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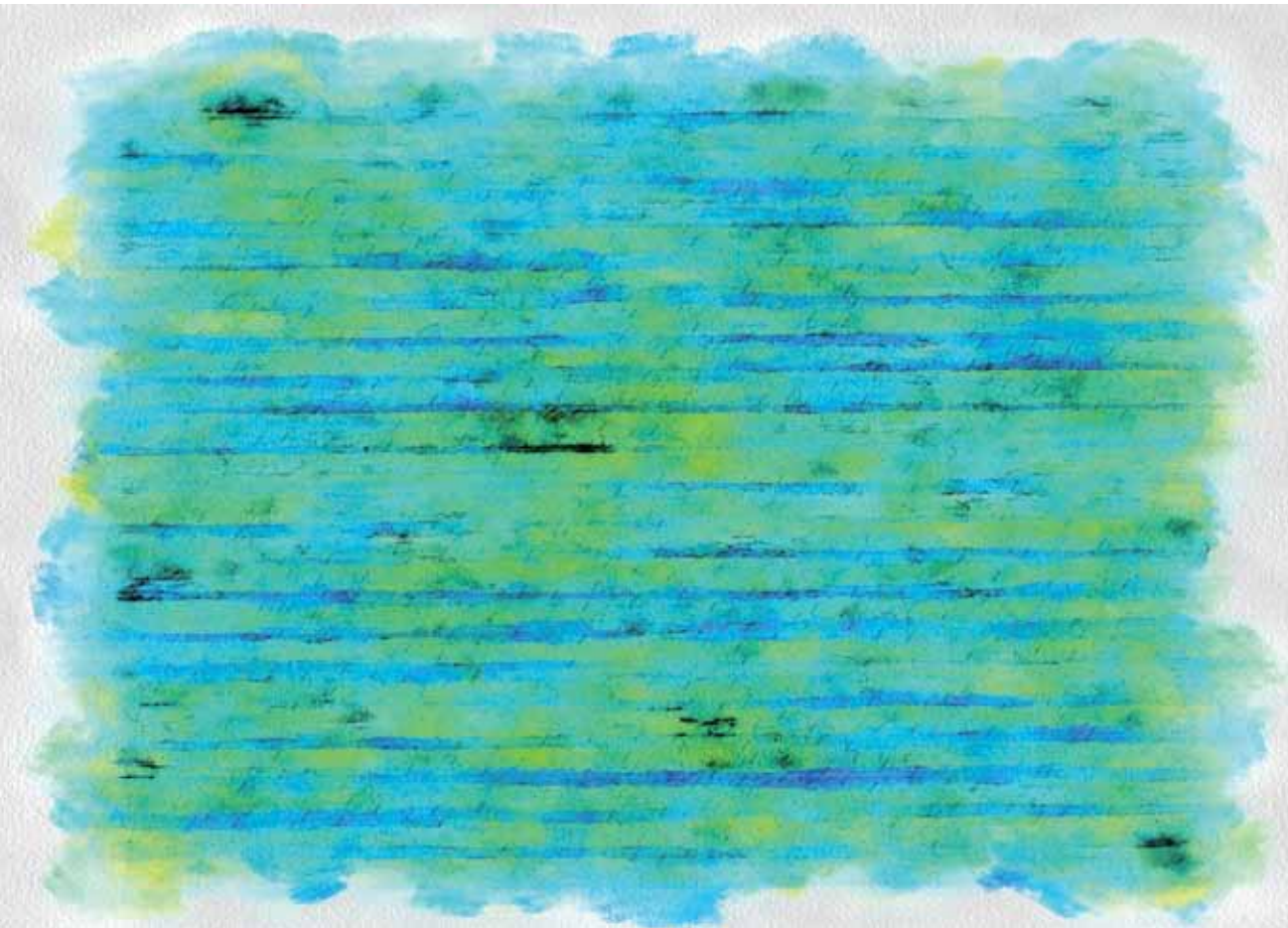
PRACTICAL SKILLS, EDUCATION AND DEVELOPMENT

– Vocational education and training in Finland



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Contents

Supporting learning and professional development

Versatile students in vocational education

Foreword

The role of education is to educate good citizens, develop working life and to offer students possibilities for further education. Education is a key factor in influencing the situation of employment and increasing the skills and competences of citizens.

In recent decades in Finland, vocational education (i.e. vocational school education, adult education and education at universities of applied sciences) has come to be highly regarded alongside academic education. Student numbers have increased as the demands of working life have placed further importance on the education of its staff members. Teaching positions are also popular at the present moment. This is the result of previous decisions made, many years' work and co-operation between working life, the Ministry of Education and Culture and educational institutions.

In addition, pedagogical ideas and learning environments have changed over the years. Versatile learning environments, including classrooms, workshops, work-integrated learning, e-learning methods and international environments, present new possibilities for teachers and students.

Presently, one key element when developing vocational education in Finland is to guarantee a high quality of learning that is continuously developing. All students should receive an excellent standard of education. The constant evolution of working life presents challenges to develop vocational education further. Universities of applied sciences offer higher, practical education and research and developmental work.

The background and development of vocational education and teacher education in Finland, pedagogical habits and future visions are outlined within the pages of this book. These articles are a result of research and work experience in the educational field. The writers are specialists in their own field representing several universities of applied sciences and scientific universities.

We seek that this publication finds its audience among individuals who are interested in developing vocational education, teacher education or who are studying to become a teacher. The focus is on the ideas and perspectives that we have in Finland. However, the interest to develop

vocational education is more or less universal and we hope that this publication will also find readers abroad.

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Background of vocational education and training in Finland

Education of skilled workers and citizens – Vocational education in Finland

Jari Laukia

Introduction

Vocational education is a very versatile phenomenon. Practical skills have been possible to learn with apprenticeship education, school-based vocational education or different kinds of on the job learning systems. Traditional ways to learn practical skills needed in working life and handcraft skills have been apprenticeship-type education organised by city quilds. In the 19th century, when the development of technology was changing the nature of working life, and when liberal political and economical ideas were changing society and developing industries, transportation and trade, schools for practical skills and professions were established. Engineers and business sector professions are examples of these professions (Nykänen 1998, 11–13). In the beginning of the following century vocational schools for basic labour professions were established. In this article the focus is on school-based vocational school education. How did the first vocational schools come into being? How did they develop from the past to the present day? What were the aims and objectives of vocational schools?

From a static to dynamic society

In 1809 Finland became part of the Russian Empire as a Grand Duchy, ending 500 years of being part of the Swedish Kingdom. As a result, some of the more civilised Swedish-speaking people fled to Sweden. Finland was a remote agrarian country in Europe with minor towns and poor transportation connections. In the middle of the century, during the regime of Tsar Alexander II, the societal and economical change became more

rapid. Finland adapted her own currency, the markka[1], in 1860 (Klinge 2000, 87–102). The freedom of trade in 1879 ruined the old quild system in the cities and ruined also the vocational educational system organised by the quilds. Labour forces in the countryside and towns were given the freedom to choose their places of living and working. People who didn't own land moved to the cities and towns where industry and business life needed a larger labour force.

YEAR	POPULATION IN HELSINKI
1860	31 000
1900	93 600
1920	160 921

Table 1. The population of Helsinki, the capital of Finland, grew rapidly between 1860–1920.

YEAR	POPULATION IN FINLAND
1850	1 636 913
1900	2 712 562
1920	3 364 807

Table 2. Development of agriculture and medical health increased the population in Finland.

The old society ruled by estates was facing criticism from liberal groups. In 1907 a chamber of parliament elected by general elections commenced its work. Finland was one of the first countries where both men and women received political rights. The foundations of a modern society were established.

