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Innovation competence as part of the new hybrid professions

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Abstract

The competencies provided by higher education must be relevant from the viewpoint of working life, i.e. education should meet the needs of the working life and also develop it. The challenge is how to be able to react promptly on the changes and challenges of the society. The objective of this paper is to examine how educational policy could be developed in order to observe these development pressures. Innovation competences (knowledge, skills and attitudes needed for innovation activities to be successful) and how to develop them in higher education are discussed from the viewpoints of educational policy and the working life.

Keywords: *Innovation competence, hybrid profession, higher education, educational policy, curiosity*

Background and approach

The significant social change, where previous professions are falling out and new ones showing up, is typical for most developed economies. Education should meet the needs and expectations of working life and develop the current working life i.e. the competencies and qualifications provided by education and especially by higher education must be relevant from the viewpoint of working life (cf. Ministry of Education and Culture, 2011a; Jayakumar, 2008, 615–620). However, the needs and expectations in working life are dynamic and under a constant change. There is a continuous pressure of change, caused for example by globalisation and increasing international competition, climate change, and technological development (Ministry of Education and Culture, 2011b). The key challenge is the choice from the viewpoint of educational policy: how to be able to react on the changes and challenges of society in order to meet the expectations and needs of the surrounding society. Therefore our success depends largely on how educational policy could and should be designed and developed in order to observe societal development pressures emerging from society, to react to them, and to act in a value creating way in national and global value chains.

All education, including higher education, is regularly criticised for its slowness to react to society's changes. However, it is impossible for any education to follow social changes, or economic fluctuations, in real time. This leads to the question about the educational purposes of the educational policy: what kind of skills and knowledge the education should be able to provide? Specific skills and knowledge, which will become more or less out of date, or general knowledge and skills, which are complicated to be evaluated in order to define their real application value in working life environments (Peters, 2009, 51–70)? In the development of higher education, the importance of trying to anticipate the changing skill needs is emphasised.

The optimisation of the educational solutions regarding the demand for education, the needs of the labour market, the future development of the population and the regional policy requires versatile examination of the current systems and partly more daring instruction than earlier. The learning outcomes should focus especially on chosen generic competencies in order to ensure that the education can stand up to the ravages of time, without needing continuous updating and refocusing, but simultaneously the dynamic working life expectations should be met by providing required competencies and qualifications (e.g. Termblay et al., 2012, 113).

Postmodernity, a condition or a state of being associated with changes to institutions and creations (Giddens, 1990) represents the current societies where unexpected and abrupt changes are taking place. The postmodern time calls for changes in education and in working life. The challenge for education is how to prepare the learners to meet the demands of a rapidly changing working life and society. If education meets the pressure coming from 'the outside', it aims to develop and change the education in order to better answer to these chang-

ing needs and expectations. However, as Popper states, it is difficult to know anything about the future for sure, because the innovations defining the future have not yet been invented (Popper, 1961). Diversifying working life is a reality, and now the times are over for a certain degree title leading to a certain work task. There is a growth in 'hybrid professions' (Hanhinen, 2010), which require flexible integration of several competences. It is probable that many traditional professions need to give way to new hybrid professions.

Innovation competences as a goal for educational policy

According to the Finnish National Innovation Strategy (2008), the key drivers for change are globalisation, sustainable development, new technologies and the demographic changes in the population. These factors have an effect on the planning and implementation of education, as the professional competence requirements tomorrow are going to differ from those of today. This is also the case with the knowledge base, skills and attitudes of new students admitted into higher education institutions in the future (Tepper, 2004). These changes in the operational environment necessitate that skills and attitudes matching the new requirements are consciously and systematically developed alongside with the students' knowledge bases. Social and interactive skills, cultural abilities, understanding the prerequisites for working in contact with customers, preparedness for entrepreneurship, responsibility, creativity and problem-solving skills as well as tolerance to difference and uncertainty are attitudes and the kind of skills that a future professional should have. In the Finnish business environment, which aims to become the best innovation environment in the world, innovation competencies are vital (e.g. SITRA, 2005; WEF, 2014).

Interaction and networking are becoming invaluable parts of any expertise.

