electronic health record. mHelath uses mobile phones's voice and short messaging service(SMS) and general packet radio service (GPRS), third and fourth generation moible telecommunication (3G and 4G systems), Global positioning system (GPS), Bluetooth technology and specifically implemented application. mHealth can be divided into consumer based and healthcare system based.

3.4. mHealth initiative in Literature

In Bangladesh, Country regulations mandate operators to provide SMS service for government for free, which uses the use of mHealth in health initiatives. In Finland, a small start-up company has created a scalable cloud service

application for mobile data collection and is used in Thailand for tracking the spread of tuberculosis.

3.5. Challenges in mHealth

Jaroslwski and Saberwal(2014) mention four main challenges in mHealth. First, Connectivity. Second, Software. Third, Hardware. Fourth is Analytics. Apart from that Common technological standards are required. Government support would be valuable to overcome connectivity problems and ensure security. Aranda-Jan et al.(2014) mention the limited number of SMS message characters, network reliability and lack of technical expertise as some more challenges. There are challenges in human nature; shortage of skills required, reluctance to learn new, turnover of medical staff and attitudinal problems.

4. IMPLEMENTATION OF THE STUDY

4.1. Authors Proposition

Author proposes CSR and eHealth could be supportive; for instance a company in low-income country could participate in mHealth trials wherein it could promote the health and health education of its employees, and create wellbeing and stability as well to a wider society.

4.2. Methodology

Companies are evaluated qualitatively in vastly recognized standards as Global Reporting Initiative (GRI) guidelines and ISO 26000. The theory overview and the recent inventions and initiatives in this study are retrieved mainly from e-source; most recent research papers and publications, websites of recognized organizations and websites of the initiative coalitions. Selection Criteria of the company were Company publishes CSR reports, has CSR integrated in its strategy, publishes CSR reports which are of good form and Big companies with substantial brand.

4.3. Companies in Sample

17 companies were selected. The following is companies which selected in this study. Unilever, Patagonia, McDonald's, Nestle, Cisco Systems, Coca-Cola, Apple, Microsoft, Marks & Spencer, Hewlett Packard, Samsung, BMW, IBM, NIKE, ING, A.P. Moeller Maersk and Ford Motor Company.

5. RESULTS

5.1. Company Overview

Companies from food and beverages, restaurants, clothing, textiles, carpets, retails, technology, transportation, automobiles and financial services. 10 companies were from US, 6 from Europe and 1 from Asia.

5.2. How Companies see CSR

13 companies used GRI reporting format. The dominant theme in reports were the forward thinking. Companies accepted that they cannot do all at once. They aimed for interactive improvements and long term goals. Companies were well utilizing their core assets in CSR activities. Charity and donations were common forms of CSR, usually managed by subsidiary organizations. Companies had matching donations programs and employee volunteerism was encouraged. Stakeholder dialog was considered important and there was vast variety of stakeholders.

5.3. Summary of Health Initiatives

Basic Health initiatives were supporting basic human needs, providing Education, charity and donation for health, company supported volunteerism, health support for employees families, disaster response and relief, supporting customer health, health support in supply chain, increasing access to healthcare and health support for larger population.

5.4. eHealth and mHealth

Coca-Cola had partnered with a fitness technology company to create an activity tracker, synched with smartphone to set and tract progress of activity and weight goals. Microsoft launched HelpBridge, a free disaster response mobile application that provides a way to contact close-ones, donate money and goods, and donate volunteer time.

5.5. Conclusion

The study found that CSR initiatives to support education, basic human needs and basic health were common. Initiatives beyond this, to support community or public health, were less common but when deployed, the variety of operation were broad. In addition to mobile and cloud applications, the companies had offered their expertise and assets for big data analysis and in versatile ways to

increase access to healthcare. Data analysis was used in pharmaceutical research as well as to help authorities to evaluate population health and detect epidemics. Clinical decision support applications were developed both for mHealth and eHealth.

5.6. Limitations and Validation

The public company report used for this study was not homogenous. The companies CSR reports differed in breadth and it might be that some companies do promote health in their efforts but it not visible in the published annual materials. The author tried to avoid bias by researching the material strictly on the perspective of research questions, but the study would have had profited from triangulation or validation by another researcher. Repeatability would have better been achieved with keyword searches, but as the idea was rather "explore" the phenomenon than to form or validate hypothesis, the keyword method did not suit the study. The deployment of CSR is currently in an era of fast evolution so what was discovered today may not necessarily qualify in the forecoming years.

(References are available upon request)

14. Trust Evolvement Process in Internal Managerial Communication: A case study of a higher education organization

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This paper explores the meaning of internal managerial communication to trust evolvement process at interpersonal level in higher education organizational context. Qualitative methodology is applied in the current case study. The primary data has been collected by participant observation, written interviews and applying the method of shadowing. Preliminary findings suggest that managerial communication seems to have a significant role in the trust evolvement process the members of organization are experiencing. In prior trust research the process of trust evolvement has rarely been connected to actual organizational process theory. This paper contributes to the discussion a view of trust evolvement process connected with the trigger of managerial communication in digitalized society.

1. INTRODUCTION

Organizations of higher education are facing the severe consequences of weak global economy. Universities worldwide are undergoing budget cuts due to decreasing of public funding. In any organization that is going through financial difficulties and therefore managerial actions required, a risk of trust breach at interpersonal level towards leaders and organization is faced. The prior trust research has acknowledged the influence of low trust between members of organization on internal co-operation (Van de Ven and Smith Ring, 2006, 146-152). Managerial communication as a tool of representing the financial state of the organization can play a significant role in the either upward or downward evolvement process of trust. Mayer et al. (1995) state that in defining trust we need to understand its dimensions in all human relationships. The manager as a representative of the organization has a considerable role in the trust evolvement process of employees towards the organization (Currall & Inkpen, 2006).

In general, university faculty members have been a group of low interest in organizational studies. Recently, Graso et al. (2014) suggested that faculty members should not be neglected as participants of a study due to their unique job demands and the obvious potential influence on students, institutions and respective academic fields. The changes in the operating environment of universities has been chosen the context of the case phenomenon in this study. The representative organization is a university of applied sciences, being the target of mostly financially driven major legislative changes in Finland during the past few years.

2. THEORETICAL DISCUSSION

2.1 Trust

Trust is a complex, multifaceted phenomenon, and dynamic and contextual in nature (Lewicki et al., 2006, p. 992). From the

perspective of organizations and, especially, leadership point of view, a central question is if it is conceivable at all to produce trust or even maintain target-oriented. Scholars have discussed about the spontaneous nature of trust and viewpoints of trust as a spin-off depicted (Misztal, 1996, p. 32). As Bachmann (2011, p. 204) notes, trust is not spontaneously and automatically occurred but deliberately created and shaped and that is the reason for studying trust evolvement and searching for a better understanding of effective trust-building processes.

2.2 Managerial communication

Countless number of communication definitions exists by academics and practitioners describing, predicting, and trying to understand communicative phenomena. One of them defines communication as "information that enters a process and eventually leaves its inverse process. For example, information is transmitted by speaking and received after processing by its inverse, hearing." This definition is broad and inclusive (Losee, 1999). Another definition describes communication as the sharing of formal and informal, meaningful information (Zeffane et.al. 2011).

Taylor and Van Every (2000) state that communication enables organizations to exist and organizations emerge from communication. Keyton (2011, 12) defines organizational communication as "complex and continuous process through which organizational members create, maintain and change the organization". Control over message creation and message meaning vary in different hierarchical levels of organization because of varying degrees of power and status of people, but communication is not a sole management privilege or responsibility (Keyton, 2011).

In organizations such as universities, the faculties and departments are often rather isolated from each other both physically and by the invisible boundaries of various scientific approaches. Currently, digital communication methods are gaining a major role in managerial communication enabling free work from geographical and temporal restrictions. Savolainen

(2013) has explored the demands "e-era" sets on leaders. She found that even when Technology-Mediated Interaction (TMI) is considered functional, still a real need for face-to-face interaction between leaders and followers exists and therefore interaction has an important role in the formation of trusting relationship between the two parties.

2.3 Trust evolvement process

Schilke and Cook (2013, p. 283) define process theory as a temporal sequence in which change occurs to produce a given outcome and separable stages are identified with transitions between the stages. Prior literature firmly suggests that trust in work relationships progresses through identifiable stages (Lewicki and Bunker, 1996) providing to view trust evolvement by applying process theory.

3. RESEARCH METHODOLOGY

This study applies a qualitative methodological approach for the focus is in understanding a certain case phenomenon through representative organization. The interest of the study is in the feelings and interpretations of the informants of case organization. Case approach as research strategy has been chosen to study a common phenomenon in organizational surroundings but in rare circumstances. (Eisenhardt and Graebner, 2007, 27.)

3.1 Research data and analysis

This research is based on the question "how" and the variables behind the question are most likely to come to surface with a qualitative research approach (Silverman, 2010). The research question in this paper is *how does followers trust towards leader and organization evolve when triggered with face-to-face managerial communication*. Simons (2009, 3) describes the purpose of choosing case study method "is to explore the particularity, the uniqueness, of the single case". The first author has collected the primary data of this research by participant observation and

following written interviews, secondary data concludes shadowing data of the communicator and supporting statistical data provided by the case organization. In David Waddington's (Cassell & Symon, 2004, 154) classification to researcher's role in observation this would be called a participant-as-observer for the first author is a member of teaching staff in the case organization and This has enabled easy access to all events interesting. In most of the observation situations the first author had a double-role as both follower and researcher.

As an advantage of observation Eriksson and Kovalainen (2008) state that making observation in addition to interviews can provide great insights into how a situation or action studied is subject to social pressure. Financial situation of a large educational organization is a delicate issue and the communication situations observed were rare and have certain tension in them do to the situation of the organization.

Data analysis is conducted by first coding and thematizing the different datas. In multiple case studies after data collection and organizing, the analysis in done between the cases. (Eisenhardt, 1989, 540.) In this study, the case actually being the phenomenon and the organization a representative of it, the analysis is done between different data collected from the organization. In this paper the data consists of the written interviews of followers after faculty meetings observed.

3.2 Preliminary findings

Preliminary findings based on the analysis of the written interviews of followers collected after management communication situations give a strong suggestion that followers put a lot of expectations on rare face-to-face communication of leader. In this study the management communication situations observed are faculty and other staff meetings in the case organization. The meetings chosen are the ones where the leader of the organization (the university president) is present and financial situation of the organization is communicated. Most managerial communication in the organization is implemented through digital communication methods: email, newsletters and

blogs. The informants report their feelings about face-to-face communication with leader and disclose that if their expectations are met, there are no changes in the perceived trust towards both organization and its leader.

Interviewed faculty members reported, for example, that "*I knew or expected the news beforehand, the message is the same as usual and so it has no meaning for my feelings towards the organization and the leader.*" The interviewees seem to seek confirmation for their existing perceptions of the organization from the management communication. It also seems that if the core content of the communication is already familiar to followers, the quality of the communication has a very small role to the feelings the communication raises.

4. DISCUSSION

The findings of this paper suggest that when most of managerial communication is executed with digital communication methods, a lot of expectations are put on the face-to-face communication situations between leader and followers. Some indications of movement – either upward or downward – between the levels of trust can be perceived in the interviews of followers whether the communication situation with leader has met the expectations or not. Through discussion between prior trust theories and organizational process theories this paper adds to views of trust evolvement as a constantly variable refection of followers' expectations and perceived reality.

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15. Future-oriented educational responses for promoting healthy ageing

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ABSTRACT

Objective: The fast growing ageing population as a global societal trend challenges the higher education institutions to initiate educational responses for promoting awareness of healthy ageing among professionals. This paper comments on how to promote healthy ageing through educational responses by bringing the senior people's own perspective and understanding of healthy aging and wellbeing in living to the fore.

Method: The relevant literature and examples of educational responses for healthy aging are described here in the context of healthy ageing project co-operated with the Finnish Senior Housing Community and implemented in the wider framework of Well-Being and Energy Efficiency for the Living Conditions of Senior Citizens -project (HEA) coordinated by the Helsinki Metropolia UAS and financed by the European Regional Development Fund (2011 – 2014).

Results: The results of the HEA project suggest there is a scope in the educational responses and services for a new kind of understanding about ageing. Typically, senior people have been a target for rationality of managing their care rather than a competent agency co-creating innovative care and service solutions for themselves. The case presented

here describes how the elderly citizens themselves took the initiative for their healthy ageing in Finland.

Conclusions: The future professionals are expected to be effective in promoting autonomy, independence and competence in people who are ageing. Health promotion represents a comprehensive social and political process, which not only embraces actions directed at strengthening the skills and capabilities of individuals who are ageing, but also action directed towards co-creating social, environmental and economic conditions in an age friendly way. The paper is also an invitation to join co-creation of educational responses towards healthy ageing.

1. INTRODUCTION

In this paper we reflect on the demands and responses of education to promote healthy ageing and ageing peoples' belief to their own capability in society through education and development work. Our general aim is to contribute to a more elaborated understanding of healthy ageing with particular reference to educational responses for health promotion within higher education context. The main question addressed here is how to gain a better understanding of the role self-determination manifestations and the active role of ageing people themselves in professional education.

In the light of literature, we identify first how healthy ageing is promoted effectively. The dynamic interplay between the global drivers and the demands for building capacity for healthy ageing and health promotion interventions are considered. Global changes in population build up and growth as drivers have consequences for health and social care services and for professional education towards prevention as described in the Figure 1. To keep future care and health services affordable and efficient they have to be organized differently by using evidence based knowledge and technological innovations to support clients' autonomy, and brought closer to the individual. This demands the education to build a new type of capacity for health and social care professionals who are able to support the self-management and empowerment of people (Kahana, Kahana and Lee 2014; Keers 2014; Roodbol 2013).

Figure 1: *Building Capacity for Promoting Healthy Age*

LOCAL AND GLOBAL DRIVERS

BUILDING CAPACITY FOR HEALTHY AGEING

	ACTIVITIES	BUILDING CAPACITY	INNOVATIONS	DRIVERS
Macro level	Healthy Ageing Policy	• The policies and practices for Healthy Ageing	• Improving efficiency of interventions through Self-management and Customer choices	• Demographic changes: ageing, prevalence of chronic illnesses
Meso	Healthy Ageing Interventions	• Promoting professional capacity through curricula reform and co-creative R&D work	• Technology supporting Self-management: Big Five, eHealth solutions	• Technical development (eHealth, digitalization) • Change in Paradigm in health care towards prevention
Micro	Educational responses for Healthy Ageing	• Self-management education for ageing people, professionals, students (cases)	• Health business innovations with strong sense of customer practicalities	• Changes in professional skills needed • Lack of Labour Force

Secondly, the theoretical basis for creating motivating and effective healthy ageing programs are introduced. Based on self-determination theory (SDT; Ryan & Deci 2000) we focus on how to gain a better understanding of the role self-determination manifestations in professional education and how to support the active role of ageing people themselves for promoting their healthy ageing effectively.

The conclusions are based on the experiences of R&D project where the solutions for healthy ageing were co-created together with students, researchers and with the people who are ageing. In the light of HEA project we offer an example of how the self-determination has been understood by the elderly people themselves in their definitions for promoting their own healthy ageing and their agency in society.

2. EFFECTIVE INTERVENTION FOR HEALTHY AGEING

There are many definitions of healthy ageing. Furthermore, terms such as active ageing (WHO 2002), successful ageing (Bowling & Iliffe 2006; Rowe & Khan 1997) are often used as interchangeably with healthy

ageing. Common for the current definitions is that healthy ageing involves more than just physical or functional health. Autonomy, independence, and resiliency have all been equated to healthy ageing. Generally, healthy ageing is a process about optimising opportunities for good health, so that people can have an active part in society and enjoy an independent and high quality of life as they age (WHO, Regional office for Europe 2012).

An evidence-based approach is used here to underpin thaims,objectives and goals of any effective educational responses or programs for healthy ageing and guiding their development and implementation. In the Healthy Ageing literature review (2012) produced for the Victorian Department of Health in Australia seventeen programs, of the over 100 programs identified and evaluated, were classified as having strong or sufficient evidence of effectiveness. Of these seventeen programs, fourteen were physical activity or falls prevention programs, and only two were self-management programs. Although the main focus of healthy ageing research seems still to be mainly on physical activities, the results highlight for a holistic approach, multi-factorial and for multi-disciplinary programs considered to be more effective than singular approaches (Healthy ageing literature review 2012).

The promotion of self-efficacy and behaviour modification among ageing people were key strategies found effective in the Australian Healthy Ageing literature review (2012). The promotion of self-efficacy; social engagement; multi-disciplinary approaches including extensive collaboration with education, research and community services; tailoring to individuals needs and abilities; cognitive-behavioural approaches; empowerment of individuals; multi-faceted approaches; and evidence-based development are all common features found in the programs which may have contributed to their success and effectiveness in healthy ageing (Healthy ageing literature review 2012).

Good self-management seems to be one key in helping tomorrow's elderly people to stay healthy. Various cognitive-behavioural methods for motivational or peer-to-peer counselling, education or social change methods through community development, for example, have been indicated to increase self-efficacy, skills and knowledge among ageing people increasing their feeling of autonomy to control the own course of

life, and effectiveness in dealing with environment. Indeed, a newest paradigm for health care seems to raise the respect for client autonomy and the elimination of social injustice to the highest level of priority for all health care practitioners. Previously, enhancing people's welfare had been considered the single-highest priority. This change means in part that health care practitioners are charged with the new goal of supporting clients' autonomy as well as the long-standing goal of enhancing client welfare including physical and mental health, quality and length of life in all encounters with their clients (Ng, Ntoumanis, Thøgersen-Ntoumani et al. 2012).

There are, however, still many open questions, such as how to motivate the people who are ageing to implement the self-management programs in their day-to-day practices. From the perspective of education, we also have to ask how ready health and social caregivers are for the transition towards co-creating future-oriented self-management programs and what is a theoretical base that aims to address the known protective and risk factors in healthy ageing.

3. SELF-DETERMINATION THEORY (SDT) AS A FRAMEWORK FOR HEALTHY AGEING EDUCATION

Self-Determination Theory (SDT), (Ryan & Deci 2000; Deci & Ryan 2008, 2012; Deci, Ryan & Guay 2013) is applied here as a broad professional framework charging health and social care practitioners with a new goal of supporting senior citizens' autonomy in all their encounters in health promotion context. Self-determination means providing ageing people the opportunity to improve the quality of their lives and encourage them to take charge of their life and health by educating and monitoring themselves about their specific conditions, and get access to information about service options.