The economic policy in the country concentrated on developing agriculture and forestry. This was official policy even until the 1940s. There were, however, people who saw the change coming and also wanted to change education. They saw that education could have an important role in developing society. The university student leader and docent national romantic writer Adolf Ivar Arvidsson (1791–1858) wrote that the old guild system method of education took too long (six to eight years) and that it was inflexible to meet the challenges of the economy. Furthermore, it did not develop business life (Alf-Helonen, 1954, 12–13, 46). One of the most famous philosophers and statesman in Finland, Johan Wilhelm Snellman (1806–1881), also criticised the traditional vocational education organised by guilds. A student of German philosopher C.L Hegel, Snellman's opinion was that the quality of products that the industry in Finland was

[1] Finland has been part of the Eurozone since 2002.

producing was poor. Reasons for this were a lack of competition and poor education. The education system concentrated on the education of civil servants and civilised people, but vocational education was in poor shape. Vocational education needed to be renewed so that it could give students good vocational skills and good education. Also, people with academic education should study technology and have additional practical skills. ”Academic work did change ideas and ideologies. Practical work together with new ideologies changes life and reality” (JVS Kootut teokset, osa 15, 52–53). Schools should be established to increase the educational level of common people and to educate skilled workers. Snellman also criticised pedagogical methods that were being used in vocational education. The habits of masters taking care of the education were often crude and they treated apprentices roughly.

The establishment of new types of schools

Changes in society also renewed education. New regulations for comprehensive school were introduced in 1866. It was, however, not until the end of the 1930s when all children in practise had at least four years of basic education.

In 1839 the first commercial college was established in the city of Turku, Agriculture College was established in 1840, technical real schools in 1847 and the Forestry College 1861. Helsinki Real School changed to Polytechnic College in 1887 and became Technical University in 1908.

The first vocational school was not established in Helsinki until 1899. Vocational school-based education, where theoretical subjects and practical craftsman skills and industry worker skills were studied at school under the guidance of a teacher or a workshop master, was a new type of education in Finland. Ideas, models and influences were sought from abroad. At the end of the 19th century, and in the beginning of the 20th century, many people from Finland visited vocational schools, adult education institutions and practical higher education institutions abroad. Teachers, officers and industry leaders did this travelling, especially to Sweden, Germany, Austria and the Netherlands. One of the most important trips in light of the establishment of vocational schools in Finland was a trip made by lecturer Jonatan Reuter[2]. Reuter made his trip in 1898 with financial help offered by the City of Helsinki. During this trip he

[2] Reuter was an engineer. He studied in Münich and Zürich and worked as a teacher in Helsinki Industrial College and Handicraft School. He was also interested in improving the living conditions of the labour class.

visited many European countries, including Germany, Austria, Switzerland and Holland. The Austrian system especially impressed Reuter and he modified a similar vocational school model to be utilised in Helsinki (Reuter 1898). The curriculum included theoretical subjects, vocational theoretical subjects and practical studies. Other growing towns in Finland were also interested in establishing vocational education and during 1900–1916 vocational schools were also established in Pori, Porvoo, Kotka and Viipuri. All of these cities were situated in proximity to the coast with increasing numbers of industry and trade companies. Vocational schools in Tampere and Kuopio were established in 1912 and 1917. These were the first vocational schools to be found in inland cities.

Development of vocational education as a part of the liberal social movement

Vocational school education was supported by the fact that educated people were needed in business life, factories and workshops. New technical innovations, machines, railroads and electricity, among other things, changed working life. Transportation and trade were increasing slowly but steadily. Another reason for the support of vocational education was a philanthropic one. Philanthropic, educated people found it important to offer education for students from different social classes.

The development of vocational schools in Finland was in keeping with similar growth internationally. For example, vocational schools in the United States were not only established to educate skilled workers for business life. Many immigrants were moving to the country and vocational schools were important for integrating young students into society and preventing unemployment (Kantor and Tyak 1982, 2).

The reform of John Dewey's pedagogical ideas had a big influence in the USA and his ideas were also well known in many other countries. Dewey was aware of German education developers. He even met Georg Kerschensteiner[3] in 1910 when Kerschensteiner visted the USA. Kerschensteiner was developing a school system in Munich, Germany, and his active school ideology was also well known in Finland. According to Peter Greinert the basic aim of a vocational school was to educate labour class children and middle class citizens with liberal values. Political integration was just as important as education for working life (Greinert 199, 37 39).

[3] Georg Kerschensteiner, reformist in developing education, school superintendent of city of Munich, liberal party member in German parliament in Berlin 1912–1919.

Kerschensteiner put emphasis on practical skills and even mentioned that handcraft was the basis of art and science (Kerschensteiner 1925, 30).

In Sweden at the end of 19th century it was also a duty of the school to solve social problems and integrate youth from different social classes into society. Engineering the education concepts of social engineers meant that engineers were not only developing new technical solutions but also developing conditions in working life and searching for alternatives for Taylorist-types to organise work in industry (Björk 2004, 50–51).

In Finland, vocational school was for students who had completed basic comprehensive education, but who, because of their young age, were unable to complete paid work. Because of occupational health and safety regulations children should be 15 years old to take on paid work. When children finished their comprehensive education at the age of 13 they still had two years before they were able to take a paid job in the industry. It was a danger that during those two years walking idley on the streets that they would embrace habits that were not suitable in society, such as criminal actions, laziness and ideas of socialism. In the countryside, meanwhile, children of this age had plenty of work to keep themselves busy with around the farmhouse and in the forest.

Liberal upper class people with good education and connections to business life and trade were interested in developing vocational education. They were also ready to cover part of the costs of the education either by paying taxes for cities or establishing private schools. In addition to Jonatan Reuter, the influence of Senator Leo Mechelin was an important one. Mecelin was a professor, liberal politician and a chairman of the Helsinki City Council. He was also a bank director and was one of the members who established the company Nokia at the end of 19th century. Gusstav Nyström was also a member of Helsinki City Council and worked as a professor in a technical university. He developed the living conditions of the labour class also by developing their housing conditions. One key person in Tampere was engineer Matti Viljanen. He was the secretary of the committee preparing vocational education in Tampere and worked among other things as the deputy director of the textile company Forssa Co, a lecturer at commercial college and technical college and, in the 1920s, was a member of the Parliament of Finland (Sinisalo 1947, 318–320). In other cities the people who were interested in developing vocational or practical education had a very similar background.

Jalmari Kekkonen (the Inspector of Vocational Education in the Department of Trade and Industry) developed vocational education curriculums especially. Under the influence of Kerschensteiner's active school ideology curriculums were developed in a student-centred direction and workshop

education was increased. It was more motivating for students to plan and make real practical products than to study and train for special phases of work. Under the influence of Uno Chygnaeus and Mikal Soininen, who were developing comprehensive education in Finland, handicraft was included in the curriculum of comprehensive schooling. In principle there were eight years of compulsory comprehensive education where, especially in the two upper classes, education could also include workshop studies and the learning of practical skills. Although the aim and objective of comprehensive school was not mainly to educate skilled workers, but good citizens, there was, however, competition between the students of comprehensive school upper classes and vocational schools (Halila 1963, 108–110; Jauhiainen 2002, 34–35, 63; also Niemi 2012). This competition lasted until the end of the 1950s when new regulations strengthened the role of vocational education within the educational structure.

Expansion of vocational education

In 1917 Finland gained her independency. In 1918 there was civil war in the country, which was more or less disruptive for schooling also. In 1921, comprehensive school was ordered to be compulsory for all children and education received nationalistic objectives (Niemi 2012, 20–21).