Innovation competences are learning outcomes that refer to knowledge, skills and attitudes needed for the innovation activities to be successful. The innovation competences follow the European Qualifications Framework (2011) and comprise three levels: individual (creative problem-solving, systems thinking, goal-orientation), interpersonal and networking innovation competences. They are generic by nature and should be included all degrees in addition to profession (or study field) specific competences (such as engineering, business, arts etc.). The economy and the success of future enterprises is more and more based on innovations, which are created by innovative and curious employees capable of not only inventing something new by themselves, but also of participating in the processes where new solutions are created by working together. Interaction and networking are becoming invaluable parts of any expertise. What this practically means is that innovation competences should be set as a goal of education in all disciplines. A new way of approaching things and ideas is something that can guarantee success not only for the individual student but also for the whole society, enterprises, other working life actors, students and the university itself. (Penttilä et al., 2013 & 2014; Räsänen, 2014.)

In the future, there will be a need for professionals who are capable of defining their goals and means to achieve those goals by themselves. A lot of personal initiative is required. It also seems obvious that not only individual knowledge is valued, but instead people are required to build networks and interact in them to find the lacking pieces of information from different experts in their personal network. All this calls for an ability to expand one's connections to areas totally different from one's own background. This kind of boundary crossing will be something that can help future experts and their organisations to succeed. (Penttilä & Kairisto-Mertanen, 2013.)

Competence anticipation and employer expectations

Competence anticipation is an important task in higher education and it must be based on continuous and systematic data collection and analysis. The data used in this discussion is based on relevant literature, national and international research reports and data (e.g. Ministry of Education and Culture in Finland, EK, 2011; Ammattikompassi, 2014; EQF, 2011) and qualitative data collected from Regional Council of Southwest Finland (2015) and other 18 regional councils and their anticipation working groups in Finland.

The ability to work in a new way to achieve new or improved solutions is becoming essential and therefore companies are changing the way in which work is performed. Mechanical thinking 'by the book' will seldom be the right way of working in the future. Strict instructions are being replaced by guidelines and the goals of work are becoming vaguer. Employees have to define the content and the rules of their work on their own or together with others. In order to prepare for this development, promoting creativity and innovativeness will become the foundation of all education. Creativity should be understood as divergent thinking: imagining alternative solutions to problems. Innovativeness is the ability to put these ideas to practice. Education that promotes creativity and innovativeness adopts methods from working life; experimenting with others without being afraid of making mistakes must be encouraged. This is why future education will focus on competences in addition to knowledge and working in groups and networks instead of working alone. (Ministry of Education and Culture, 2004, 2005, 2006, 2009; EK, 2011, Penttilä et al., 2013 & 2014.)

No job in the future will be independent of the impact of global megatrends. Nowadays every job is more or less international, which should be understood also among employers. The recruitment criteria that employers consider to be highly important are reliability, the ability to access and handle information, problem-solving skills, and communication and co-operative skills. Half of Finnish employers associate international experience strongly with the following attributes: interest in new things, empathy, persistence, self-knowledge, self-confidence and reliability, which can refer to that international experience can be a potent indicator in helping to identify the competences appreciated by employers. The 'Hidden competences' research emphasises three factors forming the basis of the extended understanding of international competencies; productivity, resilience, and curiosity. (Demos Helsinki, 2013, CIMO, 2014.)

Obvious value is attached to *productivity* in working life and its connection to international experience is apparent; when coming across new cultures and situations, the ability to efficiently come up with solutions has to be developed and exercised. *Resilient* employees are able to adapt, know their limits and strengths, are confident and persistent. Resilience guarantees that employees are able to recover and push forward regardless. Such attributes as tolerance, interest towards new issues, intercultural knowledge, co-operation and working ability are identified as elements of *curiosity*. In a world that is filled with information and possibilities for exchange, curiosity is essential in providing an arena for harnessing knowledge. (Chamorro-Premuzic, 2014; Demos Helsinki, 2013; CIMO 2014.) The research work from Finland (Ammattikompassi, a database providing information on the future development of professions in Finland) refers to similar findings. The preliminary data state that features such as curiosity, creativity, innovativeness and inventiveness are mentioned relatively often and especially in the context of professions closely connected with human relations, such as sales professions, teachers and social workers (Ammattikompassi, 2014).