SDT articulates a meta-theory that defines intrinsic and varied extrinsic sources of motivation applied to domains such as health, education, work and healthy ageing. SDT explicitly identifies autonomy as a human need that, when supported, facilitates more autonomous form of behavioral regulations. According to SDT model healthy ageing has to

be fostered through conditions supporting the individual's experience of autonomy, competence, and relatedness (Ng et al. 2012). Figure 2 indicates that promotion of these three fundamental psychological needs of autonomy, competence and relatedness is expected to lead to improved feeling of controlling one's own behaviour, being effective in dealing with environment and being understood and cared for by the others. Improved autonomous and controlled regulations and motivation in turn have predicted to lead to improved mental health (e.g. lower depression, anxiety, and higher quality of life), as well as to more health-conductive behaviour associated with improved physical health (NG et al. 2012).

*Figure 2. **Promoting self-determination of people who are ageing.***
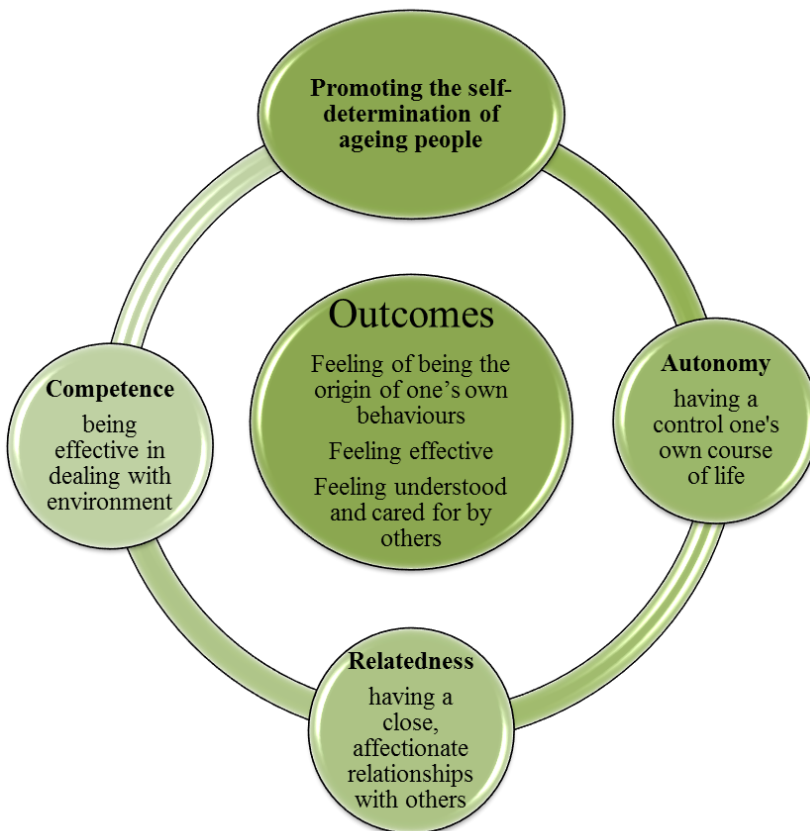
4. A CASE OF SELF-DETERMINATION IN THE FINNISH ELDERLY HOUSING COMMUNITY

In Finland, the ageing of population is the quickest in Europe. The Finns will age especially fast during the 20 following years when the big age group reaches their old age. As a consequence of the change in the age structure of the population, the society must prepare and adapt itself to the needs of the ageing population. The concept of SDT model is clarified here by describing the concept and activities of the Finnish elderly housing community documented in the Well-being and Energy Efficiency in Living -project (HEA, 2011–2014; funded by European Regional Development Fund).

What does the future of elderly care look like to you? This was the question posed by the half a dozen Finnish women who themselves had seen and faced the problems in arranging care for their relatives. They wanted to take the initiative in their own hands and started to promote the idea of self-service housing community for elderly people. They brought together a big group of senior citizens who shared their concern and passion for creating a new kind of senior house according to their own preferences for living. These preferences expressed the need to control their own life (Autonomy), need to manage their daily life (Competence) and need to create a strong and participatory community spirit (Relatedness). A new kind of senior housing community was created according to the own preferences of the people who wanted to build the future of one's own elderly care in terms of self-determination. (Dahlström & Minkkinen 2009.)

The Active Seniors Association was founded to legitimize the grassroots innovations produced by the elderly citizens. The broad vision of the healthy ageing gave a direction to the practices of Finnish senior housing community. The vision took a concrete shape when the co-construction of their own senior house building was started in late autumn 2004 and it was completed in April 2006. In addition to co-designing their own flats, the residents played an important role in designing the common areas of the senior house building. The

architectural designing allowed the future residents to get involved and decide on the layout of their plan, the room division, the materials and other details. Their own building and its community was named as Loppukiri [the Final Spurt]. Loppukiri community occupies a seven-storey building with 58 flats and circa 450 square metres of common area including a spacious roof terrace and a smaller terrace adjacent to the dining room on the ground level. It is a housing community for mid-life and elderly people in urban surroundings in Helsinki. The property is owned by a private housing corporation whose shareholders form the majority of the members of the senior community.

The Finnish senior housing community did not create just a new kind of senior house. Instead, they created a new concept for self-determination as well. The management processes in Loppukiri focus on peer-to-peer management and self-direction aiming to capture the wisdom and experience of every resident. The experiences of current residents of senior house community were analyzed in the HEA -project context based on their peer-to-peer-discussions about their experience of living in this senior co-housing community. Adequate peer-to-peer support was experienced by the residents as a key factor for their healthy ageing (Matinheikki-Kokko & Minkkinen 2015). The peer-to-peer support provided resources for personal activities and everyday functions in which they are expected to participate.

The following factors described the taste of Life in Loppukiri expressed in the peer-to-peer discussions:

1. Continuity and safety which are manifested as capability as confidence in the neighbour help, and as a good feeling offered by "the big and small home".

2. Significant belonging, the own significance in the group" The people are that joy." "I am lazy to participate but in Loppukiri I have joined many hobbies. Others example encourages trying instead of becoming passive".

3. Joint action, "Our common dinner is the best moment of the day even it will be preceded by each one's participation in the preparations in its turn". The verbal support and spurring of the community also encourage withdrawing inhabitants to join activities in the community.

4. Shared joy in the Loppukiri community was often mentioned as an opposite for a lonely old age." I do not want to be alone." The good

feeling is created through the greetings and the neighbor help, among others, or through a common party in our beautiful residential environment. "Now I have come home".

Loppukiri was seen as a way of life in an innovative senior house which was also guiding a way towards innovative elderly culture. A highly engaging community environment has been created by making the Loppukiri philosophy visible as well. The aphorisms of residents were written in Cataracta artefact, situated in Loppukiri Facade (designed by Pekka Paikkari). These aphorisms are creating the spirits of community and reminding of a shared agenda for healthy ageing: Like coming back home after a long journey",”Life tastes good”, ”House of friendship",”Group creates warmth",”Practice makes corageous ”, ”Your last puberty”, ”Last turning point”.

5. CONCLUSIONS

The senior citizens' ways of life, situations, their expectations and needs are different and individual. Therefore, the ageing people's own perspective and understanding of healthy ageing and wellbeing in living is brought here to the fore. It is considered as a fruitful and necessary for promoting healthy ageing and peoples' belief to their own capability as considered by the ageing people themselves in Loppukiri and documented also in the newest literature (Kahana, Kahana & Lee 2014). Actually, new understanding of healthy ageing has been fostered by recent interest in resilience, in subjective evaluations of ageing well and attainment of a meaningful life which has, however, been the latest and least explored aspect of study in the literature. Thus, more often the ageing people are seen as a potential resource for guided self-management of their own health rather than as a target for the services.

Considering, chancing the role of ageing people towards increasing self-determination or self-management of their own health will challenge health promotion education as well. Traditional education, however, still aims often to prepare health care professionals for gerontological nursing whereas the students and future professionals need to enhance their skills to be able to implement new self-management programs in

day-to-day life among ageing people. The future professionals are expected to be effective in promoting autonomy, independence and competence in people who are ageing. Health promotion should represent a comprehensive social and political process, which not only embraces actions directed at strengthening the skills and capabilities of individuals who are ageing, but also action directed towards co-creating social, environmental and economic conditions in an age friendly way.

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16. Differences among elderly with various health condition and demographic background in adopting the Internet.

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Abstract

   This presentation discusses how elderly citizens in Finland with certain health characteristic are involved in the digital society and empowered to act more independently. The aim of our study was to analyse the effects of various health conditions when adopting use of Internet or usage of online services such as social media or email and communication among elderly citizens. The study was conducted by evaluating whether there is gap between those who are able to access online services and those who are not able to access with certain demographic data. The study was a survey current condition of elderly in adopting Internet. A purposeful questionnaire was developed for data gathering and sent to citizens over 60 and 70 years in Eastern –Savo Region (N = 2508). Descriptive, logistic and variant analysis for nonparametric data were chosen to explain the differences among the elderly in aged 60 years old group (n=1515). The result of the study

explained how certain demographic factors especially in health characteristic cause digital divide among elderly in Finland.

1. BACKGROUND

Any age groups have adopted Internet trend as its utilization becomes more extended   not only in private services but also in public services and social activities (Scoreboard 2015; Suler 2004).

Popularity of internet have been accelerated by rapid advances in technology through content application (software) and hardware technology which enable people to access it using various devices and with lower cost (Kiiski and Pohjola 2002). However, elderly are still the least proportion among any other groups in benefitting from the Internet. For example, in Finland elderly whose aged between 55 -64 only 51 % have been internet user (Finnish Stat 2013).

Regarding with the phenomena, several studies have been analyzed many factors in which related with elderly and the Internet.

Previous studies have been conducted, for example in evaluating several demographic characteristics of elderly and how they influence elderly internet habit (Gatto and Tak 2008; Näsi, Räsänen, and Sarpila 2011). Other studies have been focused on internet impact in the elderly (Näsi, Räsänen, and Sarpila 2011; Blažun, Saranto, and Rissanen 2012). However, based on literature review in which conducted in 2013 (Arief et al. 2013), the authors have been focusing in exploring the physical factor in which undeniable factor among elderly.

This study is aiming to analyse the specific demographic characteristic in Finland in the way elderly adopt the Internet by using data from IKIPOSA project 2012.

There are research question which is being explored: Are there any difference between elderly who accessing the Internet and elderly who are not accessing the Internet in their health characteristic

2. DATA AND METHOD

This study used secondary data from IKIPOSA 2012-2014 project which was under collaboration between Eastern Finland University and North Savo Municipality with funding from European Social Fund. This project aimed to investigate aged productivity through several criteria, functional capacity, hobbies and exercise habits, social relations and well-being, and health and attitude. The questionnaire is a semi structured and the data was gathered through post based on Finnish Population Register Centre between 2012 - 2013. Total there were 5822 posted mail and the response was 2508 (42,9%) consist of two aged groups, 60s group (n = 1515) and 70s group (n=993). However, in this study the 70s group is excluded in connection with study purpose.

To analyse the data,, Mann-Whitney U test will be deployed for independent variables that have only two category and Kruskal Wallis test for independent variables that have more than two category to analyse whether there is a difference between internet user and non-internet user in terms of their health background and logistic regression was used with internet use as explained variable which is ordinal data (scale from 1 = daily to 5 = never) and those predictor health characteristic variables are physical environment health, physical condition or ailment factors which restrict sports, change habits for health reasons, how many units of the alcohol do you usually drink on those days, smoking habits, have bone fractures, satisfied with the health, suffered from insomnia, changes in serious illness, operation, disability, accident or fall, deterioration of hearing or sight, health rate and ability to move to analyse how health characteristic influence the use of the Internet among elderly.

3. RESULT

Using Mann-Whitney U Test for variable:

1.Physical Condition or Ailment restrict sport activities

U=227458, p = 0.002 Mean Rank group 0 (No) = 723.66, group 1 (Yes)= 786.59.

2.Having Bone Fractures diagnosed by a doctor in the adulthood.

U = 173183, p = 0.03. Mean Rank group 0 (No) = 711.16, group 1 (Yes)= 778.06

3.Changes during the past two years in serious illness,operation, disability, accident or fall.

U = 178815, p = 0.943. Mean Rank group 0 (No) = 745.36, group 1 (Yes)= 743.60

4. Changes during the past two years in deterioration of hearing or sight.

U = 126688.5, p = 0.13. Mean Rank group 0 (No) = 734.83, group 1 (Yes)= 803.64

It can be seen that there were three significant variables that have shown the differences between elderly who use the Internet daily to never use the Internet. In no 1, it is shown that people who have no physical condition or ailment which restrict their sport activities have lower in the mean rank that indicated in lower scale in internet use (start from 1(daily) to 5 (never). Therefore, the group 0 has been considered in more frequent Internet user than group 1 (yes). For variable no 2, it shows that there is significant difference between group of not having and group of having with the previous have more frequently access the Internet than the latter. Deterioration of hearing or sight is found to have significant differences between group who answered No in which have lower mean rank and in more daily Internet user than other group. On the other hand, variable of changes during past two years because of illness, operation, accident, disability or fall have shown no significant differences.

Using Kruskal Wallis H Test for variable:

1.Physical environment

$x^2(3)$ = 49,724, p =0,000 with Mean rank scores between 1056,82 for Not at all Healthy, 901,05 for Quite Healthy, 755,22 for Healthy and 674,77 for Extremely Healthy.

2 Changed habits for health reasons.

$x^2(3)$ = 2,152, p =0,541with Mean rank scores between 747,24 for Change of habits based on advice from a public health nurse, a doctor or someone else, 706,41 for Change habits on my own initiative, 721,13 for I have not changed my habits and 730,58 for I do not consider it necessary to change my habits.

3.Frequently drink beer, cider, wine or other alcohol beverages.

☉2(4) = 25,255, p =0,000 with Mean rank scores between 676,68 for drink 2-3 times a week, 716,63 for drink 2-4 times a month, 751,55 for approximately once a month or less often, 753,05 for 4 times a week or more often and 836,50 for Never drink.

4. Unit alcohol usually drinks.

☉2(5) = 23,914, p =0,000 with Mean rank scores between 608,53for 1-2 units, 638,79 for 3-4 units, 678,64 for less than 1 unit, 695,79 for 5-6 units, 750,56 for 7-9 units and 779,52 for 10 units or more.

5. Smoking habit.

☉2(3) = 29,517, p =0,000 with Mean rank scores between 666,54 for smoke occasionally (not daily), 699,50 for used to smoke but have quit, 713,26 for never smoked and 862,93 for smoke daily.

6.Satisfied with your health.

☉2(4) = 38,885, p =0,000 with Mean rank scores between 635,08 (very satisfied), 719,33 (Satisfied), 747,17 (Neither dissatisfied nor satisfied), 798,33 (Dissatisfied) and 1100,50 (Very Dissatisfied).

7.Suffered from Insomnia during the past month.

☉2(4) = 8,611, p =0,072 with Mean rank scores between 686,39 for fairly often, 724,30 for very rarely, 727,53 for Never, 822,40 for often.

8. Health Rate.

☉2(4) = 36,309, p =0,000 with Mean rank scores between 661,34 for very good, 708,44 for good, 772,61 for Neither poor nor good, 874,04 for poor and 1120,11 for very poor.

9.Ability to Move.

☉2(4) = 48,654, p =0,000 with Mean rank scores between 644,16 (very good), 718,86 (good), 816,56 (poor), Neither poor nor good (827,47) and 992,34 (very poor).

Likewise, Mann-Whitney U test method, Kruskal Wallis H Test analysis have shown that Physical environment variable has significant differences among group where Not healthy environment has fewest proportion in using the Internet and in contrast, extreme healthy environment has the lowest mean rank which mean it is more in in daily level in using the Internet. Similarly drink beer, cider, wine or other alcoholic drink have shown significant differences among group with the lowest mean rank is elderly who drink 2-3 times a week and they have accessed the Internet mostly among the other groups whereas never

drink indicated lower activity in using the Internet. The amount of unit alcohol usually drink have shown significant differences among the group where the least amount unit alcohol every drinking time have more daily frequency in using the Internet. In smoking factor, significant differences is clearly among the group and daily smoker has lower proportion in accessing the Internet compared to only smoke occasionally which is at the top of internet user followed by quitted smoker. Similar pattern exists in the variable both of health rated and ability to move where there were significant differences among the group where the group who have good in rate their health and movement ability have more frequent internet user compare to elderly who perceived themselves as poor. On the other hand, change habits for health reason variable have no significant differences.

4. DISCUSSION

Using analysis of variant for non-parametric data have bee provided with several findings in which have confirmed how several physical limitations are being common barriers in adopting the Internet as well as Dobransky and Hargittai (2006) who have found a similar case in USA. Several studies have been suggested that the need to improve cognitive skill and internet engagement through workshop or training (Blažun, Saranto, and Rissanen 2012; Hill, Beynon-Davies, and Williams 2008). However, this study have been extracted several questionnaire in which determined the possible of health problem among elderly which excluded other internet use determinant. Smoking, drinking, Bone problem or osteoporosis, Insomnia, Hearing and Sight Problem are common problem among elderly people (Huadong et al. 2003; O'Connell et al. 2003). As Huadong et al (2003) found how health problem among elderly caused cognitive impairment, there might be a connection between problem in learning new technology and lack of good health as it is not only because of lack of education as common demographical factor in determining elderly internet skill. However, as the use of secondary data has a limitation in structuring the questionnaire based on research question, further there will be necessity to exploring more the connection between these demographic factors.

CONCLUSION

The differences in accessing the Internet based on Health characteristic are significant in Finland based on this study. However, further analysis need to be conducted to have more accuracy in determining the impact of health condition in adopting the Internet.

Acknowlegment

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17. Development of a Robot Assisting Elderly People

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1. INTRODUCTION

Due to demographic changes the proportion of elderly people is increasing. For elderly people want to stay at home as long as possible though having problems coping with the demands of daily life, the assistive robots can help elderly people to live independently. By assisting in routine services such as bringing food and drinks as well as entertaining and monitoring the health status assistive robots also ease the care personnel's workload.