The amount of vocational education students increased slowly during the 1920s and 1930s. Finland was an agrarian country and its official economical ideology was still based on agriculture and forestry. In 1920 there were 14 000 students studying in schools offering vocational education. In 1940 the amount of students was 20 380[4] (Klemelä 1999, liitetaulukko 13). In spite of the need for post-comprehensive school education cities were not very interested in establishing new vocational schools because of the lack of financial support from the state. When public schools were not established, big private companies like Wärtsilä, Kymi and Yhtyneet Paperitehtaat established schools of their own. These schools operated also under the Department of Trade and Industry (Yksityisteollisuuden ammattikoulut 1939). The amount of students studying at private industry-owned schools was about 10 percent of all vocational school students. In addition to industry schools there was also, for example, commercial colleges owned by private organisations.

Between 1939–1944 Finland fought against the Soviet Union in WWII. In spite of these difficult times schools were in operation for the

[4] These figures include students in schools of all vocational education sectors.

majority of the time. Every now and then schools were closed because of bombings and many school buildings also served as military hospitals.

Distant learning methods were used as much as possible when schools were closed. In the area of vocational education during wartime, however, there was also the mention of development. The Parliament of Finland decided on new regulations for vocational and commercial education. Also, the Ministry of Trade and Industry's vision of the economic future changed in particular. The most important areas of economic life in future appeared to be industry, trade and transportation. The Head of the Department of Vocational Education, Aarno Niini, was in the very important position of developing vocational education. The amount of vocational education had to be increased, and it had to be possible to continue studies from vocational school to upper education institutions, and there had to be a new type of educational institution such as polytechnics or universities of applied sciences taking care of practical higher education (Ammattikasvatuksen kehittämisen 10-vuotissuunnitelma, 1947).

After WWII new vocational schools were established and the amount of students was increased. The new law for vocational education in 1958 was one of the important milestones in the history of vocational education. New regulations ordered that all municipalities of more than 20 000 inhabitants must establish a vocational school. Smaller municipalities had to reserve studying places at these schools for their young inhabitants. New regulations meant a rapid increase in the amount of students. After WWII the baby boom increased the number of young people in society and it was necessary to find a studying place for them. There was also a very rapid change of livelihood between the years 1950–1970. In fact, the change was more rapid than what was experienced in Europe in general. In 1950 some 46 percent of labour force earned their living in agriculture. The amount was 20 percent in 1970. The amount of industry, trade and, especially, public services was increasing. People were moving from the countryside to cities.

Figure 1 describes the development of the amount of students in post-comprehensive upper secondary general education (middle school and gymnasium) and upper secondary vocational education. The amount of general education increased rapidly in the 1950s and 1960s. Because of the new law in 1958 the amount of students in vocational schools began to increase.

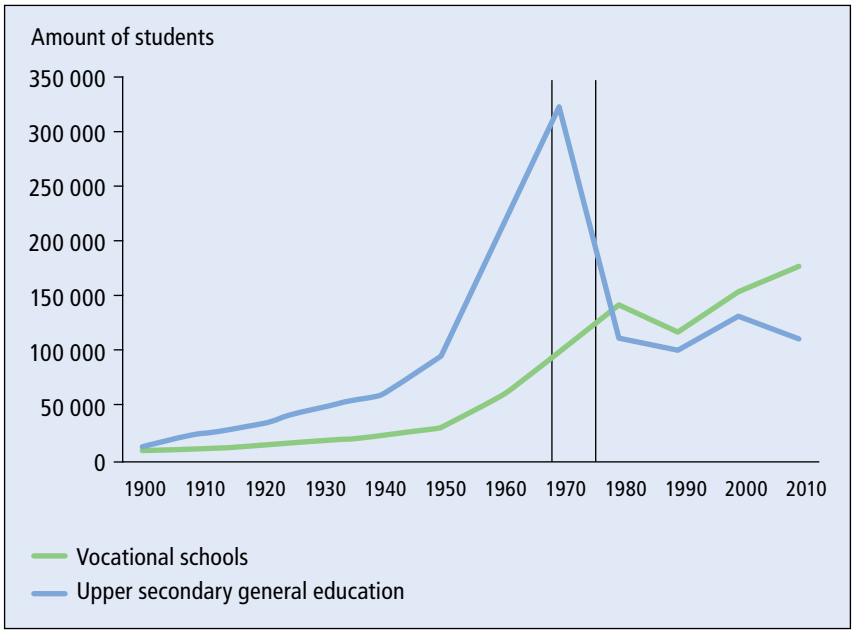

Figure 1. The amount of students in vocational schools and upper secondary general education (middle school and gymnasium).

In the 1960s and 1970s, after lively and tough political discussion, the Finnish Parliament decided that the current parallel type of education system was to be replaced by a common basic education (Niemi 2012, 21). Upper secondary education was renewed in the 1970s and 1980s. Six-to-eight years of comprehensive school and middle school disappeared and nine years of basic education was established in its place. Following this was three years of upper secondary education, which was divided into general education and vocational education. After that there was university-level education. The current system of education model was established.

The aim and objective was that all students finishing basic education could continue their studies either with upper secondary general education or vocational education. This policy increased the amount of students in vocational schools. Vocational education became a clear part of the educational system of Finland for the first time. Vocational education institutions offering education for different vocations were now concentrated under the Ministry of Education.

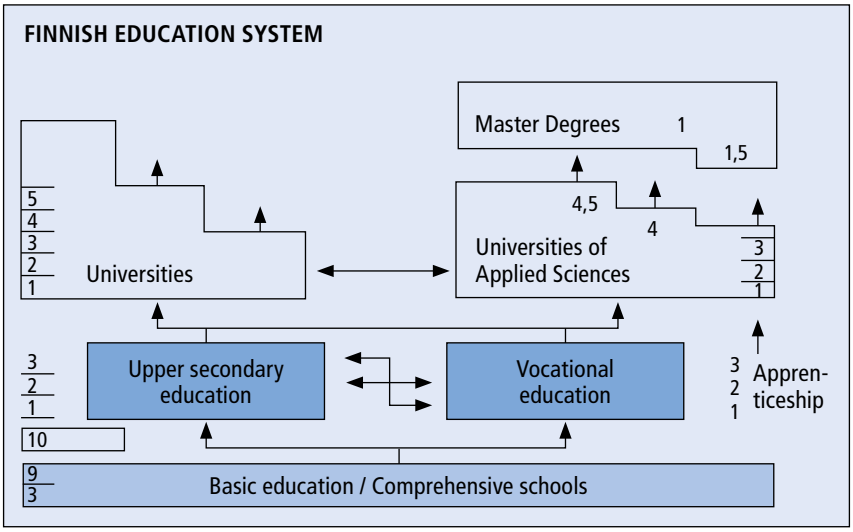

Figure 2. The education system in Finland.

The increasing popularity of vocational education and vocational education today

In the 1990s the curriculums in upper secondary vocational education were renewed and the education became three years across all sectors. A minimum of six months of on the job training was included in curriculums. This change increased the co-operation between schools and business life. Competence-based curriculums and skills demonstration systems, where representatives from business life, teachers and students assess learning outcomes together, has developed school-business life co-operation further.

The aim and objective of vocational school education is to educate good citizens, prepare students for business life and working life and give students the readiness to continue with their education.

The extent of the studies is 120 studying weeks, conducted over three years. The curriculum includes general subjects such as mother tongue, another language, mathematics, physics, civics, gymnastics, art and culture. These studies support the student's vocational studies. The fields of education are:

- Humanities and education
- Culture
- Social science, business and administration
- Natural sciences
- Technology, communication and transport
- Natural resources and the environment
- Social services, health and sport
- Tourism, catering and domestic services.