Listing the competence needs of the future working life easily creates an image of a super individual and employee. However, one person does not need to know everything – not even in the future. Instead, good competences of the groups and networks of an individual become the key factor, because in the future it is crucial to combine various competences through these. However, the most interesting of individual traits is curiosity, being a motivating element independent of the study field or educational level (e.g. Pritscher, 2010, 107–108). Obviously, curiosity will continue to raise its status as a societal strength and having on impact both on education and on the job market. First, curiosity helps to benefit from new influences and opportunities. Second, curiosity is a dynamic prerequisite for society, because it is not restricted to any particular field of study and thus provides an answer to the question of which type of expertise is required in societies needing structural changes; no more skills but more curiosity. Third, curiosity is motional, as a curious person is interested in new things and capable of directing the attention to new issues.

Curiosity brings a new element to the discussion of competitiveness. Florida's creative class theory (2002; 2005), an exclusive elite class generating competitive advantage, must be replaced by curious people carrying us through huge global changes (cf. Haring-Smith, 2006, 23–24; Marginson, 2009, 217–256). Curious workers wish their work to be more or less connected to the society and its development, they are interested what happens globally, they want to work in inspiring problem-solving environments and do work that has a meaning, impact and results.

From the viewpoint of working life, learning that encourages grappling problems seems natural because to an ever increasing extent, jobs consist of defining problems and solving them. In problem-based learning, the starting point is a problem deriving from society. Learning that occurs when handling a problem may be more meaningful than finding a solid solution or a 'correct' answer; posing questions should be encouraged more than finding answers. Posing good questions is also the starting point of many

new innovations and businesses. The key question for new competitiveness is to find problems and not only solve given problems. This also requires understanding of customers and end users. Apple's iPhone is an example of this; most phone manufacturers did not see any problems with user interfaces but Apple, not being technologically superior to others, saw the problem more clearly and could answer for user needs better than its competitors.

Finding, encouraging and developing curiosity will become an essential question in improving competitiveness. The new competitiveness will emphasise the ability to solve wearisome, even wicked and tedious problems, as well as the ability to understand systemic change and design scalable solutions. Innovations do not occur as an output of efficiency but problem-solving. Disruptive innovations are created when the environment for companies operating on the same field changes dramatically, the majority falling out from the competition because they are unable to change their way of action and utilise the change (Wessel & Christensen, 2012). The ability to multiply and scale operational models was successful earlier, but now and in the future the success is based on the ability to understand and follow the systemic change caused by global changes.

Conclusions and discussion

In the future, we need the very fast evaluation of the education, especially the evaluation of expediency of the education. It is no more possible to view the situation still as in the early years of 2000, as major changes in education require at least a decade. The education should focus more on general competencies expected in working life and accept that many specific professional abilities are adapted in practical work. This is, and must be, supported by the educational policy as well. Maybe education is no longer able to offer very narrow profession-based competencies, because the changes in working-life are so quick and unpredictable.

Education should be designed and developed in an open and network-based environment

The opportunity and the strength of Finnish higher education lies on that whether we are able to apply the existing knowledge to practical needs in businesses and organisations. Therefore practical skills and competences and on the other hand creative thinking, curiosity and problem solving skills will be more and more emphasised in education. In addition to that, all education should aim to create a motivated and enthusiastic atmosphere and forward it to the surrounding working life.

Education should be designed and developed in an open and network-based environment in order to observe societal development pressures emerging from the economy, to react to them, and to act in a value increasing way in national and global value chains. The circle of continuous improvement contributes not only to the continuous development of the included elements in curricula but also ensures the competencies and professional qualifications of students. This professionalism is responsibility-centred as well as development-oriented; it encourages actors to absorb and create new knowledge, which supports creating in-

novations in working life. The danger is that we still educate students to strictly and exactly defined professions and to jobs assuming individual work contribution, even if working life is developing into another direction. The Finnish education has generated good maverick performers, which does not meet the requirements anymore. Creativity, curiosity and an entrepreneurial attitude are assumed, which both refer to the wish and ability to see opportunities and seize them. Flexible and fast-reactive education can be a powerful starting point for this development.

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