Fig. 1: "Roswitha" with two arms
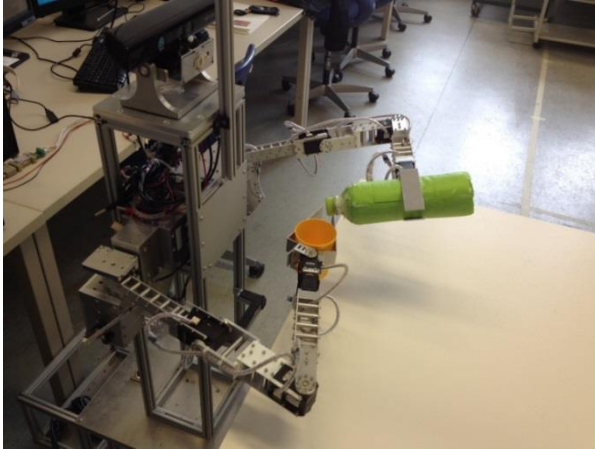
Our research project "Roswitha" (Robot system with autonomy) aims to meet these goals. In order to really assist elderly people, it is important that robot "Roswitha" is mobile, has a high level of autonomy and an intuitive human-robot-interface. It must handle objects with two arms in order to execute complex manipulator tasks. For dealing with research problems independently from each other we currently use two versions:

The two arms "Roswitha" (Fig. 1) operates stationary. Its main goal is to control the two arms cooperatively in order to execute assistive tasks such as grabbing a bottle and a cup and pouring the liquid from the bottle into the cup.

The autonomous - mobile version with one arm runs on four wheels. It is used to research on path planning, navigation and obstacle avoidance.

All programs of "Roswitha" are written in LabVIEW and it is implemented on a laptop and a real-time embedded system cRIO. The robot's height is about 1.3 m with a Kinect 3-D camera mounted on the top taking images in horizontal direction. A USB camera is attached on a rod of an additional height of 0.5 m in order to take images from above the robot's handling area in vertical direction.

2. ROBOT "ROSWITHA" WITH TWO ARMS

Each robotic arm consists of 5 joints driven by RS 485 controlled servo motors providing 5 degree of freedom (DOF) and a servo motor driving the two-finger gripper. Currently, we let "Roswitha" search for the bottle and cup by the vision system and then perform the grabbing and pouring operations which requires the use of just 2 of the 5 joints [1]. Hence, the inverse kinematics problem in order to set the angles of the joints to steer the gripper to its destination position, i.e. the position of the objects to be grabbed, can be solved geometrically [2]. However, more joints can be used in future if more complex handling operations need to be done.

Fig. 1: Block diagram of robotic arm's work flow
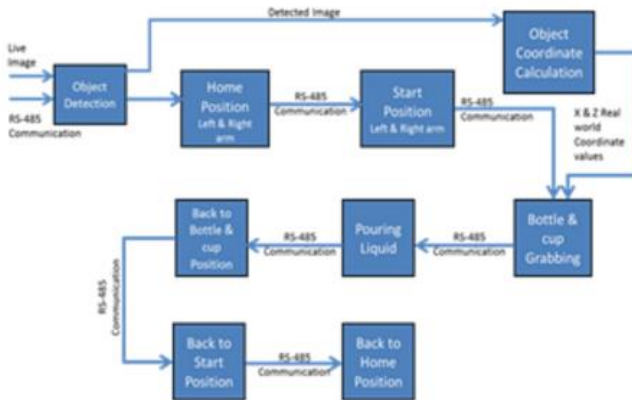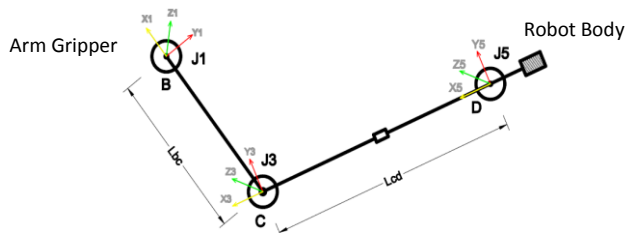

Fig. 3: Simplified system geometry

1.

The USB camera Logitec QuickCam Pro 9000 (resolution: 1600 x 1200 pixels) mounted on the top of the robot using an extension rod, that takes images from above the handling area of the robot arms. An image processing algorithm for object detection recognizes 2 objects, i.e. the green bottle and the yellow cup, by masking the pixels using color-specific thresholds in the Hue and the Saturation color plane. The x- and z- coordinates are calculated from each of the 2 object pixel clusters and are fed into the inverse kinematics algorithms.

The whole work flow is as follows (Fig. 2):

• Object Detection: From the vision system program the objects are detected and the pixel coordinates are sent to the object coordinate calculation function.

• Home Position and Start Position: Both robotic arms reach to the home position and then start position by using pre-defined trajectories angles.

• Object Coordinate Calculation: After getting the pixel values of the detected objects the real world coordinates are being calculated.

• Grabbing Bottle and Cup: Inverse kinematics is used to calculate the angle values for joints J3 and J5 (Fig. 3) which leads the arms to reach to the bottle and the cup.

• Pouring position: The arms move towards the pouring coortdinates, that the liquid is poured into the cup.

• Returning Bottle and Cup: Bottle and cup are put back on the table.

• Back to Start Position and Back to Home Position: Arms are set to start and then to home position.

3. AUTONOMOUS – MOBILE ROBOT "ROSWITHA"

The application scenario for the autonomous – mobile version of "Roswitha" (Fig. 4) is to move from a start position, e.g. the chair where the elderly person sits, to a goal position, e.g. the kitchen, where the robot fetches a bottle or food by means of the computer vision system and the arm and brings it to the elderly

person. In future, mobile "Roswitha" can be improved by a 2nd arm taking advantage of our research with the two – arm version. Currently, "Roswitha" moves autonomously in the Laboratory of Autonomous Systems and Intelligent Sensors of Frankfurt University of Applied Sciences.

Fig. 4: *Mobile "Roswitha"*

Fig. 5: *Laser scanner distance measurement for a distance range of 0 to 7725 mm and an angle range of -45° to 225°*
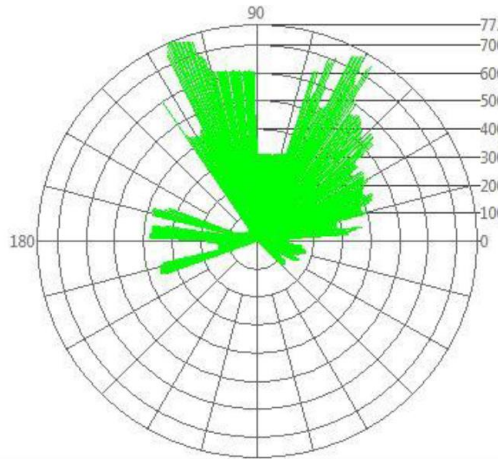
"Roswitha" front wheels are driven by a Maxon motor RE40 each while the two rear wheels run freely. A Sick laser scanner LMS 100 is mounted at the lower front whereas the USB camera is mounted on an extension rod connected with the mobile robot.

"Roswitha" navigates from start position to a defined destination position by means of an A*- path planning algorithm calculating the optimal path. The A*- approach uses a map of the room or floor containing areas of known obstacles and areas the robot is not allowed to enter. The resolution of the map grid cells is 5 cm x 5 cm. knowing the optimal path "Roswitha" travels to the destination.

The further "Roswitha" travels the larger the position get errors. Hence, 2 stripes of retro reflecting foils of the size of 15 cm x 20 cm each are used as landmarks for position updates. They

are placed at walls and furniture to be detected by the laser scanner (Fig. 5).

The procedure of navigation and updating robot position is as follows:

• While travelling along the trajectory calculated by A*- path planning [3] the environment is scanned permanently by the LMS 100 sensor.

• Calculate the mean remission out of all reflections from the whole scanning area.

• Remissions larger than 1.3 of the mean are considered to be caused by landmarks.

• If 2 strips of a landmark have been detected the distances to the robot, r1 and r2, and the angles to the robot's main axis, θ1 and θ2, are stored.

• "Roswitha's" current position is updated by means trigonometry using r1, r2, θ1, and θ2 as well as the know coordinates x and z of the landmark.

• The A*- path planning is repeated using the updated position as start position.

4. EXPERIENCES AND CONCLUSIONS

The stationary two – arm "Roswitha" robot performs the task of detecting and grabbing cup and bottle as well as pouring the drink into the cup satisfactory. Visual object recognition by means of colour plane thresholding detects objects within the field of view and calculates positions with a low error margin provided the illumination conditions stay constant. The inverse kinematic algorithm delivers joint angles precisely enough in order to grab the objects. However, improvements are required in order to achieve object detection to be almost independent against varying illumination. Additionally, mechanics needs to be improved in order to reduce maintenance time.

Mobile – autonomous "Roswitha" moves reliably to a pre – defined destination point provided all the landmarks are detected precisely enough. Some poses of "Roswitha" such as

large distances to landmarks or a relative angle almost perpendicular to landmarks result in miss detection of these reference points. We also sometimes observe a high error in landmark measurement. As a result, "Roswitha" sometimes either collides with the table where the objects to be grabbed or stops in a distance too far. In order to overcome these problems, we plan to research on SLAM algorithm in order to cope with measurement errors. Sensor fusion in order to use other kinds of landmarks will be a research focus, as well.

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18. Trust on leadership in globalization era: Perspectives of three-generation workforce

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This paper discusses how the generational difference influences the trust on leadership in globalization era. In addition, further insight is required to understand how the workforce of three generations (Gen Y/ Millennials, Gen X, and baby boomers) perceives each leadership traits in multinational organizations operating across globe. This article review and integrate the literatures on leadership, trust and generational theory. Empirically, it studies the perceptions of generational difference on trust due to leadership traits and how the three – generations perceives it. The research data was collected by qualitative interviews and primary textual data from employees of three generations working in

multinational organization. Data is analysed by making thematic and content analysis. The findings suggest that the different generation workforce respond/perceive differently under same leadership style, behaviours and values. The paper contributes to the leaders of globalized era to coach them to adopt and address development strategies of leadership for each generation styles, behaviours and values, aiming to develop trust in generational workforce. It also contributes to Human Resource Engagement policies to develop practices for leadership development to found a common ground of employee engagement for three-generation workforce. It is challenging but the leadership traits and HRM practices should be designed aiming to direct the three generations to organizational success goal hand to hand with employee growth rather than "me-me" approach.

1 INTRODUCTION

1.1 Trust in globalized era

Trust has many faces and levels, yet its definitions are ambiguous and no universal definition exists (McEvily et al., 2003). Though it is an intangible asset (Savolainen & Lopez-Fresno, 2013), but an important element in every association. Trust is also an emotional state, which compares to perceptible security in relation to other's purpose in particular atmosphere. Numerous theories in trust have laid their foundation on the social exchange theory (Whitener et al., 1998), assuming that trust generates through the mutual profit between the partners. Foundation of social exchange is laid on the standards of reciprocity, which assumes that in relationships people (parties of relationship) support and not hurt those who have supported them.

Demonstrating trustworthiness by competence, integrity, benevolence, and credibility makes a difference in daily

leadership style (Mayer et. al.) and helps in creating meaningful work. Leaders create trust within organization through/by their trustworthy behaviour (Häkkinen, 2012). In the knowledge-intensive society, the focus of HRM (human resources management) is more inclined towards competencies (Savolainen & Lopez-Fresno, 2012). Employees trust towards the system in which they are working helps them to validate the importance of day-to-day work. Actually, there is not so much difference between employees´s trust towards organization than their trust towards their leaders; employees´s trust is not unidimensional, but multidimensional (Häkkinen, 2012). Therefore, understanding the kind of trust among peers and trust between their direct managers plays a key role for an organization striving to achieve highly engaged and competitive workplaces (McAllister, 1995).

Trust in globalized context is still scarcely studied (Fulmer & Gelfand, 2012) despite of the prolific research on trust in the last decade. Globalization during the last two decades has expanded organization 'boundaries and presence' across different cultures, continents and territories. This expansion has enabled the organization in tapping new and unexplored markets and maximizing the value to stakeholders. Trust may act as intangible, emotion-based, 'uniting glue' in business and other organizations (Savolainen & Lopez-Fresno, 2013).

1.2 Trust in Leadership trait/behaviour for different generation

The diversity of workforce obligate leadership trait to shift in leadership attitude, policy and implementation. The significance of trust in leadership has been acknowledged extensively in prior research work and business practices. Trust is the essence of leadership, which act as a foundation for functioning relationships and co-operation. . Trust on leadership in globalization era is essential to operate in innovative environment for organization success.

Due to generational differences, the preferences of individuals for leadership behaviour/traits necessitate a change in leadership

approach, attitude, policy and implementation. Traditional leadership style is not motivating to all three generational workforces. The new force of leadership requires new skills, experiences, education, and compatibility with today's technology (Rodriguez et. al., 2003). Boomers and X-ers are strongly aware about the changes in work culture and are willing to upgrade their knowledge and skills in the era of knowledge economy. Today the organizations are purely focussing on the knowledge and skills of individuals, and hiring the skilled workforce. Subsequently, studies are continually arguing the importance of leadership style for modern workplace, and its need to shift from traditional hierarchical base to knowledge based leadership. As the skilled and intellectual workers in today's workplace do not consider themselves as subordinates or the followers, and cannot be supervised as observed in theory X and Theory Y. The question arises:

How common grounds of leadership be developed to lead all generations?

2   LITERATURE REVIEW

2.1 Generational difference in one workplace

Generational differences arises due to cohort of individuals born into a particular social and political period will have unique values, trust and peer traits (Borges, et.al. 2006). Generations are defined as individuals born and living in same era sharing and believing in same social and political norms (kupperschmidt, 2000; Smola and Sutton, 2002; Jena, 2016). These characteristics define individual's personality, their likes, dislikes, and desires. This generational difference defines one's personality, which differs from one and other and issues arises in understanding each other perspectives (Gursoy, et.al. 2008; Jurkiewicz & Brown, 1998).

2.2. Generational Category

This paper focuses on three generational groups, which are commonly found in today's workforce: Baby Boomers (Boomers), Generation X (Gen X-ers), and Generations Y (Gen Y-ers, millennials or next generations). Few key values of these three generations are in Figure 1.

Boomers	**Gen X**	**Gen Y**
Birth: 1946-1964	Birth: 1965-1980	Birth: 1981-2001
Authentic, Competent & Competitive	Adaptable, Competitive, & Competitive	Ambitious but not fully engaged. Multi-skilled and sociable with technology; Participative but with individual
Equal Rights & Opportunities; Team Players	Highly educated, Innovative and independent; Individuals	
Motivation: Being valued and needed	Motivation: Freedom; Limited Rules	Motivation: Company of bright people; New opportunities; Utilization of skills
Leadership Style: Flat Hierarchy; Quality Leaders	Leadership Style: Competent; Respect knowledge not position	Leadership Style: Competent; Confident; Empowered

Exhibit 1: Key characteristics and value of three generations in focus.

Source:

http://www.wmfc.org/uploads/GenerationalDifferencesChart.pdf

The above exhibit 1, shows some key values of all the three generations that are prevalent in today's workforce. These values define their personality and their requirement for leadership trait.

3. EMPIRICAL STUDY

3.1 Research Methodology and Data Collection

The empirical study was conducted with employees from various multinational organizations who have travelled across the globe and has worked with various leaders. The qualitative data collection was done through interviews and primary textual data from employees, leaders and line managers. Qualitative data in comparison to quantitative data provides in-depth

understanding of the situation understudy. Qualitative approach drives the research on the views of the human capital. It helps in understanding the insight, implications and the mind-set of the participants (Savolainen 2013).

The interviews were conducted (by Priyanka) outside office hours with the interviewees' to avoid a fear of being in office that hold employees back for not to open freely during conversation. The interviews were recorded and some additional written notes were made. The purpose of the notes was to make sure that all important points and aspects were kept in purview and covered. The notes also supported and guided the researcher's analysis of the interview data.

The following important research questions guided the data collection:

- What leadership style to follow for the generational difference in one workplace or strategies for common ground?
- How trust is effected by leader's trait/leadership style?
- How HRM contribute to align leadership trait with generational workforce?

The data analysis began with reading, listening, examining data and then analyzing the same on topic bases in the card index. Topics identified during the data collection were bifurcated from each other. Finally, the topics were analyzed one-by-one. During the analysis, the topics had to be reconstructed and some were incorporated and combined in one renamed topic.

4. RESULTS

4.1 Trust in leadership: Strategies for common ground

Value – Centered Leadership goes very truly hand in hand with transformational leadership (Maier et.al. 2015) and is gaining importance in this paradigm shift. According to Kraemer (2011), the value-centered leaders identify the significance of self-assessment and are eager on understanding the values of others as crucial constituent of effective leadership practice. Trust in leadership is one of the major aspects of employee satisfaction in organizations. Every organization according to their workforce generations existence should define a leadership model based on

values of each generations. As said earlier, each generation has their own values and ethics. Value–Centered leaders encourage teamwork and relationship, delegate job and responsibility within the group and extend enthusiasm and confidence to encourage teamwork (Maier et.al. 2015). It is also believed that value–centered organization are one of those workplace that has high moral range on leaders and their ability to affect positive change in generational difference workforce, while achieving common organization and individual goal (Shatalebi & Yarmohammadian, 2011).

Three qualities every leader should posses to lead the workforce of three generation:
- Authentic
- Innovative
- Communicative/connected

4.2 HRM policies and practices for leadership development to deal with three generations

In the fast moving economy, Human Resources (HR's) need to move faster about what it can and should do, in order to make organization effective. While discussing HR in terms of three generations, should talk about multilevel with multiple generational values. HR in today's time need to operate in dynamic environment where they need to focus, that all employees are engaged even during the challenging times (Boudreau & Ziskin, 2011). It is difficult to manage different generations in workplace, but there is an opportunity for the organization and HR to capitalize on assets of each generation for competitive advantage (Lieber, 2010).

HR strategies should contribute on:
1. Developing systems, processes, and policies that encourage value-centric leadership. Learning and development is one of the major tools that an HR of every organization should use in order to develop the required leadership trait in organization.
2. Recruitment of new leaders or promoting the potential employee who possess the leadership quality can be one of the major assessment done by the HR's. For e.g. Employee with

outstanding technical knowledge, but lesser people skills should be given technical promotions and grooming for people skills.

3. Importance of leadership: To achieve effective leadership, generating the importance of leadership in system is very important. Reflecting how important the effective leadership management is for dealing with the multifaceted, dynamic world in which organization are operating.

5. CONCLUSION

To conclude, this paper throws light on how generational difference in a multinational organization influences the trust on leadership. This paper combines the literatures on leadership, trust and generational theory. Empirically, it studies the perceptions of generational difference on trust due to leadership traits and how the three – generations perceives it. The research data was collected by qualitative interviews and primary textual data from employees of three generations working in multinational organization. Data is analysed by making thematic and content analysis. The findings suggest that the different generation workforce respond/perceive differently under same leadership style, behaviours and values. Leaders facilitate the generation of a trustful workplace climate that supports creativity and innovativeness. Trust development serves as influential force and a tool for effective leadership (Savolainen, 2011b; Savolainen & Malkamäki, 2011).Workforce is the vital resource of organizations that is comprised of talent & skill of various generations. Leaders by understanding the need of each generation, how they want to succeed in their career can increase employee productivity, morale, motivation and retention (Kogan, 2007).