There are altogether 53 vocational upper secondary qualifications containing 119 study programmes (www.oph.fi/english/education).

Versatile learning environments and the possibility to continue studies at universities of applied sciences and good working possibilities have increased the popularity of vocational education among young students during the last 20 years. Especially among young students under 18 years of age the main vocational education line has been school-based education. The apprenticeship-type of education has mainly been for adult students. There are couple of historical reasons for this. Firstly, school-based education organised under central control was reliable. There were educated teachers who took care of teaching. Secondly, industry life and business life expect society to carry the main responsibility of the education of its young students.

The ideology of school-based vocational education was that at school students acquired basic skills and competences for working life; after couple of years at work he or she had also acquired professional skills.

One factor that has strengthened vocational education has been the establishment of universities of applied sciences in the 1990s. They offer the highest practical education in the country. The possibility for continuing studies became more systematic also for upper secondary vocational school students. About 25 percent of vocational school students continue their studies at universities of applied sciences (Stenström, Virolainen, Vuorinen-Lampinen, Valkonen 2012, 123).

About 50 percent of students continuing their studies after comprehensive school at upper secondary level choose vocational education, and 50 percent of upper secondary choose general education. Today the extent of all upper secondary vocational education is three years.

The increased popularity of vocational education together with the changing working life and competence requirements puts new demands on vocational education. New student-centred pedagogical methods (Manna, Rossi 2008, 68–69) and types of co-operation between business life and schools have been developed. In recent years the quality of education and learning has been focussed on the area of vocational education.

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Researching and developing vocational education and training – the challenges and role of vocational teacher education

Liisa Vanhanen-Nuutinen and Martti Majuri

Introduction

The purpose of this article is to provide an introduction to the challenges of developing vocational education and training, and the roles of schools of vocational teacher education in researching and developing vocational teaching and learning. The demands and challenges for developing vocational education and training (VET) rise from the changes in society, at work and in the working life. The trends of these changes can be divided into three categories: changes in competences needed at work, changes in work contexts and changes in ways of working. The changes in competences focus, on the one hand, on generic competencies, and on the other on specific professional competencies. The changes in the contexts of work are both global and local. The changes in ways of working take place both in working communities and with individuals and their needs, careers and goals (Vanhanen-Nuutinen et al 2012; see Alasoini 2010; Järviniemi 2011). VET as part of the education policy not only reacts to these changes, but is also a means of addressing the challenges that lie ahead (Cedefop 2009).

In its National Programme, Finland commits itself to ”raising young people’s level of education and reducing the proportion of early school-leavers” (Koulutus ja tutkimus 2011–2016). The development of Finnish VET is based on the basic philosophy of qualitatively equal education and training throughout the country. Improving guidance and counselling is an important part of the strategy to make VET more attractive (Kyrö 2006; Ehdotus valtioneuvoston strategiaksi koulutuksellisen tasa-arvon edistämiseksi 2012). VET should be an attractive option for young people and also for adults. Professional competences and skills delivered

through VET should be transparent at individual, company and State levels (Cedefop 2009).

According to the Development Plan Education and Research 2011–2016, ”a programme will be undertaken to expedite study times in vocational education and training, to reduce dropout and to support progress in studies and qualification in the target time”. Another goal is to develop measures to strengthen the competence-based definition of vocational qualifications and further and specialised vocational qualifications. The Development Plan states that, ”measures will be taken to effect closer links between universities of applied sciences (UAS) and regional development and working life”. This means that UAS will develop their research, developmental and innovation (RDI) activities and RDI is taken into account in the job descriptions of the teaching personnel. Also the innovation competencies of vocational teachers will be developed.

The Finnish educational system is of interest to the rest of the world due to its ongoing achievement of excellent PISA results. Additionally, Finland has been very successful in WorldSkills year after year. Therefore, Finnish VET, vocational special needs education and study guidance and counselling are also at the core of international interest. Vocational teachers' competencies and pedagogical approaches that foster co-operation between education and working life have a significant role in creating high quality vocational competencies.

In this article the challenges for RDI in schools of vocational teacher education (SVTE) are reviewed from two perspectives: the changes in pedagogical approaches and the changes in the work of vocational teachers. Following this the role of SVTE in RDI is described and the main challenges for further RDI activities are presented.

Vocational pedagogy in change – building bridges between school and work

With the rapid changes at work and with working life, co-operation between employers and working life is an essential part of VET. Education providers co-operate actively with the world of work in the development and provision of education. On-the-job learning is a compulsory part of all vocational qualifications. All students in VET obtain basic information about working life and entrepreneurship. On-the-job instructors have an important role in work-based learning, but there is no systematic training provision for them. The operative concepts to enhance the impact and

quality of adult VET are 'work-centred', 'demand-driven' and 'responsive'. Development services for employers are an essential part of it (Koulutus ja tutkimus 2011–2016).

In higher education institutions, work placement is included in degree requirements and students often write theses that serve working life needs. Contacts with working life are further intensified to keep the education content up-to-date and give students a clearer picture of possible work careers and better employment prospects (ejournal.quickersteps.net).

Innovative learning offers a possibility for open, holistic thinking and learning communities. Network-based working models, new working contexts and the use of new tools are the prerequisites for innovative learning. Learning innovation competencies can bring students, teachers and RDI staff together to work. The core is in learning, authentic learning environments and conducting authentic work-based innovation projects (see Kettunen's chapter in this book). An example of this kind of pedagogical solution is Living Lab (http://www.livinglabs.fi). Living Lab gathers together the users, developers, benefits and enablers. In practice learning takes place outside classrooms. Learning spaces are open and allow discussion and informal and quick get-togethers. The starting point of activities is in real working life needs. All partners benefit from Living Lab, not just the students (Heikkanen & Österberg 2012).

Local and regional challenges give an excellent possibility for co-operation between schools and industry. However, this demands that teachers have strong working life networks and the curriculum to be flexible enough that it is possible to grasp the signals and needs from working life. Creative, authentic and flexible learning environments support the creation of learning communities. Studying in groups, communities, face-to-face and via learning technology supports co-operative learning. For example, problem-based and inquiry-based learning enable the study of phenomena from different perspectives and are combined into real-life decision-making. Besides the answers, the process of innovating, sharing and making discussion becomes crucial (Vanhanen-Nuutinen et al 2012, see also Kettunen in this book).

Young people who are entering working life have different expectations towards work compared to older generations. Personalised studies, along with study and career counselling and their respective timing set requirements for the curriculum as well as to the teachers. A flexible, module-based curriculum and clearly stated tools to aid recognising competencies make it possible to set personal learning contracts. In order to get an idea of dialogic interaction, students should experience this kind of interaction already during studies, for example, via the teacher-student

relationship or during on-the-job learning (Vanhanen-Nuutinen et al 2012; Vesterinen & Suutarinen 2011).

On the other hand, co-operation between different levels of vocational education and higher education enables the development of quicker study paths. The processes and tools for recognising prior learning facilitate the transfer from one study degree to another. Renewing education is possible in continuous co-operation between stakeholders and students. Education needs to prepare students to face the challenges of current and future work (ejournal.quickersteps.net).

VET teachers in change

Traditionally, the expertise of vocational teachers has been defined as consisting of professional and pedagogical knowledge and competencies besides personal characteristics. These competencies are meaningful and valid also today, though the emphasis has changed over the decades. While at the beginning of the 1990s vocational teachers were hardworking and 'conscientious civil servants', in the 2020s they are expected to be dynamic, flexible and development-oriented networkers (Auvinen 2004; Paaso 2010). The following personal characteristics of teachers are emphasised: inner entrepreneurship, accountability and the ability to build co-operation and work in communities. According to Auvinen (2004), the core of teachers' work has moved from the independent expertise in one's own subject area, to continuous co-operation with working life. The core of teachers' work is multifold, which is seen in the differentiated tasks and contents of work. The methodological competencies have changed from teacher-led pedagogy to the supervision and support of learning. Especially in UAS, the focus is on learning processes as the basis of pedagogics, the support of students' professional growth and research and development (Auvinen 2004). In his study, Mäki (2012) describes UAS teachers according to the conceptualisation of their work. In the work culture of conflicting and non-coinciding interpretations, the competence requirements focused on the ability to work collaboratively. Those teachers who were substance and teaching-centred felt that they mostly needed mastering of the subject matter, which they viewed as the backbone of teaching.

Focussing on the integration of education, RDI and regional development presupposes an important change in the academic culture in UAS. Therefore, RDI skills and competence development should be prioritised and emphasised in staff training. Identifying and disseminating good practices, methods, tools and processes about RDI practices in the UAS

sector are of great importance for the benefit of the further development of UAS sector staff in the RDI area (Maassen et al 2011).

The biggest challenge for vocational teachers' work orientation and working methods both in vocational schools and UAS is to learn to work as 'brokers', who convey between changes at work and education. These brokers have a central role in promoting, conducting and conveying RDI. They recognise the needs of working life and the possibilities of vocational and higher education and pedagogical approaches. The brokers create new working cultures via crossing boundaries and exploring the future. Their task is to create networks and combine actors regardless of their field or type of organisation. They recognise and open up the barriers of knowledge use and enable learning. The brokers can be teachers, but they can also be industry representatives (Vanhanen-Nuutinen et al 2012; see also Uotila & Ahlqvist 2008; Burt 2004).

The role of schools of vocational teacher education in RDI of VET

The changes in pedagogical approaches and vocational teachers' work are the core of RDI at schools of vocational teacher education. Schools of vocational teacher education have a special role in the Finnish educational system. SVTE offer education for vocational teachers, special needs teachers and study counsellors. The SVTE curriculum is based on a research and developmental approach, which enables the students to develop themselves as teachers and, on the other hand, to develop the pedagogics at their schools. The overall aim of SVTE is to develop vocational education practices and staff competencies. Therefore, besides teacher education, significant activities at SVTE also include RDI work and further education.

The aim of RDI at SVTE is to develop new pedagogical working models, solutions and tools for learning and teaching in vocational education, universities of applied sciences and working life. The RDI at schools of vocational teacher education is mainly categorised as applied research, or Mode 2-type of research (Amk-tutka 2010; Gibbons et al. 1994). The methodological approach can be defined, for example, as action research or design-based research. It is based on theoretical knowledge, work experience and the knowledge and experience gained via developmental activities. The process of RDI can be described via the phases of networking and anticipating the needs of VET, planning RDI projects and applying

financing, implementing research and developmental processes, presenting outcomes and disseminating and delivering the products. The co-operation between the teacher education programme and further education is central to each phase of the process. RDI is implemented in co-operation with local vocational schools, universities of applied sciences and the industry. The processes of research and development are well defined, along with the methods of participation used (Figure 1).

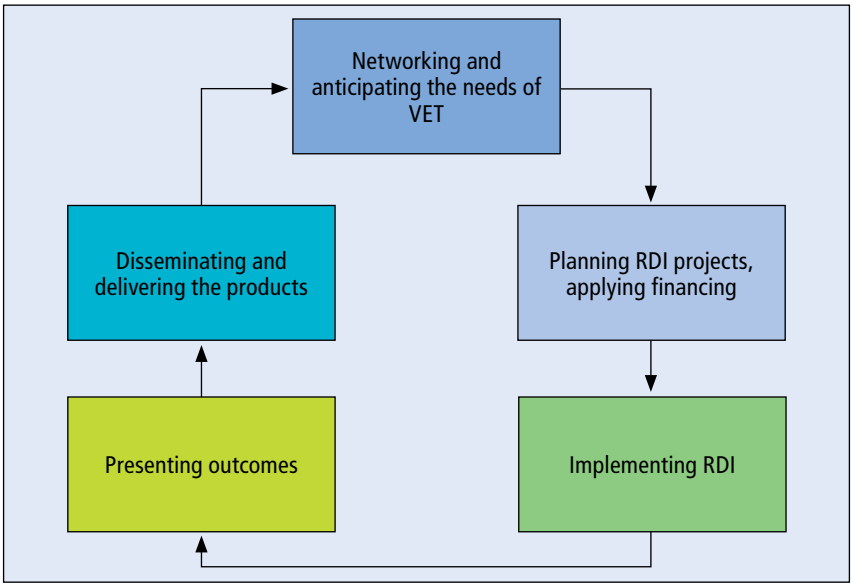

Figure 1. Process of RDI.

The subject areas of RDI in SVTE in Finland are school-work co-operation, on-the-job-learning, teaching and supervision of learning in various learning environments. Other areas include e-learning, perspectives of adult education, guidance and counselling, entrepreneurship, competence assessment and multicultural education. Furthermore, internationalisation, students with special needs and challenges of lifelong learning make RDI very multidimensional. Vocational teachers, special needs teachers and study counsellors have a central role in solving issues (www.hamk.fi; www.jamk.fi; www.haaga-helia.fi; ww.tamk.fi; www.oamk.fi).

The main target groups of RDI in VET schools are vocational schools and UAS with their regional networks. Furthermore, the VTE schools actively participate in the developmental projects run by vocational schools. These projects focus on various topics and especially on themes related to co-operation between schools and working life.

The projects conducted with partner schools create data, assessments and analyses, which can be further used in developing vocational education. RDI at VTE schools can also be seen as a way of developing the teacher educators' competencies, deepening their knowledge in authentic working life environments. This provides knowledge and understanding for the high quality education of future teachers.

There are several examples of successful RDI projects that have been accomplished by Finnish SVTE. Though the schools share a majority of the RDI topics, they do have own expertise and profiles at RDI. Currently HAAGA-HELIA SVTE is managing the national Osataan-project, which focuses on developing the methods of assessing competencies at work and in UAS-working life co-operation. The project is funded by the European Social Fund and is implemented in co-operation with JAMK SVTE (www.osataan.net). Also, HAMK SVTE is developing competency-based education in UAS via the project Developing a Competency-Based Curriculum for Finnish Higher Education. The purpose of this project is to strengthen the competency-based approach of the Finnish higher education curricula and to contribute to the working life relevance into the practical curriculum and degree design (http://ospe.utu.fi/english.php). Vocational education is the focus, for example, of the Nordplus-funded project LeWiCo, which studies the approaches and practices in learning with companies in vocational education. The partners of HAAGA-HELIA SVTE in this project are schools of vocational teacher education, vocational schools and companies from Norway and Estonia. HAMK SVTE develops flexible study paths for gifted students in vocational education together with vocational, working life and UAS partners in the Excellence in Skills project (https://wiki.hamk.fi/display/huiput/HUIPUT+KEHIIN).

The five Finnish SVTE have a tradition of joint RDI projects. Currently the SVTE are running a project, which aims to define the competencies of modern and future vocational teacher education. Vocational teacher educator's work and competencies have not previously been studied to this extent.

Conclusion

In summary, SVTE posses an excellent starting point to plan and conduct high quality RDI activities. The level of degree qualifications of staff is high; most of the teacher educators have a doctoral degree. Aside from this they need to have work experience as vocational teachers and in working life before entering the career of vocational teacher educators.