Moreover, this study is just one step towards the understanding of three generations behaviours and perception towards leadership trait and its affect on trust between leader-follower and within organization. Identification of common grounds of leadership for three generations is likely to result in development of leadership strategies that enhance employee moral, motivation and productivity by lowering generational conflicts at workplace. Thus this study hold the potential for

organizations and leaders to upgrade the leadership trait and understanding values of each generation and their requirement. Results will serve as foundation for further studies.

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19. Experiences of the post-graduate nursing students about well-being at work and of good management and leadership at the beginning of the master level studies

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Abstract

In this article the interest is to indicate the post-graduate students' experiences about well-being at work the beginning of the studies. The other interest is to the students' expectations concerning management and leadership. This article is based on a qualitative study in which the students wrote essays and content analysis was used to discover their expectations and experiences.

According to the studies work well-being increases work productivity. Therefore, the previously mentioned knowledge has increased the nurses' expectations and assumptions concerning management and well-being at work in the field of health care in Finland. In the study the interest was to find out the post-graduate students experiences and ideas about well-being at the beginning of the studies. The students had several years or minimum of three year experience before continuing the master level studies. The other interest of the study was to find out the post-graduate students' expectations concerning management and leadership at the beginning of the studies.

The first aim of the study was find out the current views of well-being at work. Also the aim was to clarify expectations of good management and leadership at the beginning of the master level education.

It is important to learn from the experiences and to focus on the good attitudes and the elements of work well-being and leadership and management at the same time along the students' studies.

In this research, the main interesting results were that interaction abilities and skills were clearly the most important quality of a good manager. Well-being is very important part of the employee, work community and work productivity.

Key Words: Well-being, well-being at work, management and leadership, health care, master educationbackground of the study

1. Background

Finnish social welfare and healthcare is going through huge changes at the moment. The government of Finland has agreed a Policy approach to healthcare, social welfare and regional government reform. The following policy approaches that will guide the drafting of legislation on (1) the reform relating to the organization of healthcare and social welfare, (2) the reform relating to freedom of choice and multisource financing, and (3) the regional government reform. The government points out that a key aim of the healthcare, social welfare and regional government reform package is reducing the public economy

sustainability gap by EUR 3 billion at the beginning of 2030. It should be EUR 3 billion less than at the moment. (Ministry of Social Affairs and Health & Ministry of Finance 2016, 1.)

The personnel in public and private healthcare and social welfare organizations will be the key players for achieving the goals of the reform. The government considers it important that organizations representing the personnel and personnel members themselves participate in the planning and implementation of the healthcare, social welfare and regional government reform package. Therefore the personnel's management and work well-being as well will be one of the real life's focus of the reform. Well lead workers of social welfare and health care are in the huge role of reducing the cost of the public economic sustainability gap. In Finland the promotion of leadership and well-being and health are the Government Programme's strategic priorities. The aim is the role of inter-sectoral health promotion and early support will be strengthened in decision-making, services and working life due to legislative changes and improved delivery. (Cf. Koivisto 2015; Ministry of Social Affairs and Health & Ministry of Finance 2016, 3.)

Furthermore, the future of working life and working condition will be in the constant change in social welfare and healthcare. For example, there will be increasing acceleration of technological progress, advances in ICT and robotism affecting to the positive and negative outcomes on working conditions brought about by these trends. The negative impacts of this development will include increasing strain on employees and constant change in the working environment, unpredictable health effects demands to master large quantities of data, ethical questions, and problems with data security. The polarization of work and in working life will be extensive and profound. The work in social affairs and healthcare will be flexible and the needs of employees have to be taking care of. (Ministry of Social Affairs and Health 2015, 4 - 5.)

2.   .Leadership and Management
Leadership and management involves demands for wide-ranging competencies. Responding to these is difficult especially in small organizations that have no specific resources in HR (human resource)

administration. In leadership the manger has to master vast amounts of information, people's dependency on technology, operating within organizations and networks, internationalism and multi-culturalism cannot be easily combined with the traditional basic duties of managers. The relationship between employee and employer changes as workers take more responsibility for their own actions and, on the other hand, offer their own expertise in virtual networks. (Beardwell & Clark 2010, 4; Manka et al. 2010, 8 - 9.)

One part of human resource management is self-management. All leadership begins with self-management. After we have learnt to manage ourselves we are able to manage the others. The aims of self-management are the well-being of the employees and their self-implementation. In the future employee's need to take more charge of manage themselves. As well, the workers are forced to take on more responsibility and to lead themselves. Good self-management skills add professional and personal effectiveness. (Sydänmaanlakka 2010, 5, 29.)

Interaction skills are very important in nowadays especially in multicultural leadership (Tiainen 2015a). The other field where interaction important is project management. Leadership skills are seen effective to proactive planning, the clarity of planning, and shared understanding between all those involved proved to be particularly important. Based on project co-operation experience, we would emphasize the importance of interaction and communication in general as well as sharing of experiences for everyone's benefit. All in all, it could be concluded that there is more power in co-operation than doing things alone. Shared brainstorming and shared ideas make the project proceed fluently. (Tiainen 2015b; Tiainen, Lyytikäinen, Vesa, Al-Sharkawi, Marwa, Ndomba & Mooka, 2016.)

The Finnish researches Laaksonen, Niskanen and Ollila (2012, 125 - 127) have presented in their article the quality of good leader. They presented that good abilities of leader are: justice, encouragement, impartiality, consistency, assertiveness, accessible, open and economic. Directors who have the capability to understand the management are theoretically better than to lead the "semi-official" amateurs. Managers who have a

capacity to understand management theoretically should be more able to manage than inspired amateurs (Glegg, Kornberger & Pitsis 2012, 227).

3. Method of the study

Content analysis can be used to make many kinds of research, and it is a scientific method that aims at conclusions, particularly written, consulted, or as seen research data analysis. It can also be regarded as a loose theoretical framework and a basic data analysis method in all traditions of qualitative research (Tuomi & Sarajärvi, 2009, 91). Content analysis seeks to explore the phenomenon of the image with textual descriptions. The aim of content analysis is to analyze the research data systematically and objectively, so that it is suitable for analyzing the unstructured data. The material may be in well-defined and concise form the meanings of the phenomenon of seeking. The advantages of the sensitivity of the test are the analysis of the phenomenon, the aim is to understand the actual content of the material. (Tuomi & Sarajärvi 2009, 91 - 122.)

This article is based on research data-based analysis, so that the material is aimed at creating a theoretical entity. Data processing is based on inference and interpretation, where the material is initially broken up into parts, conceptualized and assembled again in a new way as a logical entity. The analysis will be included in the messages hidden (latent content). Thus, the unit of analysis is the word, combination of words, sentence, statement, or the idea of the whole. (Tuomi & Sarajärvi, 91 - 122.)

Using content analysis is a three-step process: 1) Reducing a reduction of the material as described above, 2) a grouping and clustering 3) abstraction. Clustering takes place encoded original material carefully, looking for similarities and / or differences in describing the concepts. Similar concepts are grouped and connected to the ruling class that are represented with a title. Abstraction separated from the point of view of research relevant information, the aim of which is to form the theoretical concepts. Abstraction continues combining classifications as long as it is possible to file. The conclusions the aim of the researcher is to describe exploring on their own point of view. In the study, the results are presented to illustrate the concepts of the empirical material. (Tuomi & Sarajärvi 2009, 91- 122.)

In the study qualitative method was used and 20 students wrote essays which were analyzed. The final data was 200 pages and analyzed by using content analysis. The analyzing was started by reading through the essays by both of the researches. In the study the interest was to find out the post-graduate students experiences and ideas about well-being at the beginning of the studies. The other interest of the study was to find out the post-graduate students' expectations concerning management and leadership at the beginning of the studies.

Currently, two principal uses of content analysis are evident. One is a quantitative approach often used. (Graneheim & Lundman, 2004) Interest of mixed methods research is growing rapidly (Polit & Beck, 2010) and mixed methods can be useful in nursing (Öslund, Kidd, Wengström & Rowa-Dewar 2011). Even if in this study it could have been possible to count similarities of respondents answers the researchers decided to use traditional content analysis.

2.RESULTS OF THE STUDY

2.1 Results of Well-Being
The experiences of work well-being of the students can be classified into five different categories: the effects of the personal needs of the individual and work well-being, the joy of work and job satisfaction effects of work well-being, the factors affecting work well-being arising from the content of the work, the impact of management and workplace well-being and the future challenges of well-being.

2.1.1 The effects of the personal needs of the individual and work well-being
The students brought in their replies highlighted the need for new challenges. They were willing to learn new things and make further progress in their work, because, among others, in a professional manner was achieved in the current job management. The professional was at

that level that the performance of tasks required not so much effort and it was as if formed from controllable routines.

The students also realized how much well-being depends on the personality of their own. They described their personal responses to the positive influence affairs, development and persisted relentlessly actors, as well as self-direction, and confidence in their abilities to cope with difficult situations, and to make oneself important right kind of based on value choices. Multi reflected the responses to it, how they themselves felt, and had received encouragement refers to only the activities their management skills.

2.1.2 The joy of work and job satisfaction effects of work well-being

The joy of work and job satisfaction was seen as an important part of employee well-being. Some of the respondents considered themselves fortunate in existing operations and their motivation was high, which was reflected in the eagerness, activity and happiness at work. A few respondents pointed out how their great benefits are employers and they enjoy their work. They felt they were valuable professional artists, who were heard. What brought joy to the students the opportunity was to participate in the development of their work and act in such a way as active work of influence, particularly in the private sector. The work and the content of the work immensely bring joy as a reward the nurses and the entire work community and leads to job satisfaction.

The pleasure of working and job satisfaction goes together in the terms of well-being. When the above-mentioned track points will work out, work invariably brings the joy of work, job satisfaction and work well-being.

2.1.3 The factors affecting work well-being arising from the content of the work

Some of the students drew attention to the work to be fragmented and disproportionate amount of work to be done. In this case, the effects of

well-being are debilitating. The work can be also a challenge in development work and the demanding self-direction, which is not perceived as a negative thing. Especially in project work was seen as a positive increase of contacts and relationships.

Some of the respondents felt the current job and the content of it do not produced satisfaction. Many thought the work is not meaningful and they had more to give. Work was also not interesting and motivating. Thus, the content of the work factors was not challenging enough, and there were, as well, other personal reasons that decrease work well-being. Respondents also experienced threats and fears, especially fixed-term contracts and related to colleagues the opposition of the new things that may even lead to inappropriate treatment.

2.1.4 The impact of management and workplace well-being

Good leadership will switch all the positive factors affecting the well-being at the above-mentioned one as a result. Beneficial leadership takes note of, the joy of work and the work of employee personal needs and security of person satisfaction, promoting well-being at work with regard to content as well as the effects of workplace management and attention to the well-being assisting in the future.

In the study emerged that bullying was a factor lowering job satisfaction. The superior either bullied or bullying was not believed to occur in some of the cases. Bullying occurred in such a way that the person was not invited to the meetings, and issues brought to the attention when a worker was excluded from access to information and the group. In these situations, the supervisor could not be trusted. Bullied workers felt powerless and they decided to change jobs.

The previously mentioned factors decreased job satisfaction. The whole work communities affected by bullying and workplace atmosphere was poor. Students' responses revealed that the community, which does not consider that they belong, to reduce the experiences of well-being of the meaningfulness of work. To experience community spirit is very important for the employees.

2.1.5 The future challenges of well-being

For the skilled and committed workers the well-being of the employee it is important to take account to all of the previously written factors. In the goals of the work efficiency, the attention must be paid to personnel resources and work load. In addition, the need to pay attention to personnel training and the work as a whole to think about the needs of the employee-friendly way, as shown in the results above.

2.2 Results of Leadership and Management

Management and leadership were seen in the various ways depending of the students' work experience and work positions. Most of the respondents gave the example qualities of a good manager. The respondents were given the qualities of the example and skills of a manager.

The mangers' qualities were seen mostly through human resource management. The most important quality was interaction skills. Almost all of the respondents brought the issue of interaction in day light. The strategic management was also seen in important part. Unbiased and manager's own development were seen in the important role.

Leadership traits were seen primarily through human resource management (human resource). The most important feature of director held on interpersonal skills. Almost every respondent highlighted interpersonal skills. Was also seen as important strategic management. Equity and leader self-development was also considered important.

he respondents' gave also various aspects of what is good leadership and management is. The change management were seen in important role. In the research one comments of the respondent was seen the importance of theoretical knowledge of leadership and management. The respondent appreciate management education as the way to achieve expert skills in management.

The leader is an example of how to make opinion for the change and it is effecting for employees and their reactions to change. As we mentioned earlier the respondents appreciate management education in the other hand respondents sought that management can learn by doing and continuing development. The respondent also saw that the

authoritarian management is history and certain time have certain management style. Self-management and development start effective actions and if you want to be an effective leader you need to manage yourself. The development in quality on management is a lifelong process.

In the Table (1) the examples of the good abilities and skills of manager are seen.

Tale 1: The good leadership and management quality and skills

Interaction skills	Manager's properties	Strategic manage-ment	Manger's self-develop-ment	Management of individuals
Good interaction skills	Impartiality Justice	Good cooperation relations	Self-development Professionalism	Ability to lead individuals
Accessible	Reliable moraly acting	Clear picture of the activities and the whole	Takes care of his own mental and physical balance	Familiar with subordinates and their abilities
Good interpersonal skills	Giving responsibi-lity, is self-responsible, not highlight her power	Binds the employees to develop the unit's activities	Self-reliant and self-esteem is in order	To respect, trust and appreciation of employees
The ability to empathy	Enabler, inspirer, motivator, an encourager flexible, gives feedback	reasons for the decisions openly	Has achieved a leadership training management expertise	
Listens to employees	Finds out the solutions to contradictions, gives negative feedback in a constructively	Incrreases optimism	Evaluates critically her own actions and is able to receive feedback	
Is present	Promotes well-being of employees and creates a good atmosphere	Manages the information and that in the workplace is ensured transparen-cy	Identify the organization's values in order to be motivated and able to motivate herself	

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respondents thought there will many management challenges in the future. The digitalization in health care is a big challenge and needs a lot of attention in the near future. The manager need to be also more innovative in the future. In the future diversity management take more attention as well the age management is emphasizing. Multi-professional management is also coming in

the health care sector. The growing internationalization brings new challenges to health care in future. Managers need many new skills to be ready for future management demands.

CONCLUSIONS OF THE STUDY

It is important to learn from the experiences and to focus on the good attitudes and the elements of work well-being and leadership and management at the same time along the students' studies. The students strongly highlighted the need for new challenges. They are very willing to learn new things and make further progress in their work. In health care, need to pay attention to the fact that employees have the possibility of career advancement and self- training. They also realized how much well-being depends on the personality of their own. It is precisely in relation to one's self-reflection and the role of a team player is essential: How can be contributed to his own self, and a good atmosphere throughout the workplace? Good leadership throughout the work is the evident base for the employee and bullying must be taken seriously in health care management. Well-being in the work increases the individual and the entire workplace productivity. It is very important part of the employee, work community and work productivity.

In this research the main interesting results were that interaction abilities and skills, justice and impartiality were clearly most important qualities of good manager. The students expressed their high-quality management and interpersonal skills fairness leader. In addition, the need for the self-development of the director was emphasized in the answers. The manager should take care of her self-management skills in working conditions and the continuous development. Change is constant, so the leader must have a good vision of the future and be able to react to them. In the future, as well as the manager and the employee must be capable of self-management.

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20. *Taking care of older people's resources in home care – the sum of knowledge, skills and realization*

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Abstract

Most older people want to live meaningful lives in their own homes despite impaired abilities and the aim of home care services, when required, is to enable them to live at home for as long as possible. That requires home care professionals to recognize clients' individual needs and resources and take these into account while delivering daily care. However, there is a lack of research based on evaluating practice in older clients' daily care.

The aim of this study was to describe and evaluate the ognition and realization of older people's resources and individual needs in daily home care services from clients' and home care professionals' perspectives.

The study consisted of four phases. The first was a systematic literature review of international articles (n=17). The second included focus group interviews of home care professionals (n=32), and the third consisted of the analysis of older home care clients' care and service plans (n=437).

The fourth phase included video-based stimulated recall interviews of older home care clients (n=23) and practical nurses (n=14). The data from the systematic literature review and interviews were subjected to inductive content analysis and care and service plans to documentary analysis.

Older people were well aware of their resources, as were home care professionals, and these were described multidimensionally by both parties. However, there was an obvious gap between awareness and everyday practice. Current home care services are based on daily routine care and emphasize only clients' physical needs and ability to function. In order to be able to promote older home clients' living at home, the provided home care services need to be individually designed to take into account clients' resources and their perspectives on meaningful and inspirational activities.

Keywords: Aged, Home care Professional, Home care Services, Home Nursing, Older People, Resources, Qualitative Research

1. INTRODUCTION

Most older people want to live meaningful and healthy lives in their own homes (Hochhalter et al. 2011). For home care professionals, awareness of multidimensional approaches to older people's health is an opportunity to recognize the individuality of older people and their resources and thus to find suitable ways to support their health as well as resources and everyday life at home (Turjamaa et al. 2013).

Although studies have provided descriptions of older clients' resources from the perspectives of home care professionals and older clients (Eloranta et al. 2010), there is a lack of research based on evaluating practice in older clients' daily care. In addition, there is a need for more knowledge of older clients' daily care as a whole to develop home care and services that promote clients' living at home.

The aim of this study was to describe and evaluate the recognition and realization of older people's resources and individual needs in daily home care services from clients' and home care professionals' perspectives.

2. METHODS

Participants, data collection and data analysis

A systematic literature review consisted of 17 selected studies (Turjamaa et al. 2011). Focus group interviews were held with 32 home care professionals (Turjamaa et al. 2013) and participants in video-based stimulated recall interviews consisted of 14 practical nurses and 32 clients (Turjamaa et al. 2014). In addition, documentary analysis of older home care clients' care and service plans (n=437) was conducted (Turjamaa et al. 2014). Data were analysed separately using both quantitative and qualitative methods (Hsieh & Shannon 2005).

3. RESULTS

3.1. Individual resources of older people

Analysis identified two categories of older people's resources: personal and external resources. First, personal resources included individual experience of human dignity, health condition, life satisfaction, sense of coherence and positive attitude towards life. Second, external resources consisted of home, economic situation, social relationships and societal resources.