One strength of SVTE is the close co-operation between VET schools, UAS and other professional networks. The applied and practice-based approach to RDI combined with these networks provides a high level of developmental potential.

However, the RDI role of UAS has not yet been established and this reflects also to the RDI in SVTE. The SVTE need to collaborate with each other, within UAS and with the academic universities. This would help them to plan and conduct larger research projects and to build research consortia. The RDI financers are still more familiar with the academic research, though positive development towards recognising and financing also developmental and applied research has taken place. For example, EU and Tekes have been financing UAS RDI more than before. EU structural funds are a very important instrument in the competitive funding of RDI activities at Finnish UAS and also at SVTE. This funding especially serves the demands of regional innovation systems (Maassen et al 2011).

Though the SVTE have shown success in international activities, there are still challenges in international RDI. Despite a strong strategic focus on the enhancement of internationalisation at the national level, an effective support structure for stimulating the internationalisation of the RDI activities of UAS, and consequently of SVTE, is lacking.

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Teacher education in the area of vocational education and training – the Finnish perspective

Jari Laukia

In 2010 there were approximately 14 500 teachers and principals working in vocational schools and adult education institutions in Finland, and about 6 000 teachers in universities of applied sciences (Kumpulainen 2011, 68–69). All of these positions require teacher education qualifications.

Teacher education has been a part of the teaching profession since the instigation of school education in Finland. In 1863 began classroom teacher education (Niemi 2012, 20-21), and upper secondary school (high school) subject teachers were required to have studied at university and to have completed practical training.

The situation has been different in the area of vocational education. As education has developed differently and autonomously in each vocational education sector, this has duly affected teacher education. Soon after the initial school-based institutions and schools commenced offering education for practical professions, a discussion emerged concerning how vocational school teachers should be educated, what their qualification requirements should be and how to develop the quality of education.

In this article I focus on the development of teacher education in the vocational education sector. Vocational education here means predominantly vocational schools offering education for working positions in the sectors of industry, craftsmanship and home economics. However, I also examine teacher education in other vocational education sectors when a broader impression of teacher education is needed.

Voluntary courses

The first vocational school was founded in 1899 in Helsinki, which resulted in the origins of a new profession, namely teachers working at vocational schools. What kind of skills and competences did these teachers need back

then? The curriculum in vocational schools was divided into three groups: vocational theoretical studies, general subjects and vocational practical studies. Engineers and architects taught vocational theoretical subjects, whereas teachers who had an academic university degree or comprehensive school teacher education took care of teaching general subjects like Finnish language and civics. Workshop masters or craftsmen were responsible for workshop education and the education of practical skills. General subject teachers usually had undergone teacher education. Architects and engineers had completed technical degree studies, but typically had not acquired teacher education qualifications. Meanwhile, workshop masters or craftsmen were experienced craftsmen and professional workers who also did not necessarily have any theoretical education.

The quality of education delivered was not necessarily very high, and pedagogical habits were teacher-centred. Students had a passive role in the learning process, which was not a motivating factor for them, even though the role of the teacher stipulates that they should be able to motivate their students and use methods to increase better learning outcomes (Laukia 2008, 27–32).[1]

Thus, Jalmari Kekkonen, the Inspector of Vocational Education in the Ministry of Trade and Commerce, visited Germany in order to explore the vocational education system in place there. Upon his return to Finland he stressed in his memorandum the importance of introducing pedagogical courses for teachers (Kekkonen 1908). Furthermore, in 1913 he began to organise voluntary pedagogical courses for people conducting teaching duties in vocational schools. These courses included, among other things, lectures on how to treat a student, how to develop as a teacher, practical training periods and excursions to industrial companies (Ammattienedistämislaitoksen kurssi ammattikoulujen metallityön opettajille ja siksi aikoville 4.-10.6.1928, TKA). The Ministry of Trade and Commerce would go on to organise these voluntary courses for vocational school teachers, especially those teaching vocational subjects, until the end of the 1950s.

Seeking to increase the quality of education, the need for permanent compulsory education of vocational school teachers was also discussed. However, due to the small number of teachers working in vocational schools, a special institution was not established across the board. In the school year 1925–1926 there were about 120 persons in teaching positions in vocational schools (KM 8 and 8a: 1928 Ammattikoulukomitea). However, in a number of vocational education sectors the requirement

[1] Kekkonen, Matkakertomus, 237, Suomen Teollisuushallituksen tiedonantoja, vihko 45, 1908; Rousi 1986, 117; Järvinen 1997, 62.

of teacher education qualifications was introduced on a permanent basis almost immediately: teacher education in the business sector began in 1905, with nursing teacher education and the education of forestry teachers commencing in 1931 (Laukia, 2008, 28–29, 32–33, 36).

Between the 1920s and 1950s the discussion concerning the quality of education focused on three aspects of each teacher: their personality, practical skills and pedagogical knowledge and skills. Voluntary courses continued to be offered for teachers, including psychology, pedagogy and industrial knowledge.

In the 1940s and 1950s, Aarno Niini, the Director of the Vocational Education Department of the Ministry of Trade and Commerce, sought to increase the quality of education and encourage wider recognition of vocational schools. He hoped to make vocational education an equal educational alternative for young students, standing side by side with upper secondary general education. One method of achieving this was to develop and increase the standard of teacher education (Niini 1947). Niini also asked schools to organise teaching demonstrations where all teachers should be present. Together, teachers and principals were to discuss pedagogical matters and develop teaching methods. These teaching demonstrations were organised in schools up until the 1970s. When vocational education increased in the 1950s and 1960s, so too did the amount of teachers. Voluntary courses could not continue satisfying the needs of teachers and the quality of education required, thus it was time to develop permanent teacher education for vocational school teachers.

The commencement of systematic teacher education for vocational school teachers

1947 saw the Ministry of Trade and Commerce prepare a 10-year development plan for vocational education (Ammattikasvatuksen kehittämisen 10-vuotissuunnitelma, AKN 1.2.1947). This plan included, among other things, the idea of developing vocational school teacher education. Of the two alternative scenarios that were proposed for organising education, the first sought to develop particular subject teacher degree programmes for budding vocational teachers. This model was close to the manner in which subject teachers were educated for high school, and included both substance and pedagogical studies, and would take three to four years to achieve a teacher qualification. The second alternative was to prepare systematic and compulsory pedagogical education for persons who already

had practical education and work experience (Ammattikasvatusneuvoston kokouksen päiväämätön muistio, kesäkuu 15 kontekstista päätellen 1940 luvun lopulla tai 1950 luvun alussa, Kansio1. v1945–65. AKH arkisto, OPH arkisto). The Ministry of Industry and Trade eventually decided to move forward with the latter alternative.

The Government of Finland appointed a committee to prepare a proposal of how to organise vocational teacher education. This committee suggested that there should be a special vocational teacher education college in which to educate vocational teachers. However, according the committee, vocational teacher education should avoid the mistakes made during the education of subject teachers for comprehensive schools and upper secondary general education. Previously, teacher students studied their pedagogical studies at university but completed their practical training periods at a particular school. Pedagogical education and practical training were studied separately and they did not necessarily support one another (KM 1950: 32, 9). According to the committee, vocational teacher education should include psychology, pedagogy, history of vocational education, Finnish language, vocational ethics and practical training in teaching. One key challenge for teacher studies was, once again, how to motivate students. The Parliament decided to establish two institutions for vocational teacher education, one in Hämeenlinna and the other in Jyväskylä. While Hämeenlinna Institute focussed on educating teachers for technical fields, Jyväskylä Institute centred on those for the textile and home economics sectors. Hämeenlinna Teacher Education Institute was established in 1958 and Jyväskylä Institute in 1962. Elsewhere, Helsinki Business College had already started to educate teachers for the business sector in 1950. Concurrent with the establishment of the two new teacher education colleges, teacher education now became compulsory for vocational school teachers[2]. Thus, teacher students were required to have post-comprehensive school vocational education and work experience. In those vocational education sectors where there was no suitable vocational education available for teacher candidates, teacher education also included vocational substance studies. This change also resulted in those educating vocational practical skills to officially be called teachers. Previously they were referred to as a trainer, instructor or a similar title.

Teacher education thus increased the quality of vocational education. However, teacher education for different vocational education sectors was only offered across a number of small units. Co-operation between these units did not exist and curriculums varied from one sector to the other.

[2] Teacher education still remained voluntary for example in engineer education at technical college.

Teacher education in conjunction with the universities of applied sciences

The 1970s and 1980s were decades of great change for the Finnish education system. New comprehensive schools were established and all children were required to complete nine years of compulsory basic education. In this context comprehensive school teacher education moved to scientific universities in 1971 and old comprehensive school teacher training colleges disappeared. Since 1979, the teacher education programme has been at master-level in universities (Niemi 2012, 29–30).

In the 1980s there was a revision of the methods of post comprehensive education, upper secondary general education and vocational education. During this process vocational teacher education was also re-evaluated and adjusted accordingly. In 1986 new curriculums for vocational teacher education were put into use. The extent of the education was now 40 studying weeks (one academic year). This change was also significant in that it was decided that all teachers working at vocational schools or institutions in different sectors should possess compulsory teacher pedagogical qualifications. Teacher education had thus become an official requirement of all teachers of vocational studies (Miettinen 1993, 47–48). However in the beginning of the 1990s there were still 19 different units offering vocational teacher education (Helakorpi 1995, 198). During this decade the most significant progress made in education was the development of the university of applied science system. As decisions needed to be made concerning the kind of institutions where vocational teacher education would be conducted in future, the Parliament of Finland decided to establish five schools of vocational teacher education, which worked in conjunction with the universities of applied sciences. These schools of vocational teacher education were instructed to provide pedagogical education for teachers working in vocational schools and also teachers working in universities of applied sciences. Currently these schools are located at HAAGA-HELIA University of Applied Sciences, HAMK University of Applied Sciences, Tampere University of Applied Sciences, Jyväskylä University of Applied Sciences and Oulu University of Applied Sciences.

The model of vocational teacher education that was decided on in the 1950s has continued to the present day. Each teacher student must have a university degree (minimum BA level) and a minimum of three to five years of work experience in the field that he or she has studied. After completing the pedagogical studies they have then fulfilled the requirements of their teacher qualification.

Content of pedagogical education

In the 1950s Aarno Niini and professor Oiva Kyöstiö supported teachers and school principals to develop pedagogical methods together. Teachers commenced delivered teaching demonstrations on occasion, which other teachers then discussed and gave feedback about. In spite of these activities the common tradition in teachers' work in the 1960s and 1970s was that teachers worked alone with students, and did not co-operate with teachers of business courses. However, the area covered by vocational education was so diverse that there was no single clear pedagogical method, such as what was found in comprehensive education. Learning environments were versatile, including traditional classrooms, workshops and practical training. There was no one collective pedagogical method or habit in vocational education.

In the 1970s teacher education included pedagogy, planning of teaching, teaching practice, oratory, writing and exercises (Opettajakurssin opetussuunnitelma 1970–1971, HAMK). One authority in the area of pedagogy was American Robert Mager and his theory concerning the taxonomy of targets. While this was suitable for classroom education, it was not necessarily so for disciplines such as workshop education, where students learned specific working skills and processes. Later, between the 1970s and 1980s, the influence of Finnish pedagogy Yrjö Engeström increased. Teacher education concentrated on more student-centred methods, as education should be more connected to business life and education should also develop working life (Engeström 1970, 224–259). The basis of vocational teacher education qualification now encompassed degree programme and work experience that combined academic and vocational tradition and pedagogical education (Helakorpi 1995, 173).

In the 1990s the extent of pedagogical education was 40 studying weeks, which included general pedagogical studies, vocational pedagogical studies, practical training periods and optional studies. In 2005, according to European Union suggestions, higher education incorporated the European credit transfer system (ects). The extent of teacher education became 60 ects points. Also the curriculum changed from a subject-based curriculum to one that was competence-based.

Today, vocational teachers have to be specialists in their own field. They must have completed relevant degree programme studies, normally a university degree, and a minimum of three years of suitable work experience. In pedagogical studies, students concentrate on achieving competency in teaching and guidance, networking and research and development (http://www.haaga-helia.fi/en/school-of-vocational-teacher-education/vocational-

teachers-programme/liitteet-eng/2012-2013_HH_AOKK_curriculum.pdf). The teacher education programme is the same for all teachers from different vocational sectors. During their studies teacher students also learn from one another. The reasoning behind each student's acquisition of the resultant competencies is preparing for the working demands of the modern teacher. The teacher uses student-centred methods and versatile learning environments, co-operating with other teachers and business life to develop and access his or her own work and the learning outcomes of a student. The teacher education programme is a developmental programme for a student but it is also a social process where teacher students develop their skills for co-operation with other teachers, other specialists such as student counsellors and special needs teachers and business life.

Conclusions

Voluntary pedagogical courses for vocational school teachers started in 1913. These courses were organised by Ministry of Trade and Commerce until the end of 1950s. However, the standard of this education was questionable, with the motivation of students and the quality of learning outcomes frequently brought into question. It took several decades until teacher education received a permanent, clearly organised position, as there was lack of financial recourses and the number of teachers was not substantial. In the beginning of the 1960s the amount of vocational education on offer increased dramatically, bringing about the establishment of special institutions for teacher education. There was a need for the teacher education model, which was fast and economical, but effective. Pedagogical education was offered for those who already had completed their vocational degree studies and only required work experience. This model still exists in Finland today. Furthermore, general subject teachers had to have a master's degree.

Since 1986 teacher education has been compulsory for all teachers across all vocational education sectors. In the 1990s vocational teacher education was concentrated into five schools of vocational teacher education in conjunction with the universities of applied sciences. Today vocational teacher education is answering the challenges that Finnish society places on vocational education. Vocational education should educate skilled workers and entrepreneurs, develop business life, educate good citizens and offer each student the possibilities for continuing with their studies. During vocational teacher education theories of learning are put into practice. Teacher education integrates different traditions of

science, along with encouraging the versatility of teacher student groups that concentrate on bringing together different types of students and developing new pedagogical methods.

During the last couple of decades the appreciation for vocational education has increased, along with that of the vocational teachers' status. We can see this also when we observe the amount of applicants for teacher education in recent years: there have been four times more applicants for teacher education than there have been available student places.

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Appendix 1. Important Milestones in the History of Teacher Education in Finland.

1862	Comprehensive teacher education begins.
1905	Practical training for business teachers commences.
1913	Voluntary pedagogical courses for vocational school teachers introduced.
1930	Practical training for agriculture teachers offered.
1931	Nurse teacher education, forestry teacher education begins.
1950	Education for business schoolteachers introduced in Helsinki.
1958	Hämeenlinna Vocational Teacher Education Institute opens.
1962	Jyväskylä Vocational Teacher Education Institute opens.
1973	Comprehensive schoolteacher education initiated in conjunction with universities.
1986	Compulsory pedagogical education for all teachers working in vocational schools and institutions introduced.
1996-1997	Five schools of vocational teacher education are established, in conjunction with universities of applied sciences.
2005	Higher education changed to the European credit transfer system and teacher education programme is 60 ects.