On the whole, both clients and professionals considered clients' resources significant. Both groups' descriptions of resources were largely similar. However, there were some differences that warrant attention. First: the resources of social relationships and elements of meaningful life came up most frequently in the older people's descriptions and can be described as both personal and external resources. Whereas, descriptions of

professionals focused on the home, economic situations and social relationships. Nevertheless, most professionals noted that resources needed to be balanced: clients living at home should not be pressurised to use their resources and, on the other hand, they should not be promised too much by their current home care services.

3.2 Taking into account older clients' needs and resources in daily home care

In the view of clients and professionals, home care services had an organisationally-driven meaning in that services consisted of the activities of daily living including routine, mechanical medication and life-sustaining nursing care.

Additionally, clients' and professionals' descriptions of daily care were similar: getting clients out of bed, assisting them to use the toilet, helping them to dress and serving them breakfast. Professionals also observed that care was based on a philosophy of doing tasks on behalf of clients, which means that their work was mechanical and standardised and therefore clients' abilities to take part in everyday activities were forgotten.

However, despite the routine-like nature of daily home care services, both clients and professionals found a shared positive connection in daily care that emphasized confidentiality and the long-lasting relationship between clients and professionals. Clients especially emphasized that professionals' home visits enabled them to share thoughts about personal issues.

4. DISCUSSION

The results showed that both clients and professionals were well aware of clients' resources. However, there was an obvious gap between awareness and practice in terms of taking into account clients' needs and resources in daily care. On the other hand, it was challenging to concretise clients' resources, especially in daily care.

The clients described social relationships as significant resources. They considered that the effects of social relationships

had significant dimensions for the quality of life and strongly influenced elements of meaningful daily living, a finding which is in accordance with earlier studies (Low & Molzahn 2007, Eloranta et al. 2010). Furthermore, a lack of social relationships increases loneliness and depression, which might lead to hospitalization (Low & Molzahn 2007).

In contrast to clients' descriptions of their resources, the professionals' views of clients' needs and resources were substantially limited to care and services in terms of basic needs. Additionally, professionals' working methods in daily care were based on an illness-centred approach that focused only on clients' physical needs and abilities. Less attention was given to social and psychological resources.

In summary, it is evident that older clients' resources will become one of the most relevant elements in the provision of future home care services, because home care that does not consider clients individually cannot answer the forthcoming challenges. Additionally, on the organisational level, there is continuing discussion about methods of providing home care services for older clients in the future.

5. CONCLUSION

Current home care services are based on daily routine care and emphasize only clients' physical needs and ability to function. Home care professionals have knowledge about older clients' resources but the recognition of clients' situations is incomplete and does not address the subject of their individual needs and resources. In order to be able to promote older clients' living at home, the home care services provided need to be individually designed and must take into account clients' resources and their perspectives on meaningful and inspirational activities.

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21. The challenges of the digitalized e-learning processes in the changing learning culture for the nursing students

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This article presents results of a survey of third semester nursing students, as regards surgery medical courses held in autumn 2014 and spring 2015. It was a pilot study, which still continues. Development of the courses was guided by the online university medical studies pedagogical model that allows students to learn to search information, and to form an overall picture of what they should know as a nurse in primary health care or specialized medical care. The pilot's aim was to gather information for self-development of the students and the learning environment of the course. The main objective was to enable student-centered learning, where the learners take responsibility for their own learning and are capable of constructively using critical thinking skills and a critical approach to what they have learnt in this matter.

E-learning and remote guidance have come to our world to stay. Demanding intellectual performance and extensive educational materials will require constantly evolving self-regulation skills of students. In this study it was clearly shown that the above-mentioned self-regulation skills are developing and will continue to develop, and will require learning cultural changes for the new innovative learning culture. Information and communication technologies applied in teaching and learning require the introduction of new pedagogical methods. The student-centered work methods combined with the changing role of the teacher lay the foundation for new ways to learn. The teacher's task is to guide the future activities in support of the direction of learning. Change is always a challenge, so a teacher needs the support of the organization's management and the workplace. The management of the institution is the key to change the learning culture, in this context a facilitator of digitalization.

1. BACKGROUND

One of the top priority projects of the Finnish Government is to make Finland the most competitive nation in the world by 2020. The development of information society in training and education in Finland, as assessed in international evaluations, belongs to the top-notch. Instead, as regards information and communication technology in educational use, the situation is still challenging. New educational opportunities supported by technology could be used in more versatile ways. The educational institutions of learning culture change slowly to meet the needs of the learner and the learning method. (Ministry of Education and Culture 2010, 8 - 14; cf. Kullaslahti, 2011, 9.)

Changes are the challenge, but also an opportunity to develop innovative and effective solutions. In our country this is currently feasible in a large national health and social welfare reform that aims at better customer access and equal services. Change is an important tool for digitalization, so for the production of ICT and

digital services nationwide solutions are being sought. (Ministry of Social Affairs and Health 2016a, 2016b.)

In our country there is a variety of projects running to maximize the benefits of digitalization. Among other things, spearhead projects in the Government Programme "Self-care and the value of digital services" (ODA). The above mentioned project will build national self-support and self-care e-service packages. ODA services through the health and social services arise from the digital time. The objective of ODA is that the customer will receive social and health services quickly and has unimpeded access around the clock. Instead, the Työelämä 2020 Project challenges the different working environments of the operations and behavior of social and health service personnel. The aim is that the operation is transparent, interactive, controlled and proactive, and also that new technologies are used efficiently and the management is competent. In the future, increasing efforts is considered important for the renewal and development of supporting a culture in which products, services and practices are created in co-operation. (Ministry of Social Affairs and Health 2016b; Työelämä 2020 Project 2016.)

The health sector is in constant technological change. Different practices of educational institutions have not yet formed the institutional routines which could be used to decide how to act in each situation and with new equipment, applications and teaching methods (Lonka 2015, 79). The learning culture of health organizations plays an important role. Learning culture describes the way in which the organization's activities are aimed to develop. On this basis, we can talk about two different types of organizational learning culture; adapting to change, creating something new - and a conservative one, adaptable learning culture (Senge 1998, 5).

The conservative culture of learning characteristics is routine management, task-oriented activities towards objectives and responding to problem orientation, so that superficial changes and the current situation are the core of survival. In operation, a variety of recurring short-term periods are fixed, lessons learned at events and from the experience will disappear in the

hierarchy, because sharing collective knowledge is problematic. In contrast, the new creative learning culture is characterized by a creative spirit of innovation, with an emphasis on reflective and idea-centered solutions. The targets are determined in the dialogue together, and the personnel is committed to them. Changes will develop in in-depth looks and views of the future, with active search for predictions. (Senge 1998, 18 - 135; cf. Kronqvist & Soini 1997; Hyyppä, Ahlavuo & Hyyppä 2014, 238 - 258.)

Learning and participation take place in the future more and more by means of data networks or technology. Along with addressing the different challenges, they are encountered in a variety of projects, networks, new kinds of virtual teaching, learning, applications and diversification of learning environments. Learning is deformation, where the learner has to be a critical, innovatively grown and creative personality. The importance of media education is also emphasized especially for young generations to provide their contributions. Natural approaches are needed for young people to learn about visual modes, multimedia solutions, cooperation and sharing of culture. (Ministry of Education and Culture 2014, 10 - 18; Lonka 2015, 71 - 106.)

Rajalahti (2014) brings up in her doctoral dissertation recommendations for teachers and health information management. Teachers should be taken into consideration, and the use of basic skills in information management, the basics of information and communication technology, teaching information literacy and information management in their own work. Data management provides the same kind of opportunity to introduce a collaborative and inclusive learning culture in teaching and learning. Rajalahti (2014) notes that the current media culture requires schools and educational institutions to increase flexibility, capacity to renew themselves and the courage to make their activities visible to others. (Rajalahti 2014, 105 - 108.)

Health sector e-services are present, and a rapidly developing area. E-health (eHealth), in terms of health care equipment and services, and explicitly as an attempt to take advantage of

information and communication technology to improve the quality of nursing care and ensure that the patient has received treatment safety, has an increasingly important role in teaching (Jauhiainen & Sihvo 2014, 10). The introduction of e-services to professionals requires new skills, motivation and commitment. The professional will have to be interested in the client as a whole, engage in team work and have cooperation skills, strong ethical commitment to work and professional orientation to extensive management. Literacy also focuses on data protection and security expertise, good information gathering skills and ability of critical evaluation of information. Furthermore, the professionals should have the ability to assess customer-oriented customer knowledge as well as motivation and the ability to use those services, and know how to guide customers using communications equipment. In addition, technicians should have a positive attitude towards the development of and cooperation with the various professionals themselves and their work. Network managers' skill requirements comprise, in addition to medical care and information management work experience, also personality, skills development, teamwork skills, independence, commitment to work, a network of literacy and customer service skills. (Jauhiainen, Sihvo & Ikonen 2014, 56 - 57; Cf. The Finnish Nurses Association 2016, 11.)

In the Finnish project called ASSI, carried out in the study described, the development and deployment of nurses and other health care professionals with e-services expertise and competence requirements are related to primary health care. The project studied the introduction of e-services related to seven areas of expertise: information and communication technology skills, interpersonal skills and interactive online communication, expertise, and self-management, positive attitude to the use of electronic services and information technology, a wide-ranging service package thinking, customer-oriented services and multi-professional deployment expertise, agile development and multi-channel health training and control expertise. (Jauhiainen et al. 2014, 56 - 57.)

Data Communication Specialist Tenno (2014) discusses the perception of organizations, as to whether the benefits of online education are understood widely enough and whether it is realized that e-learning is the key to the success of the new organization and saving resources. In Tenno's (2011) study on e-learning, pedagogical infrastructures appeared in the design of teacher−student user interface design and content organization. As a result, the settlement of teacher−student activity orientation provided information about the kinds of issues that construction of e-learning pedagogical infrastructure should pay attention to. Background orientations influenced the teacher−student learning orientation, learning strategies, and personal characteristics. (Tenno 2011, 145 - 180.)

According to Tynjälä (2000, 65), teaching is controlling and enabling learning. Learning, interactivity and sociability are to exploit and develop learning modes that allow sharing, discussions, negotiations and exchange of information for argumentation. Simplistic one-way utilization of the network should not be the only material way for sharing information such as e.g. receipt of final data, which is the traditional teaching model. Studies have found that more versatile utilization of the network is developing with the teacher's increasing experience (Laine 2007, 144).

2. BACKGROUND OF E-LEARNING PROCESS AND RESEARCH METHOD

The third semester nursing students of medical surgical courses started to develop a pilot network in autumn 2014. The development of this course was directed by online university medical studies' pedagogical model (http://www2.amk.fi/digma.fi/www.amk.fi/material/attachment s/vanhaamk/etuotanto/5hNl2HszG/pedamalli-1.pdf). The model allows students to learn to search for information, and to form an overall picture of the virtual learning environment, what they need to know and how to be capable of medical care when

operating as a nurse in primary health care or specialized medical care.

According to the medical pedagogical model in the teacher's supervision, the students will learn about the theory of knowledge of the disease, current treatment recommendations and treatment model descriptions in primary health care or specialized care. After the orientation to theoretical knowledge, the students will deepen their understanding about the patient by means of examples in the medical treatment process, the contents of medical history, status, studies, diagnosis, measures, and patient records. Patient examples are part of Moodle learning environment for learning tasks. According to the model, students are independently able to study the medical treatment of the patient in a network environment.

In the actual implementation of the course objectives were described accurately. The study complex was divided into Moodle learning environment in six blanquettes, which are "the core concepts of surgery, the orthopedic surgery of the patient, the gastroenterological patients, urological patients, cancer patients and vascular surgical patient". For each of the six portions, time was set aside for an average of two weeks. The content of each part of the study consisted of lectures held by expert nurses, the e-learning environment, learning materials, independently executable tasks. Preparation of materials was consulted with medical specialists in particular areas. During the accomplished network tasks, students received feedback from the teacher, and a multiple-choice exam was held as a mid-term task. At the end of the course, the students showed their skills in an online test, which consisted of a wide range of issues.

The course began by learning orientation, where students were informed about the related instructions in the learning process, and was limited to assignments and tasks agreed at the conclusion of the control times. After the above-mentioned orientation, students started independent information retrieval, to which they had received induction in the previous semester. Throughout the course, the students were offered guidance on classroom teaching and on-line guidance in Adobe Connect web

conferencing system. In the control situations, the students had the opportunity to ask via the Connect web conferencing system about matters studied and retrieve reliable information on the various fields of medicine.

In the learning tasks, students reviewed the ICF (Functioning, Disability and Health International Classification; Instructions and classifications, Ministry of Social Affairs and Health 2013) and the effects of the disease on the patient. The students' aim was to get an idea of how the illness and medical treatment of the human body, consisting of functioning, body structures, activities, participation and environmental factors. The patient's life situation information was needed for the care, guidance and/or rehabilitation plan which was drawn up.

The electrical feedback surveys were carried out in December 2014 and May 2015. The implementation of the course included compilation of feedback from a group of eight classes (N = 140 students). For the electronic survey two weeks was given for the return. The survey included questions about the course teaching methods, the students' own learning, materials, guidance and schedules, as well as the equivalence of the student's learning needs. The survey consisted of a total of 14 questions, of which questions 2 to 9 were on a scale 1–4 (very well – very badly). Question 10 related to the students' view of what grade they would give to the course, on a scale of 1–5. Questions 11 to 14 were open questions related to the student's personal learning and development of the course. The deadline for returning the feedback survey was continued. The response rate was 43 %.

In the study, the research method was quantitative. With the quantitative research, our interest is in a variety of cause-and-effect relationships, and how comparison of numerical results would explain the phenomenon. The quantitative method includes a great variety of computational and statistical methods of analysis, but due to the limited data in this study the results are described as percentage shares. The investigation continues in each semester, so later there is a possibility to provide a wider set of results. Open-ended questions were grouped according to

their content in terms of how they were assesses to describe the students' main views. (University of Jyväskylä, 2016)

The aim of the pilot study was to gather information for the self-development of the students and the learning environment of the course. The main objective was to enable student-centered learning where learners take responsibility for their own learning and are capable of constructively applying the critical approach that they have learned in this matter area.

3. RESULTS OF THE STUDY

As one of the results, 60 % of the students considered that the expert lectures for nurses responded very well or quite well to their needs for learning in autumn 2014, and the result was the same with regard to spring 2015. When asked about the special field of targeted expert lectures for nurses, the field was considered to match the needs of learning very well or fairly well 57 % and 80 % (autumn semester 2014), respectively, and it had risen to 68 % and 85 % in spring 2015 (Table 1). Recorded lecture material was received well in open responses concerning support to students' learning, because the students had the opportunity to return to the recorded contents of the lectures.

Table 1: The different specializations of the lectures and the students' learning needs.

Specialization	Very well or fairly well		Fairly badly or very badly	
	Autumn 2014	Spring 2015	Autumn 2014	Spring 2015
Orthopedics	70%	82%	30%	18%
Gastroenterology	80%	77%	20%	23%
Urology	76%	85%	24%	15%
Oncology	57%	68%	43%	32%
Vascular surgery	70%	82%	30%	18%

Similarly, half of the students considered the online tasks corresponded to the learning needs very well or fairly well in autumn 2014 (Table 2). In spring 2015, the online tasks were

developed and this was reflected in the students' responses. 63% of the students thought they were good. In particular, the online materials were considered to have improved. Around 30% thought that the materials responded to their learning needs very well or fairly well (autumn term 2014), and in spring 2015 57 % of the students thought they were good. Answers to open questions in both surveys showed an increase in the proportion of independent learning, and also that information retrieval is a challenging task in learning.

In autumn 2014, about 70 % of the students had the experience that guidance corresponded to their learning needs rather badly or very badly. On the other hand, 80 % of the respondents answered they made use of guidance rather badly or very badly. The situation had changed since spring 2015 when about 60 % of the students saw guidance corresponded well to their needs and that guidance was actively exploited. Guidance was developed in the course of spring 2015, with implementation in such a way that all students had at least two times a control test at the start and in the middle of the course. In addition, the students had the opportunity to participate online in Adobe Connect web conferencing tools of controls. In autumn 2014, the control was carried out in groups. In addition, as the tasks were individual, they were carried out in pairs, and in spring 2015 the guidance was changed into pair or group control.

Table 2: The teaching method, materials, guidance and scheduling and the students' learning needs.

Implementation of the course	Very well or fairly well		Fairly badly or very badly	
	Autumn 2014	Spring 2015	Autumn 2014	Spring 2015
Lectures	60%	59%	40%	41%
Online materials	27%	50%	73%	50%
Online tasks	50%	59%	50%	41%
Guidance	27%	53%	73%	47%
The schedule	33%	59%	66%	41%

Guidance of students' learning needs was further developed. In particular, it must be made clear to students that guidance is

their privilege and supports their independent studies. Most of the students in the study did not understand it during the course despite information and counseling provided in autumn 2014. The students had to receive more guidance of the course of their own learning rhythm and restore the binding nature of the timetable of tasks. The challenge for the completion of the course was the clinical practice concurrency.

Expert lectures for nurses were seen mainly as meaningful and well-understood in both survey rounds. Traditional doctors lecturing proved to be a successful solution. The overall view of work done by the nurses in specialized areas was clearly conveyed through lectures and facilitated the learning tasks. The recording material was enabled the students to take advantage of, for example, support in learning in the context of clinical practice.

There were many online tasks, which were reduced and developed in terms of learning via online inquiry learning of the exam topics, but with support regarding the issues studied. Some of the students worked too much in relation to the tasks. The task was to work on the online functions of the matrix format and focus on the treatment of the patient's surgical care. Task assignments require students to engage in self-acquisition and application of knowledge.

In autumn 2014, 77 % of respondents had not done the tasks of learning according to the schedule, so the course scheduling was seen by 60 % as somewhat or very poor. In spring 2015, 59 % of the students felt very responsible for scheduling their own learning needs, and all students (100%) made the tasks during the schedule.

Learning tasks were seen in the student's learning very or fairly sensible by about 50% of the students in autumn 2014, and in spring 2015 meaningfulness was elevated (Table 3). The greatest benefit was seen to have come from the interim task which was a multiple selection task in both survey rounds. Other useful tasks were the key concepts and a variety of specialized learning tasks, gastroenterology and urology in autumn 2014 and all the specialties in spring 2015.

**Table 3**: *Students' experiences in carrying out the tasks of learning in order to improve results.*

Implementation of the course	Very well or fairly well		Fairly badly or very badly	
	Autumn 2014	Spring 2015	Autumn 2014	Spring 2015
Key concepts	53%	65%	47%	35%
Multiple choice exam	67%	70%	33%	30%
Orthopedics	44%	68%	56%	32%
Gastroenterology	50%	62%	50%	38%
Urology	50%	65%	50%	35%
Oncology	47%	59%	53%	41%
Vascular surgery	47%	62%	53%	38%

The online exam conducted at the end of the course was considered as serving very well the learning of 17 % of the students and serving 63 % quite well. In open comments, the exam was commented as follows: "The online exam was a positive surprise, diverse and varied. Viewing your own results was, indeed, quite a learning situation, and certainly, at least for myself stuck to mind thoroughly." In the spring 2015 survey, 68 % of the respondents considered that the exam had served their learning very well or fairly well. The online exam at the end of the course was considered as a very successful way of learning.

The students' experience of studying in an online learning environment was divided (Figure 1). About a third of the students considered it was good, while 70 % of the respondents gave a rating of 1 to 2 on a scale of 1 to 5, or felt that studying in the virtual learning environment was poor in autumn 2014. In addition, the students were asked about their self-direction on a scale of 1 to 5. For this issue, 3 % of the students considered their

self-direction very poor, 20 % estimated their self-direction as grade 2, 40 % as grade 3, 23 % as grade 4 and 13 % as grade 5. The results were better in spring 2015 than in autumn 2014.

Figure 1: Students' experience of the virtual learning environment of studying, expressed as a percentage on the evaluation scale of 1-5, where 1 is the worst and 5 is the best.
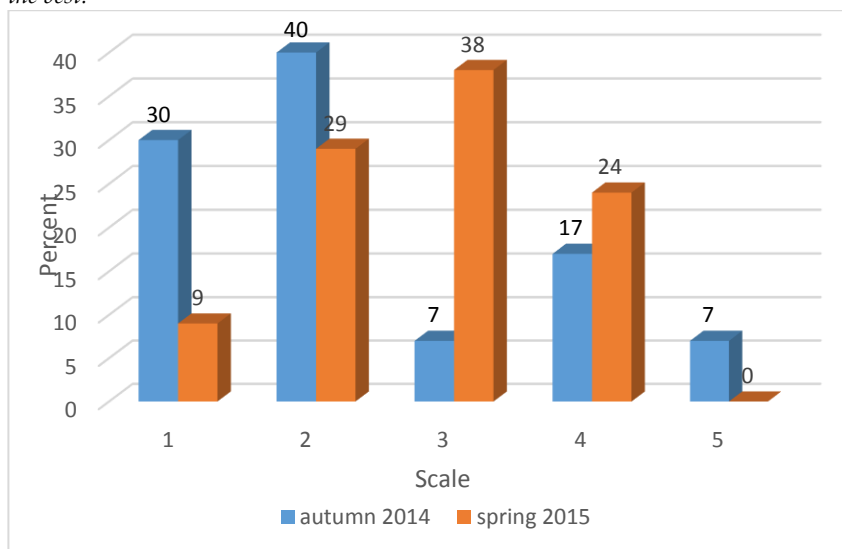
The students' experience of studying in an online learning environment was mostly negative (70 %), which was an amazing result in autumn 2014. On the other hand, in the survey it became clear that self-direction (Figure 2) and the low level of utilization of guidance described the above-mentioned results. The learning culture is that people are not used, as students, to take advantage of an e-learning environment but instead teacher's lectures and tasks closely supervised, i.e. the implementation of a student-oriented rather than self-directed knowledge acquisition and application. In spring 2015, the results were clearly better.

Figure 2: Students' view of their estimated self-direction, as a percentage on a scale of 1-5, where 1 is the worst and 5 is the best
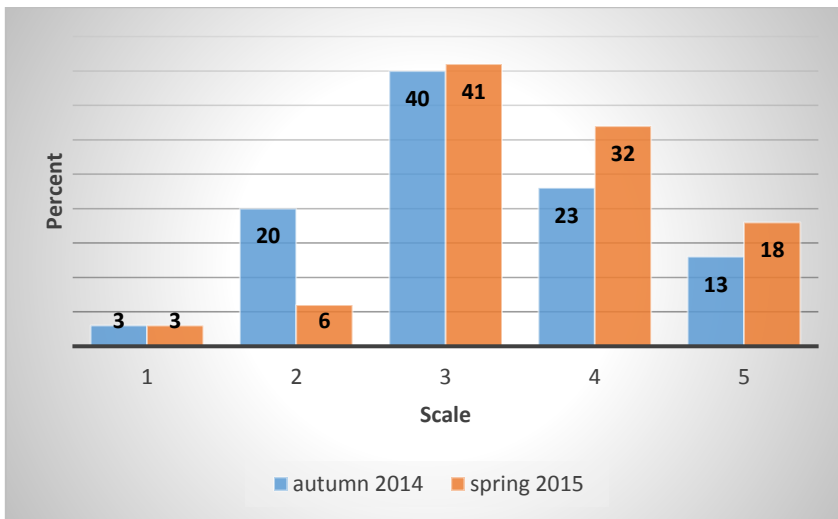
4. CONCLUSIONS

A digi-economic growth study, implemented in spring 2016, shows that digitalization is becoming ever more crucial to success in the service factor (Palta 2016). The requirements of working life digitalization progress, and, inter alia, mobile technology competence requirements add to the challenges of teaching. E-learning and remote online learning have come to our world to stay. Demanding intellectual performance, and extensive educational materials will require students' constantly evolving self-regulation skills. They have to have the capacity to control and direct their own learning and to develop interaction with other people (Lonka 2015, 78 - 79). In this study it was clearly shown that the above-mentioned self-regulation skills are developing and will continue to require the learning of cultural changes for the new innovative learning culture. Information and communication technologies applied in teaching and learning require the introduction of new pedagogical methods. Student-

oriented learning methods combined with the changing role of the teacher lay the foundation for new ways to learn.

The teacher's task is to guide the students in their future activities for supporting the direction of learning. In the change the teacher needs the support of the organization, management and workplace. The management of the institution is in a key role as a facilitator of change in the learning culture. The data and large-scale introduction of ICT in educational institutions will require investment, in addition to change in the practice. Also, methodological development of teachers' continuous education is necessary. Modern development of teachers' own knowledge and skills require education, professional networking, as well as areal development of digitalization to achieve the operational models.

Development of distance online learning is a focal method for improving the accessibility and supply of various parts of the province's education. According to Tenno's (2011) study, e-learning structure should correspond to the structure of the course. It is very essential to understand that the online mode is a key distribution channel for information, students' learning and the work environment, so that students' own activity is a substantially greater part of the learning process. In most recent studies, online mode constitutes the new learning spaces. (Cf. Heiskanen 2007, 238 - 257; Ihanainen & Leppisaari 2009, 12 - 23.)

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22. *The impact of dementia on caregivers' long-term quality of life and stress*

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1.4 CURRENT KNOWLEDGE OF FAMILY CAREGIVERS OF PERSONS WITH ALZHEIMER'S DISEASE

1.4.1 Family caregiving as part of the health care structure

The Finnish population is rapidly growing old. The majority of people with memory disorders live in a community. Alzheimer's disease (AD) is the most common neurodegenerative disease, accounting for approximately 70% of all memory disorders. (Alzheimer's Association 2013). AD is characterized by a decline in memory, language, problem solving and other cognitive skills. These all affect a person's ability to perform everyday activities and live independently. (Cummings 2007.)

The frequency of AD increases with age and current estimates indicate that approximately 35 million people worldwide are suffering from AD (Alzheimer's Association 2013). The present number of persons with dementia in Finland has been estimated to be 120,000 (Memory disorders: Current Care guidelines, 2012), and the number is believed to double by 2050 (Alzheimer's association, 2014).

ng and care, including home care (Tarricone & Tsouros, 2008). Family caregivers usually manage the main responsibilities of the home care of persons with Alzheimer's disease in Finland. The total calculated value of informal care is 1.7 billion (Ministry of Social Affairs and Health 2014).

1.4.2 Effects of long-term care on family caregivers' stress and quality of life

Family caregivers' mental health includes diverse and complex combinations of psychosocial, physiological, health behavior and general health outcomes (Brodaty & Donkin, 2009). Caregivers' psychological morbidity is one of the main consequences of prolonged caregiving, and the related incessant strain can manifest as depression and anxiety (Pinquart & Sörensen, 2003). In addition, health-related quality of life (HRQoL) and well-being have been recognized as major elements in successful home care. (Välimäki et al. 2016.) Caregiver depression and anxiety have been associated with caregiver distress (Sörensen & Conwell, 2011). It is also known that sense of coherence (SOC) as a capability to comprehend a caring situation and the capacity to use available resources diminish during prolonged caregiving (Välimäki et al. 2014). In addition, based on family caregivers' diaries, they seem to transition into the caregiver role already before the eventual AD diagnosis of their loved one. The gradual change into a caregiver included multiple challenges for the caregiver at the personal level, in family relationships as well as in creating a new outlook to the family's future. (Välimäki et al. 2012.)

1.2   KUOPIO ALSOVA STUDY

1.2.1   Materials and methods

Kuopio ALSOVA study is a prospective, randomized intervention study with a five-year follow-up. The primary aim is to evaluate the effect of psychosocial intervention on the time of institutionalization for persons with AD. The study is conducted

by the University of Eastern Finland in co-operation with the Departments of Neurology, Nursing Science, Health Economics and Pharmacy. A total of 241 patient and caregiver dyads were recruited from three outpatient clinics on average 5 months after the AD diagnosis between the years 2002 and 2006. All the patients had very mild (CDR 0.5) or mild (CDR 1) AD with daily contact with their family member. (Koivisto et al. 2016.)

The aims of the caregiver study (n=236) were to characterize psychological distress during the first 3-year follow-up period and compare possible differences between spousal and non-spousal caregivers. The family caregivers' health related quality of life (HRQoL) was characterized and compared with age- and gender-standardized sample of the general population (Välimäki et al. 2015, Välimäki et al. 2016) during the three-year follow-up period.

Family caregivers' psychological distress (General Health Questionnaire, GHQ), depressive symptoms (Beck Depression Inventory, BDI), health related quality of life (15D instrument) and Sense of Coherence (SOC-29 scale) were measured during annual visits. The severity of AD was evaluated with CDR-SOB, cognitive impairment with MMSE, functional capacity in activities of daily living with ADCS-ADL and neuropsychiatric symptoms with the NPI inventory. Generalized estimating equation (GEE) models with all available data from the 236 dyads were applied. FCs' HRQoL was compared to a representative sample of the Finnish general population's corresponding 15D measurement obtained from the National Health 2011 Examination Survey. The population sample was weighted to reflect the age and gender distribution of caregivers.

1.2.2 Results

At baseline, 67% of caregivers were female. Spousal caregivers reported more depressive symptoms (10.4 vs 8.9, p= <.001) and higher psychological distress (GHQ 12.9 vs 11.1, p= <.012) compared to non-spousal caregivers. Caregiver baseline

SOC, BDI and patient NPI significantly affected caregivers' psychological distress over time. Depressive symptoms at baseline mostly explain this change. (Välimäki et al. 2015.) The mean 15D index score was already significantly poorer at baseline than the corresponding 15D index score of the age- and gender-standardized population, but also stayed stable over time. This difference remained unchanged throughout the follow-up period. (Välimäki et al. 2016.)

Caregiver stress was predicted by the spousal relationship, caregivers' depressive symptoms, and the severity of NPIs at the time of diagnosis. However, HRQoL deteriorated earlier than previously noted. Interestingly, the impact of the severity of AD on caregivers' HRQoL was not as great as what could have been assumed. (Välimäki et al. 2015.).

1.3 CONCLUSIONS

Family caregiving poses a health risk for some caregivers. Health care providers should recognize these caregivers at the early stage of caregiving and facilitate proactive, tailored support to promote the well-being of both caregivers and the patient.

There is a need for accumulated knowledge about the management of AD-related behavioral symptoms starting from the early phases of caregiving. However, currently, symptom management is started at the moderate phase of AD even though the symptoms already cause distress at the beginning of caregiving. The caregiver–patient relationship, depressive symptoms of the caregiver, and the severity of the patient's behavioral symptoms predict the trajectory of psychological stress experienced by the caregiver during prolonged caregiving. In conclusion, the ALSOVA study suggests that spousal and depressed caregivers experience more psychological stress than their non-spousal or non-depressed counterparts. Lastly, it would be crucial to evaluate caregiver depression in clinical settings.

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23. Utilization of private purchasing best practices in procurement of services in Finnish municipalities. The case of housing services for the elderly

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Abstract

The importance of purchasing in the private sector has been acknowledged, at least in successful organizations. Purchasing has transformed from being a clerical function to a strategic function. Public procurement is claimed to be simply a legal-based function. The objective of this research is twofold. First, private purchasing best practices were identified; this was conducted by literature research. Second, a multiple case study covering municipalities in the metropolitan area was conducted

with the aim to examine whether the identified private purchasing best practices were used in procurement of services. This study covers tendering for housing services for the elderly during 2007-2012. The study is a multiple case study covering Helsinki, Espoo, Vantaa, Lohja, and the Karviainen federation of municipalities. The study was conducted by interviewing persons involved in the tendering of housing services for the elderly. The best practices in private purchasing that were identified are market knowledge, purchasing strategy, total cost of ownership, cross-functional teams, co-operation, and sustainability. The results indicate that these best practices are indeed partly utilized in procurement of services in the cases studied. The identified best practices in private purchasing can also be criticized as the number of studied tendering cases is limited. This research is the only research that studies the utilization of private purchasing's best practices in public procurement of services. Its value is that it sheds light on the resources within public procurement organizations, showing the shortage in purchasing skills, purchasing strategy, and time.

1. INTRODUCTION

Today's successful organizations have acknowledged the importance of purchasing as a strategic function of the organization. The more organizations have focused on their core businesses, the higher the share of purchasing costs of the organizations' sales income has become. In many organizations this share can be as high as 60-80 per cent (Baily et al. 2008).

Purchasing is according to van Weele (2014, p. 3) "The management of the company's external resources in such a way that the supply of all goods, service, capabilities and knowledge which are necessary for running, maintaining and managing the company's primary and support activities is secured under the

most favorable conditions." According to Murray (2001) private sector purchasing has following goals: cost reduction, quality improvement, innovation transfer and security of supply. Paulraj et al. (2006) have described the purchasing evolution having following phases: materials management, buying, purchasing, procurement and supply management, supply chain management. Moreover, the purchasing evolution can be described in form of maturity models.

The share of services purchased by an organization has been rising over the years. Services are increasingly purchased from organizations specialized in providing those services (van Weele, 2014). The importance of purchasing services is increasing for reasons such as growing services industry, the deregulation of public services sector and increasing outsourcing in both the private and public sector (Bryntse, 1996).

Public procurement has according to Murray (2011) following goals: local sourcing/preference, internal advice, create awareness of purchasing opportunities and green purchasing. The main difference between public procurement and private purchasing is that public procurement is more regulated. All members of the EU are forced to implement the EC procurement directives. The legal basis for the EC procurement directives is included in the Treaty of Rome from 1957. The key principles of this treaty are (Lindskog et al., 2010): To increase transparency of procurement procedures and practices throughout the community, to allow the free movement of goods, services, capital and people between member states, to develop effective competition for public contracts, to standardize specifications and to provide advance information of procurement needs to the marketplace.

2. MOTIVATION OF THE STUDY

The Social and health services reform which is under consideration in Finland is raising discussion concerning the role of privative service providers in this reform. Municipalities have

traditionally organized their services to their residents by producing these services themselves.

This reform can be seen as a reflection of the New Public Management paradigm (Moore et al. 1994) which is favoring a higher rate of outsourcing and competitive tendering for public sector services. In most cases up to the year 2000 municipalities in Finland acquired services directly through negotiations. The European Union's procurement directives and national procurement legislation started to influence this process only in 2004 (Sinervo and Taimio, 2011).

The value of public procurement in Finland in the year 2012 was approximately 23 bn€ (Hilma 6.2.2013). The procurement of local authorities formed nearly half of this value.

Procurement of services from private suppliers has in municipalities created discussion and dispute and tendering have often ended into the Market Court. Market Court is a special court hearing market law, competition law, public procurement and civil IPR cases in Finland (www.markkinaoikeus.en). These problems in tendering have been seen caused by shortage of procurement skills in municipal organizations (f.eg. Sinervo and Taimio, 2011; Syrjä, 2010).

Finnish population is aging fast (Sinervo and Taimio, 2011). This is causing higher costs to local authorities and as a consequence higher taxes to taxpayers. Therefore, it is vital to reduce the forthcoming costs of the health and care of the elderly. Outsourcing of the housing services for the elderly has been seen as one solution for this.

The Organization for Economic Co-operation and Development noticed in a survey that many countries have used new management practices involving the private for-profit sector to bring changes in their way to manage public services (OECD, 1993a). These practices have been mentioned as part of the new public management (NPM) (Hood, 1991). However according to Moore et al. (1994, p.13), "The central feature of NPM is the attempt to introduce or simulate, within those sections of the public service that are not privatized, the performance incentives and the disciplines that exist in a market environment."

International research of public procurement has mainly focused on juridical issues in tendering procedures, public-private partnerships and collaboration in procurement. In Finland several research have been conducted of procurement in different sectors including services for the elderly (f.eg. Haho et al., 2007; Kähkönen and Volk 2008), housing service for the elderly (f.eg. Sinervo and Taimio 2011; Syrjä 2010; Lundström 2011). Moreover, new areas of public procurements have been studied, f.eg. innovation in public procurement (f.eg. Yliherva 2006; Halme and Kotilainen 2008) and sustainability in public procurement (f.eg. Carter and Jennings 2004; Amann et al., 2014).

The difference between private purchasing and public procurement have been studied by (f.eg. Murray 2001; Heinritz et al., 1991; Lian and Laing 2004; McCue and Pitzer 2005; Arlbjorn and Freytag 2012). In the research of Arlbjorn and Freytag (2012) the private sector purchasing and public procurement was compared and it was studied whether these organizations could learn from each other.

3. OBJECTIVES OF THIS STUDY

This research studies similarities and differences between public procurement and private purchasing in Finland. The main interest is to study how much best practices of private sector are utilized in procurement of Finnish municipalities. The study starts by specifying best practices in private purchasing. This was done through literature review. The articles were found by using databases Business Source Elite (Ebsco), Emerald, ProQuest, ScienceDirect and EBrady. The search term was ("purchasing or procurement") and "best practice". The empirical data of tendering in the case municipalities was collected by interviewing relevant personnel in respective municipalities and by studying the documentation of the tendering. Personnel which had taken part into tendering of housing services for the elderly in Helsinki, Espoo, Vantaa, Lohja and Karviainen (federation of municipalities) was interviewed. The interviews were based on a semi-structured form.

This study is also longitudinal in that respect that in some cases two tendering were organized during the studied time period. The study covers tendering during 2007-2012.

A case study can be either descriptive, explanatory or exploratory (Yin, 2003). Case studies are utilizing a combination of data collection methods such as archives, interviews, questionnaires, and observations. The evidence is presented as e.g. words, or e.g. numbers, or both (Eisenhardt, 1989). According to Voss (2009, p. 164) "case studies can be used for different types of research purposes such as exploration, theory building, theory testing and theory extension/refinement". On the other hand, longitudinal case studies give greater opportunity to observe the sequential relationships of events (Voss, 2009). This study is explanatory and it is partly creating new theory.

4. LITERATURE REVIEW

Henderson (1975) studied the status of purchasing in the 1960s. He discovered that purchasing executives in most organizations did not regard purchasing as an important function. However, purchasing function has changed greatly from those days. An important step in the evolution of purchasing was Peter Krajlic's article "Purchasing must become Supply Management" (1983). Since then supply management has taken more like strategic role in particular in manufacturing companies. (Ellram and Tate, 2015). In literature the term "maturity" is either seen as process maturity describing the way a particular business process is defined, managed, measured, controlled, and effective (Fraser and Vaishnavi, 1997; Paulk et al., 1993) or as object maturity, describing how f.eg. software product or a company report fulfills its purpose (Gericke et al., 2006) or as people capability, describing how well the workforce can create knowledge and skills (Nonaka, 1994). Rozemeijer et al. (2003, p.7) defines purchasing development and maturity as "the level of professionalism in the purchasing function". Different purchasing maturity models have been researched by f.eg.

Schiele (2007) and Van Weele (2010). In particular Paik (2011), Cousins et al. (2006), Foerstl et al. (2013), Hartmann et al. (2012), Paulraj et al. (2006) and Schiele (2007) discovered that purchasing maturity is increasing firm's success.

In figure 1 the purchasing development model of van Weele (2014) is presented. This model has placed public procurement in the lowest level of development.

Figure 1: Purchasing development model (van Weele, 2014, p. 68)
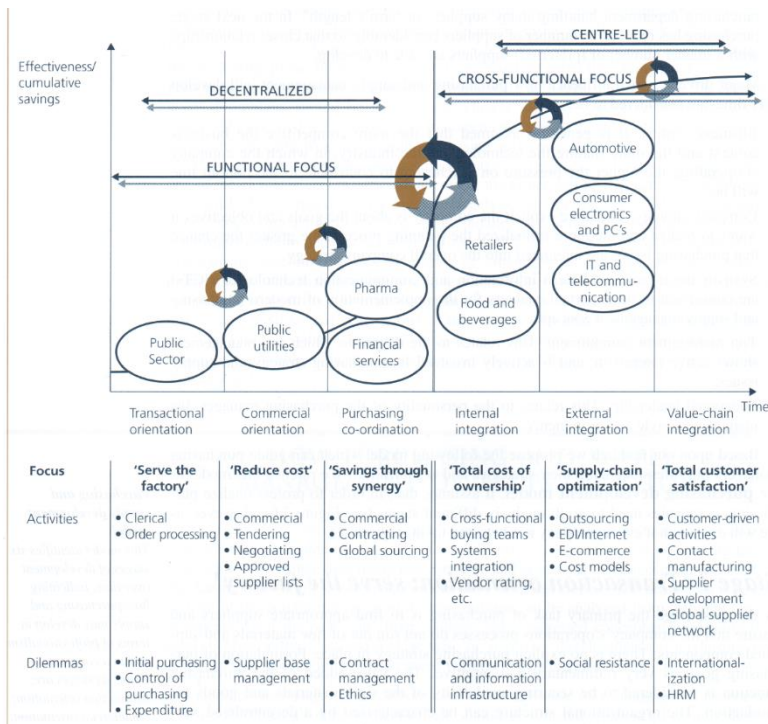
American Productivity and Quality Center (APQC) defines best practices as "activities or systems that have been shown to produce superior results. Best practices are selected by a systematic process, and judged as exemplary, good or successfully demonstrated. They can be adapted and to fit an organization's specific needs" (APQC, cited in Jarrar and Zairi, 2000).

Based on literature review i.e. articles from the mentioned databases and books by Baily et al., (2008), Lysons and Farrington (2006), Monczka et al., (2011), van Weele (2014) and Iloranta and Pajunen-Muhonen (2012) following best practices in private purchasing have been identified: purchasing strategy, total cost of ownership, cross-functional teams, co-operation and sustainability. Additionally, market knowledge has been added into the list of best practices in purchasing. Without knowing the supply market, it is impossible to procure successfully.

Purchasing strategy thinking follows a four-stage approach according to Kraljic (1983): an organization has to first classify all its purchasing spend in terms of profit impact and supply risk. In addition, the organization analyzes the supply market of this spend following the strategic supply position and plans action accordingly.

Total cost of ownership concept is trying to look at the supplier cost in a wider perspective including life cycle costs, i.e. the entire costs of the item. "Total cost of ownership is defined as the present value of all costs associated with a product, service, or capital equipment that are incurred over its expected life." (Monczka et al., 2011).

According to Trent (1996) "cross-functional sourcing teams consist of personnel from at least three functional areas brought together to accomplish a purchasing- or materials-related assignment. This includes assignments in which the team must consider purchasing goals or decisions involving supply base management."

According to Ellram and Edis (1996) a co-operation can be achieved if a purchasing organization is working in a close relationship with few key suppliers seeking mutual benefits in a win-win type of set up. This set up requires trust, communication, mutual benefit, long-term perspective and top management commitment at both companies (Ellram and Edis, 1996).

Sustainability has been defined "as meeting the needs of the present without compromising the ability of the future generations to meet their own needs" (UN Documents, 1987).

In the public procurement a tendering process is starting with a call for tender by the purchasing organization. This call includes specifications of the product or service in question. The criteria for the selection and award of the contract has to be included in the call for tender. The selection criteria can be either the lowest price or the most "economically advantageous" tender (Roodhooft and Abbeele, 2006). Tenders are typically based on arm's length relationships between a supplier and a purchasing organization. On the other hand, EU and f.eg. UK governments are persuading suppliers and purchasing organizations to combine competition and co-operation (Treasury, 1998). However, the EU procurement rules proves to rule out for public organizations the use of collaborative procurement (Roodhooft and Abbeele, 2006).

Buying firms can improve suppliers' performance and capabilities by increasing supplier performance goals (Monzcka et al., 1993); by providing the supplier with training (Galt and Dale, 1991); by providing the supplier with equipment, technological support and even investments (Galt and Dale, 1991; Monzcka et al., 1993); by formally evaluating supplier performance (Watts & Hahn 1993); and by recognizing supplier progress in the form of awards (Galt and Dale, 1991).

The share of private service providers in housing service for the elderly started in Finland to increase somewhat based on the decision to dismantle the system where the state subsidies for social welfare were earmarked (Anttonen and Haikio, 2011, p. 75). This decision "strengthened the idea that municipalities are in charge of arranging services, but they have the freedom to decide how these services are arranged and produced".

Table 2: Service structure in 2000-2010 and national targets for 2012, % of over 75 years' old persons (www.sotkanet.fi)

	2000	2007	2010	2012
Lives at home/ supported by service	89.8	89.3	89.5	91-92
Is getting regular home care	..	11.3	11.9	13-14
Is receiving financial support for caring for close relatives	3.0	3.9	4.2	5-6
Is in enhanced sheltered service	1.7	4.2	5.6	5-6
Is in long-term institutional care	8.4	6.3	4.7	3

While local authorities guided customers weak in health into housing service the 24-hour service was needed. This form of service is called enhanced sheltered service (Syrjä, 2010). The share of this service has increased due to local authorities being able to transfer customers from long-term institutional care to enhanced sheltered service and due to increase in purchased services from private service providers.

The introduction of the voucher system is one way to give freedom to a customer in a municipality to select the service provider.

5. INTRODUCTION OF THE CASES

Helsinki, Espoo and Vantaa were chosen because they are part of the metropolitan area, they are all fast growing municipalities and they have according to Syrjä (2010) different age distribution in their population (see table 2).

Table 3: *Population by age group in Helsinki, Espoo and Vantaa by 31st Dec 2010 / per cent (www.sotkanet.fi)*

Age group / years	Helsinki	Espoo	Vantaa
0-64	85	89	88
65-74	8	7	7
75-84	5	3	4
85-	2	1	1

Table 2 indicates that the population in Helsinki is older than the population in Espoo or Vantaa.

Table 4: *The share of 75-year-old persons of Helsinki, Espoo and Vantaa in full time care of the whole population / per cent in 2010 (www.sotkanet.fi)*

Type of care	Helsinki	Espoo	Vantaa
Intensified care	5.5	6.2	7.0
Retirement home	5.2	2.3	3.4
Health center long term	0.5	0.8	0.2

Based on the quality guidelines of services for the elderly the intensified care should cover six per cent of the population of over 75 years old. Helsinki has been below these guidelines. Based on these guidelines only three per cent of the over 75 years old persons should be located in the long term institution. Helsinki exceeds this limit substantially.

Table 5: *The share of purchased production and own production of the housing service for the elderly in Helsinki, Espoo and Vantaa in 2010 / per cent (www.sotkanet.fi) m ipsum*

Service provider	Helsinki	Espoo	Vantaa
Own production	57	0	16
Purchased production	43	100	84

Lohja and the federation of municipalities Karviainen were chosen to get a different view from the larger municipalities. Lohja is a smaller town in the growing area on the edge of the metropolitan area.

Karviainen is the only federation of municipalities in the study. Karviainen is a federation of Karkkila, Nummi-Pusula and Vihti. It is chosen to give an example of a federation of municipalities. Nummi-Pusula is part of Lohja since 1st Jan 2013.

Table 6: *Population by age group in Lohja and Karviainen by 31st Dec 2010 / per cent (www.sotkanet.fi)*

Age group / years	Lohja	Karviainen
0-64	83	86
65-74	10	8
75-84	5	4
85-	2	2

Table 7: *The share of 75-year-old persons of Lohja and Karviainen in full time care of the whole population / per cent in 2010 (www.sotkanet.fi)*

Type of care	Lohja	Karviainen
Intensified care	3.4	0.3
Retirement home	3.7	0.0
Health center long term	1.5	2.1

Table 8: *The share of purchased production and own production of the housing service for the elderly in Lohja and Karviainen in 2010 / per cent (www.sotkanet.fi)*

Service provider	Lohja	Karviainen
Own production	64	13
Purchased production	36	87

The empirical data was collected by interviewing personnel responsible for housing services for the elderly. Additional data are the tender documents during 2007-2012.

Table 9: Tendering in studied municipalities (Source: documentation from tendering)

Tendering 1	Helsinki	Espoo	Vantaa	Lohja	Karviainen
Contract period	2009-2012	2008-2014	2013-2015	2011-2015	2012-2014
Number of beds	1000	630	635	65	Various
Procedure	Open prosedure	Open prosedure	Open prosedure	Open prosedure	Open prosedure
Selection criteria	Most economically advantageous	Most economically advantageous	Lowest price	Lowest price	Most economically advantageous
General agreement	Yes	Yes	Yes	Yes	Yes

Tendering 2	Helsinki	Espoo	Vantaa	Lohja n/a	Karviainen n/a
Contract period	2013-2016	2010-2012	1.9.2011-2012		
Number of beds	769	66	24		
Procedure	Open prosedure	Open prosedure	Open prosedure		
Selection criteria	Most economically advantageous	Most economically advantageous	Lowest price		
General agreement	Yes	No	No		

Interviewing personnel in municipalities requires a research permission. Interviewing was organized by first asking research permission from local authorities of Helsinki, Espoo, Vantaa and Lohja. Additionally, the federation of Karviainen was interviewed. After having the research permission, the researcher contacted social service personnel in relevant organizations.

For the interview a semi-structured questionnaire was formulated to reflect the studied issues, i.e. how are the best

practices of private purchasing utilized in the procurement of housing services for the elderly in the chosen municipalities (see appendices).

Table 9 shows the questions reflecting the utilization of private purchasing's best practices in the interviewed municipalities.

Table 9: How does the Questionnaire reflect best practices?

Best practice	Question in the Questionnaire
Market knowledge	Did you organize meetings with the potential service providers? How did you examine the supplier market? Which information of the suppliers was collected?
Purchasing strategy	Does the municipality/federation of municipalities have a procurement strategy or procurement policy?
TCO	Procurement documentation
Cross-functional teams	Did you have in the procurement unit cross-functional meetings prior publishing the request for quotation?
Co-operation	Which collaboration and monitoring operations models were established? Have you had joint development projects with the service provider?
Sustainability	Procurement documentation

Regarding Market knowledge Helsinki was the only local authority which organized a research of the supply market. In 2008 the survey was conducted by Helsinki School of Economics, Continuing Education Centre. In 2012 the survey was conducted by the consulting company BearingPoint. In general, the local authorities trusted on their experience to know all the relevant service providers and therefore were not surveying the market. None of the studied municipalities had conducted private discussions with the potential service providers. Regarding Procurement strategy Helsinki and Espoo had a procurement strategy in place during the latter part of the studied period of 2007-2012. Vantaa had certain guidelines. Regarding Total cost of ownership none of the studied municipalities could argue that they had utilized total cost of ownership thinking in their procurement. Regarding Cross-functional teams all the studied municipalities could argue that they had utilized cross-functional

teams in their procurement. Regarding Co-operation only Espoo had ongoing development programs with the suppliers during the contract period (2012). Regarding Sustainability Helsinki is emphasizing sustainability (environmental issues and black market).

6. CONCLUSION

The literature review was conducted in two phases. First the best practices in private purchasing were identified. The study was conducted by using databases such as Business Source Elite (Ebsco), Emerald, Proquest, Sciencedirect and Ebrady. The search term used was (purchasing or procurement) and "best practice". Even though it is not unambiguous to select these best practices, six procedures were found to have these characteristics: market knowledge, procurement strategy, total cost of ownership, cross-functional teams, co-operation and sustainability. Secondly the utilization of these best practice procedures was studied in the literature of public procurement.

The research problem was whether these private purchasing's best practices are utilized in procurement of local authorities in Finland. To find empirical data it was chosen to study the procurement of housing service for the elderly in the metropolitan area (Helsinki, Espoo and Vantaa) and in Lohja town and in a federation of municipalities Karviainen. The time frame for this empirical data was tendering during 2007-2012.

Based on interviewing the relevant persons involved in the tendering of the studied municipalities following conclusions can be drawn:

• In general local authorities have limited capabilities in following the best practices from the private purchasing.

• Market knowledge is not up-to-date; the procurement units are not discussing with the potential service providers in private.

• Procurement strategies are not giving directions to the procurement units.

- Total cost of ownership is not a practice utilized in the tendering.
- Cross-functional teams are well utilized, but even there the local authorities have room to improve.
- Co-operation is not a widely used practice.
- Sustainability is a practice which is getting additional attention both in private purchasing (apparel industry) and in public procurement (tax havens).

Based on researcher's own experience from supervising a number of master thesis in public procurement we can diagnose that procurement organizations are not planning their annual tasks properly. They are not allocating adequate time for preparation phase of a tendering. The procurement organizations seem to be too rushed for proper preparation. In municipalities and in public procurement in general politics is playing a vital role. When adding to this the public administration we can possibly understand the problems we may face in public procurement.

The Social and health services reform will eventually change the responsibilities to organize services for the elderly. This does not mean that the competence requirements for the purchasing organizations would be any lower. The purchasing function both in private and public sector should remember that the best results are achieved by utilizing purchasing knowledge rather than legislation knowledge. Obviously the assistance of the legal advisors is also required. Further research is required to study the procurement of services in the new reformed architecture.

Could we learn from experiences in countries outside the European Union? How public procurement is organized f.eg. in Korea?

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Appendices

Questionnaire included following questions:

1. Procurement in the municipality/federation of municipalities

- Does the municipality/federation of municipalities have a procurement strategy or procurement policy?

- Does the municipality/federation of municipalities have instructions and consistent modus operandi for the procurement process?

- Did the budget of the municipality/federation of municipalities direct the procurement?

2. The preparation phase of the procurement

- Who defined the need for service? Based on which grounds?

- Did you discuss the problems of the operation of the existing service provider? Did you consider improvement proposals?

- Did you inform the potential service providers the strategy of the local authority?

- Did you have in the procurement unit cross-functional meetings prior publishing the request for quotation?

- Who participated these meetings?

- Did you describe the service unambiguously?

- Did you define the roles of service provider and buyer clearly?

- How did you examine the supplier market?

- Which information of the suppliers was collected?

3. Procurement phase

- Did you organize meetings with the potential service providers? Where these organized in private or as a public meeting?

- Which subjects were discussed during these meetings?

- Who defined the procurement procedure?

- Based on which grounds was the particular procedure chosen?

- Who defined the selection criteria? On which grounds?
- How were different parties informed during the procurement process?
4. Procurement settlement phase
- Which collaboration and monitoring operations models were established?
- An incentive bonus and sanction models
- A follow-up model for the agreement and quality, f.eg. the exploitation of the end-users' experience during the agreement
- The termination procedure
- The procedure for notifying the defects
- The procedure for arbitration
5. Post-procurement phase
- How did you train and guide the service provider for the job?
- How do you monitor the operation of the chosen service provider?
- Have you had joint development projects with the service provider?
- How did you inform the agreement?
- Which kind collaboration you are having with the service provider

PART III: Posters and Oral Presentations

24. The Master´s Degree Programme in Active Ageing - Competence for the future

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ABSTRACT

Background: Ageing population is a common issue in Europe. The growing number of the oldest age groups will indicate increasing need for social and health care services in the future. While at the same time care services and environments are changing and becoming more diverse, there is an obvious need for new kind of social and health care expertise.

Ageing is also a unique and individual phenomenon. We all want to grow old in our own personal way. Today´s older people are active agents, consumers and influencers. New experts in ageing who are able to promote the wellbeing, health and activity of older people by developing services and activities for them are needed.

The Master´s Degree Programme (90 ECTS)

The Master´s Degree Programme in Active Ageing provides the students a chance to develop their expertise in ageing. The

graduates from the programme are able to work in multiprofessional communities of practice that support the rehabilitation and wellbeing of older people. They also have the ability to carry out demanding development and management tasks. They have a wide-ranging knowledge and the ability to develop, assess, modernize and manage services.

The studies are planned and implemented together with social and health care professionals and organisations. The core educational content includes: Competence in ageing, Rehabilitation, Management and leadership studies, Research and development studies.

Future professionals

The Master´s degree programme gives the same qualifications for public posts as the Master´s degrees provided by universities. The graduates can find employment in the public, private or third sector and apply for various types of development and management tasks related to ageing.

25. Structural Equation Modeling on Self-management in Patients with Hemodialysis

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ABSTRACT

Purpose: Self-management has been recognized as an important component of health care. An investigation on dynamic and comprehensive self-management and relevant factors should precede self-management support. The purpose of this study was to construct and test a hypothetical model of self-management in patients with hemodialysis based on the Self-Regulation Model and resource-coping perspective.

Methods: Data were collected from 215 adults receiving hemodialysis in 17 local clinics and a tertiary hospital in South Korea. The Hemodialysis Self-management Instrument, the Revised Illness Perception Questionnaire, Herth Hope Index and Multidimensional Scale of Perceived Social Support were used. The exogenous variable was social context; the endogenous variables were cognitive illness representation, emotional illness representation, self-management, and illness outcome. For data analysis, descriptive statistics, Pearson correlation analysis, factor

analysis, and structural equation modeling procedure were performed using SPSS Version 23.0 for Windows and Amos analysis 23.0.

Results: The hypothetical model with six paths showed a good fitness to the empirical data: GFI=.96, AGFI=.91, CFI=.95, RMSEA=.07, SRMR=.04. The factors that had an influence on self-management were social context, emotional and cognitive illness representation explaining 92.2% of the variance. Self-management mediated the relationship between psychosocial coping resources and illness outcome.

Conclusion: This research specifies a more complete spectrum of self-management process. It is important to recognize the array of clinical resources available to support patients' self-management. Healthcare providers can best facilitate self-management through collaborative care and understanding the ideas and emotions about the illness that each patient has, and ultimately improve the health
outcomes. This framework may guide self-management intervention development and assure clinical assessment.

26. Does patients' knowledge on patient safety issues encourage performance of patients' safety behaviors?

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ABSTRACT

Purpose: Patients have been encouraged to participate actively on the decision regarding their health and safety during hospitalization. Although some researches have been tried to educate patients as a way to improve patient safety, they didn't evaluate

the effectiveness of education in the perspective of patients. Thus, there was lack of evidences that the level of knowledge on patient safety could encourage safety behaviors of patients. Therefore, the purpose of this study is that identifying the relationship between patients' knowledge about patient safety and frequency of safety behaviors before and after patient education on the issues of patient safety.

Methods: A total of 270 patients admitted at surgical and medical units in a tertiary hospital of South of Korea consented to participate in this study. The frequency of safety behaviors was measured with self-reported questionnaire composed with six items by five-Likert scale developed in this study. Participants'' knowledge was evaluated with by OX quiz. Education on patient safety was provided by smartphone application developed in this study during hospitalization. Pearson correlation coefficient was used to identify the correlation between participants' knowledge and safety behavior.

Results: Before education, the knowledge level was not correlated with the frequency of safety behaviors (r=.069). Only age and education level were significantly correlated with safety behaviors of patients. However, after education by smartphone application, knowledge was significantly correlated with the frequency of safety behaviors of patients (r=0.169, p<0.01). And age was not correlated with the frequency of safety behaviors after education. Pearson correlation coefficients between education level and safety behaviors was decreased (from r=.170 p=.005 to r=.143, p=.019). Additionally, knowledge level (from 6.5 to 7.6, the average of right answers in OX quiz) and patient safety behaviors (from2.79 to 3.49) were increased significantly.

Conclusion: The factors with relationship between the frequencies of safety behaviors were educational level and participants' age in before education. However, the factor related with safety behaviors of participants was knowledge level on patient safety after education. This study demonstrated that educational intervention on patient safety was effective method to encourage patients' implementation on their safety behaviors.

Keywords: Patient safety, Health belief model, Patient education, Patient Participation

27. Implementing Incident Reporting System as a part of a patient safety education

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ABSTRACT

Purpose: In order to prevent the occurrences of preventable medical incidents, it have been emphasized the importance of incident reporting system. However, many studies revealed the under-reporting of medical errors among nurses. Therefore, it needs to educate nursing students as well as nurses the importance of incident reporting and how to use incident reporting system. The aim of this study is that implement a Web-based incidents reporting system to report observation of hazards and near misses during students' clinical experiences as a patient safety curriculum. Also, rates and types of incidents reported were estimated and compared to the results of previous studies.

Methods: In this study, Web-based incident reporting system was developed based on International Classification for Patient Safety (ICPS) version 1.1, which is the standardized common

framework for patient safety information. After nursing students reported the medical errors which they experienced or observed during clinical practicum, they analyzed the error about its cause and action to prevent reoccurrence using Root Cause Analysis method with educators.

Results: A total 104 reports were submitted by 89 nursing students for three months. The number of incidents and near miss were 61 and 43. Patient accident (fall) was most common, Medication/IV Fluids related incident followed in both near miss and incidents. Contributing factor for Medication related incident was in staff factors. Also, in an action to reduce risk of reoccurrence, staff training was conducted most frequently.

Conclusion: This is the first report describing hazard and near-miss reporting system based ICPS for nursing students. Reports of near-miss were about 40% of total reports, while nurses hardly report near-miss in previous study. In this study, it was not tested how much the competency about patient safety in nursing students was improved. Further research should consider measuring the awareness and competency of incidents reporting among nursing students.

Keywords: patient safety, medical errors, incident reporting system, nursing students

28. The effects of self-esteem and problem focused coping on post-traumatic growth among living safety police officers in South Korea

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ABSTRACT

Purpose: The objective of this study is to identify the effects of self-esteem and problem focused coping on post-traumatic growth among living safety police officers in Korea. Methods: The data were collected from the 137 police officers in charge of living safety in ten police offices of G city in July 2014. The collected data were analyzed using the SPSS/WIN 14.0 program for descriptive statistics, t-test, ANOVA, Pearson's correlation coefficient, and multiple regression. Results: Self-esteem and problem focused coping had a significant positive effects on post-traumatic growth. The explained variance for post-traumatic growth was 19.0%. Conclusion: To improve post-traumatic growth of police officers, strategies to increase self-esteem and problem focused coping are needed.

Keywords: Post-traumatic growth, Self-esteem, Problem focused coping, police officers.

29. The Effects of Secondary Prevention Program on The Health Risk Indicators and Self Care Compliance of Stroke Patients

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ABSTRACT

Purpose: This study aimed to investigate the effects of the secondary stroke prevention education program on the health risk indicators and self care compliance of stroke patients.

Methods: Non-equivalent control group pretest-posttest design was used to select the participants. Subjects were 54 stroke patients (27 in the experimental group and 27 in the control group) hospitalized in a K university hospital in D city, Korea. Health risk indicators and self care compliance were measured both for the baseline, as well as after intervention. The data was analyzed using X²-test, paired t-test and ANCOVA.

Results: There were significant differences on the systolic blood pressure, diastolic blood pressure, fasting blood sugar, weight and self care compliance.

Conclusion: The results of the study indicate that educational secondary stroke prevention program is effective for the health risk indicators and self care compliance. Therefore, it can be used as an effective nursing intervention in clinical practice.

Keywords: Stroke; Secondary Prevention; Health Indicator; Self Care

30. Diabetes Self-Management Interventions for Patients with Low Health Literacy: A Systematic Review and Meta-Analysis

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ABSTRACT

Background: Low health literacy is a potential barrier to self-management among patients with diabetes. A variety of strategies for low health literacy have been proposed for diabetes self-management interventions, but interventions accommodating low health literacy have been heterogeneous in terms of content and have produced mixed results.

Aim: To systematically review health-literacy-sensitive diabetes management interventions, with a focus on identifying strategies

for accommodating patients with low health literacy, and to examine the efficacy of these interventions to improve health outcomes.

Methods: PubMed, CINAHL, and EMBASE were searched for intervention studies published between January 2000 and January 2015. Two authors separately identified full-texts according to the inclusion criteria and assessed study quality using the quantitative components of the Mixed Methods Appraisal Tool. The final list of studies to be analyzed was made through discussion. The meta-analysis was conducted using a random effects model.

Results: Thirteen studies were selected from the 490 studies found in our initial search. We identified a range of strategies for accommodating those with low health literacy in diabetes self-management interventions, which encompassed four domains: written communication, spoken communication, empowerment, and language/cultural consideration. Using at least one of the spoken communication strategies led to positive cognitive/psychological, self-care,
and health outcomes. We found that, overall, health-literacy-sensitive diabetes management interventions were effective in enhancing HbA1C level in the meta-analysis.

Conclusion: Health care providers should consider active implementation of strategies for accommodating people with low health literacy in diabetes self-management interventions. The routine use of spoken communication strategies would be necessary to achieve the best health outcomes in diabetes self-management interventions. More research is needed to determine the individual effects of the key strategies that improve health and reduce health disparity.

31. Educational Attainment Moderates the Associations of Diabetes Education with Health Outcomes

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ABSTRACT

Aim: Diabetes education is a critical element of care for people with diabetes. However, the associations between diabetes education and self-care or health outcomes have not been clearly demonstrated at a national level. The aims of this study were to examine the associations of attendance of diabetes education classes with health behaviors and glycaemic control, and to understand whether these associations were moderated by level of educational attainment.

Methods: Data were analyzed for 456 adults from the 2012 Korea National Health and Nutrition Examination Survey V, collected from January 2010 to December 2012.

Results: No significant differences were observed between patients who had attended diabetes education classes and those who had never attended for factors such as smoking, drinking, exercise, nutrition therapy, or glycaemic control. There was a significant interaction effect between receiving diabetes education and level of educational attainment on obtaining optimal glycaemic control. Attending diabetes education was positively associated with optimal glycaemic control among patients with more than a high school education but was negatively associated with it among those with less than middle school education.

Conclusion: Diabetes education programs need to be tailored to the needs and cognitive capacities of the target population.

32. Expectations of Japanese Tourists Towards Forest-Based Wellbeing Tourism in Eastern Finland

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ABSTRACT

Landscapes and activities based on forests and lakes are the core components of Finnish rural and nature based wellbeing tourism (Komppula, 2005). In Finnish context wellbeing tourism refers to culture, nature, peace and quiet in the countryside (Konu et al., 2010). The wellbeing tourism facilities are often located in a rural environment, where acquiring a sense of one's own wellbeing through a peaceful environment and slow-life are core elements of a wellbeing holiday (Konu, 2010; Pesonen & Komppula, 2010; Pesonen et al., 2011). A Japanese idea of "forest therapy" (Shinrin-yoku) could be adapted to Finnish circumstances, as it refers to relaxation activity associated with forest recreation (Park et al., 2009) in which walking in a forest and breathing the forest air gives the hiker a pleasant and refreshing feeling (Li, 2010; Ohtsuka et al., 1998).

This paper presents findings of a case study, the purpose of which was to increase understanding of potential Japanese tourists' expectations towards a forest-based wellbeing tourism product in Eastern Finland. A multi method approach was applied, including a focus-group interview (Snicker & Komppula, 2013), virtual testing (Konu, 2015b) and participatory observation, complemented with questionnaires and interviews (Konu, 2015a).

The findings indicate that highlighting the opportunity for solitude in safety is important, since these attributes represent luxury for people living in densely populated urban areas. Second, for someone travelling from the other side of the world, visiting more than one destination on a trip would be more attractive than a one-destination trip. Third, the appreciation of high quality is typical for Japanese tourists, which for example, means helping customers with their luggage as a simple courtesy to the customer, even if the Finns themselves are accustomed to more independent travel and self-service. Fourth, the spiritual nature of the forest and offering activities such as basic Shinrin-yoku (including a slow stroll and meditating in the forest) and Sauna-yoga might be appealing. Hikes in a fairy-tale forest early on a summer morning or in an autumnal mist are different forest experiences from those available in Japan, emphasizing the opportunity to feel the forest with all the senses. Walking barefoot on a soft surface is the best way to experience the soft soil of the forest floor and picking mushrooms, berries and natural materials for decorations is permissible in Finnish law, known as everyman's rights. Fifth, clear instructions, signs and guidance almost to the extent of pampering are needed for the Japanese target group.

In conclusion it is argued that simple things, like experiencing nature with all senses may be a refreshing and rejuvenating experience for people accustomed to hectic environments in their everyday life. The quiet natural environment was emphasized in the descriptions of participants of the study concerning an ideal forest based tourism offering, indicating that tourism revolving around silence could be an attraction in itself for Finland.

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33. Physical Activity and Related Factors among Old-Older Women in Korea

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ABSTRACT

Purpose: The purpose of this study was to examine the current status of physical activities and related factors among the old-older women to gather some basic data for developing physical activity promoting programs.

Methods: Participants were old-older women (aged over 75) residing in an urban area of S. Korea. Data collected from the 15th to 18th of March, 2016 using questionnaires regarding their individual characteristics, mini-mental state examination (MMSE), depression and community health activity model program for seniors (CHAMPS) were analyzed with SPSS 20.0 for descriptive statistics, ANOVA and Pearson's correlation.

Results: Average age of the subjects was 81.6 (years). Their physical activity was generally low that the weekly caloric

expenditure of all listed activities was 1472.9 kcal at the frequency of 11.86 times, including the least moderate intensity activities of 459.3 kcal at the frequency of 2.08 times. Among the above mentioned variables, significant difference was found only among groups of different MMSE scores in the caloric expenditure for all listed activities (F=5.471, p=.006) and for the least moderate intensity activities (F=4.905, p=.009), with respective correlations of (r=-.24, p=.015) and (r=.27, p=.005) for the two activities.

Conclusion: S. Korean old-older women were generally low in all physical activities, including the health-promoting, moderate intensity activity. Cognitive function played an important role in determining the physical activity of old-older women. Therefore, it is needed to develop a program that would promote physical activity through the improvement of cognitive function.

Key words: Older adults, Physical activity, Related factors

34. Values as a Determinant of Entrepreneurial Intentions

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Abstract

Personal values drive human behavior and, thus, they play an important role also in entrepreneurship (Hemingway 2005). A closer look at values may, for example, offer explanations how entrepreneurial intentions are formed, but still the research on the matter is scarce and relevant gaps in knowledge remain (Fayolle, Liñán & Moriano 2014). Furthermore, although several studies indicate that role models play significant part in supporting entrepreneurship (e.g. Bosma et al. 2012) and that educational background can either increase or decrease entrepreneurial intentions (e.g. Lee et al. 2011; Henley 2007), there is a lack of research on how role models and education are related to the way of starting a business. This study addresses these knowledge gaps by examining how values, alongside with role models and

educational background, are related to the way students would realize their entrepreneurial aspirations if they were to start a business. Do different values, role models and educational background affect whether they would like to start their businesses as lone entrepreneurs, joint entrepreneurs or life-style entrepreneurs?

The data was gathered among students in Eastern Finland studying in the vocational school, the university and the university of applied sciences. A quantitative on-line survey was sent to 21 915 students and received 3 680 responses. After excluding multivariate outliers as well as respondents who stated to have a full-time employment or who responded monotonously (having zero standard deviation) in all items, the resulting sample-size was 2 931.

In measuring entrepreneurial intentions of the respondents we used a 15 item scale. The principal component analysis resulted in three factors named *joint entrepreneurship intention* (JEI), *lone entrepreneurship intention* (LEI) and *life-style entrepreneurship intention* (LSEI). Respectively, Schwartz value types were measured by using the 40 item scale version (Schwartz 1992, 1994). The principal component analysis resulted in ten factors, eight of which are interpretable in terms of Schwartz's value theory – namely *power*, *achievement*, *hedonism*, *stimulation*, *self-direction*, *benevolence*, *tradition* and *security*. Of the remaining two value types, *universalism* and conformism, universalism disintegrated into two factors – the first emphasizing ideals of *social world* and the other those of *natural world* - and conformity did not result in a factor.

The results of the multivariate regression model show that if one's spouse or parents are entrepreneurs, then the intention to start as a lone entrepreneur is stronger than in the case where one doesn't have entrepreneurial role models at all. Regarding education, the difference between being a student in the university of applied sciences or in the university lies in that the first is positively related to joint entrepreneurship while the latter is not. With regard to the values, the results show that the self-direction value type is positively associated with all

entrepreneurial intention types, whereas stimulation, 'nature-universalism' and tradition are positively associated with lone entrepreneurship and life-style entrepreneurship. In addition, benevolence and 'social-universalism' are positively associated with joint entrepreneurship and life-style entrepreneurship. The analysis resulted also in some interesting oppositely directed coefficients. Namely, (i) power is positively related to LE but negatively related to LSE, (ii) achievement is positively related to JE and LE but negatively to LSE, (iii) hedonism and security are positively related to JE but negatively to LSE. Finally, the analysis allows also an interpretation at a more abstract level where the ten items of the value typology are integrated into four categories. In quite broad lines, it appears that self-transcendence (integrating benevolence and universalism) values characterize positively LSE but, on the other hand, LSE is negatively positioned with respect to self-enhancement. Furthermore, self-enhancement and conservation are largely values characterizing SE and JE.

To sum up, this study is among the first to empirically show that values are related to the intentions of starting a business as a lone entrepreneur, a joint entrepreneur or as a life-style entrepreneur. It also shed more light to how role models and educational background affect students' entrepreneurial aspirations. Thus, the findings contribute to research on entrepreneurial intentions by providing information about the factors that influence individual's perceptions on entrepreneurship and the attractiveness of its different forms.

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35. Difference in Levels of Depression, Anxiety and Stress according to Behavioral Types (DiSC) for Nursing Students

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ABSTRACT

Purpose: This paper was to identify differences in the levels of depression, anxiety and stress according to behavioral types for nursing students.

Methods: A cross-sectional design was used. 181 nursing students answered for this research. Structured questionnaires were employed; DiSC profile for behavioral type, Korean version of mindful attention awareness scale (K-MAAS) for mindfulness, DASS-21 for depression, anxiety and stress. SPSS was used to analyze the data. ANOVA was used to depression, anxiety, stress and mindfulness awareness scores according to behavioral types.

Results: A total of 165 nursing students participated in this study. This study reported that the percentage of behavioral types were 43.6% (influence), 29.7% (steadiness), 15.8% (conscientiousness), and 10.9% (dominance). Conscientiousness of behavioral types had the highest scores in depression and dominance in anxiety and stress. However, influence had the lowest scores in depression, anxiety and stress. There were significant differences among behavioral types for depression, anxiety and stress (F=5.07, p=.002; F=3.18, p=.026; F=3.83, p=.011).

Conclusion: The study showed differences in the levels of depression, anxiety and stress dependent upon behavioral types. This study may help to use the optimal intervention to reduce depression, anxiety and stress according to behavioral types.

Keywords: Behavioral type, Depression, Anxiety, Stress