Schools in transition providing vocational education

Models of school-work co-operation: from co-operation to partnership

Sirpa Laitinen-Väänänen and Liisa Vanhanen-Nuutinen

Abstract

Improving the collaboration between universities of applied sciences and regional companies has been a development focus in Finland for a number of years. This is due to the expanding role of universities of applied sciences in regional development. Traditionally, teachers, students and employees are considered to be agents in this collaboration. However, in order to develop and deepen co-operation to reach the level of long-term partnership, new organisational activities are needed. This article deals with the issue of how co-operation grows into partnership between schools and workplaces and how the roles of the key-actors change by applying a 'Three Steps to Partnership' Model.

Keywords: Co-operation, partnership, universities of applied sciences, the working world

Introduction

Co-operation between universities of applied sciences (UAS) and regional working life is crucial when seeking to educate skilful practitioners and experts who will be employed smoothly after graduation. This has also been stated by employers. According to surveys of small and medium-sized enterprises in Finland, reforms that include making the network of UAS more effective, bringing curricula closer to practice and problem-solving, reforming learning environments and working methods, linking internships and learning more closely together, along with increasing partnerships with enterprises were strongly supported (Uudistavaa otetta insinöörikoulutukseen 2010; see also Ahmaniemi et al 2013). Thus, this co-operation is typically initiated by the higher education institutions and follows the goals and methods set by them. In order to facilitate and diversify co-operation, the acting partners should create and build

up a ”learning region” (Florida 1995), in which individual and collective expertise, along with aspects emphasising communality, are joined together (Tynjälä 2008).

Co-operation can take place at diverse levels: organisational, professional field, teacher and student levels. The study programmes' co-operation can be implemented in the curriculum, study modules and at course-level (Kallioinen 2008). Griffiths and Guile (2003) described four models or practices for co-operation between higher education institutions and enterprises, when aiming to achieve and accomplish mutual learning, co-operation and partnership. The first one is the practice of thinking. This is possible when shared discussions and even debates occur. The second practice is dialogic inquiry, where a less experienced person can work with an expert and study and discuss the work they are involved in completing. The third practice is boundary crossing, which is defined as an activity whereby workplaces and educational institutions are challenged to cross concrete boundaries between organisations or unwritten boundaries between ways of acting. The fourth practice is resituating knowledge and skills, which means reviewing current activities from a totally new perspective and discussing new ways of acting. In practice this requires planning the means of co-operation and alternative ways of acting both at the workplace and in education.

When co-operation continues and develops in a more advanced direction, trust between partners increases and mutual aims can be defined, and the co-operation can then be labelled a partnership. A partnership aims to offer new solutions to new problems, which no organisation can overcome alone (Häggman-Laitila & Rekola 2011). Characteristics of partnerships are continuity, mutuality, boundary-crossing and the development of activities (Toiviainen et al. 2004). Ståhle and Laento (2000) divide partnerships into three categories: operational, tactic and strategic. Operational partnership is suitably described by ad-hoc actions. Here, actions take place only when needed and no long-term plan for co-operation has been made. The tactic partnership shows development in co-operation but still no mutual aims are settled upon. In a strategic partnership the common goals are shared and they have been negotiated in advance. Partnership is a long-term coalition between the partners where mutual respect and understanding is actualised. Important strategic challenges are controlled via a partnership (Engeström 2006). Trust embodies co-operation and actions. The aim in strategic partnership is to create a win-win situation between its participants. Through strategic partnership schools and enterprises can easily develop mutual development processes and plan co-operation in the long term. Compared with

the other two approaches a strategic partnership typically is a co-operation of greater depth that sees both parties working closer together for longer periods of duration (Kuoppala & Laasonen 2009).

Teachers have been recognised for playing an important role in the process of developing these partnerships. According to the study by Vanhanen-Nuutinen et al (2009), which focused on teachers' role in working life co-operation, teachers described their role in co-operation as transferor, negotiator, facilitator, constructer, co-ordinator, documentarist, developer and as a dealer. These concepts reflect diverse forms of co-operation. The teacher's role is important, especially when the co-operation is at its formative stage, and also as they act as a contact person to working life. The teacher offers a broad spectrum of information about the university that is not confined merely to the learning process (Marttila et al 2004). However, breaking the traditional roles and crossing the borders of organisations is not an easy task for teachers. It requires abilities and courage to meet and acknowledge challenges for new work orientation and tools (Lumme 2008; Vanhanen-Nuutinen et al 2009). Teachers have encountered contradictory role-expectations: on the one hand they are expected to supervise students, and on the other they should act as a developer of work. Teachers can also experience being outsiders themselves at workplaces.

Co-operation challenges teachers' skills to organise learning processes and create learning environments that offer possibilities for three-way co-operation between teachers, students and employees, which pursue the development of working practices. The approach of project-based learning (Vesterinen 2001), as well as learning based on developmental processes such as Learning by Developing (Kallioinen 2008) or enquiry based learning (Hakkarainen et al 2001) has been developed and tested. The most successful have been the solutions that manage to cross the boundaries of education and work and thus create new forms of co-operation and partnership (Kotila & Peisa 2008; Toivola 2010).

This article will focus on discussing the models of school-work co-operation in vocational or professional education. We will apply a three-step model (Laitinen-Väänänen et al 2011a) as a structure for presenting the emergence of co-operation between school and enterprises. The dimensions of each of the steps are described in terms of goals, initiator and activities, along with the roles of actors, students, teachers and companies/working life.

Three steps towards partnership between education and working life

In our research and development project (Laitinen-Väänänen et al 2011b), 22 teachers and administratives from professional higher education participated in the coaching programme, which sought to develop their skills and knowledge to build partnerships with regional working life. The researchers conducted participating observation by attending the coaching programme, making filed notes, reading learning assignments and sharing observations together during the programme (Potinkara et al 2011). Finally, observations and notes were mutually discussed and a model depicting three different steps towards partnership was developed. In this article we present this model and discuss its meaning for vocational teachers and learning (Figure 1).

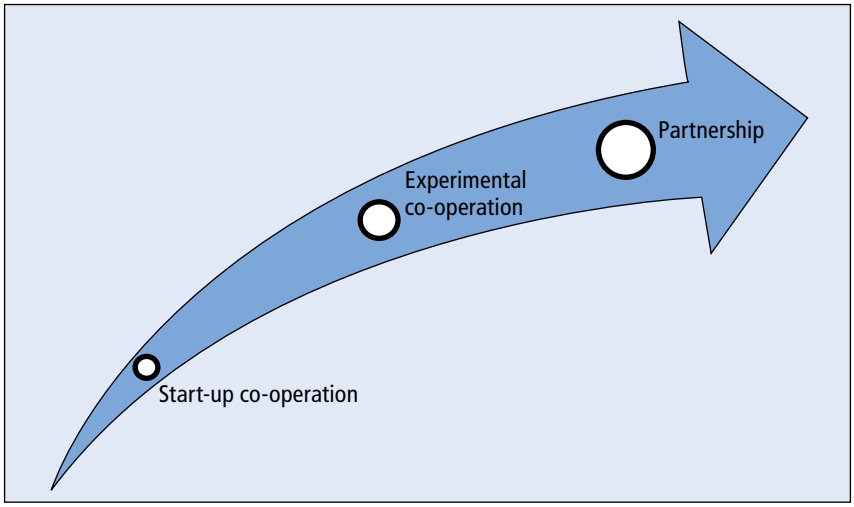

Figure 1. Three steps towards partnership between education and working life.

Start-up co-operation

The first step was named Start-up co-operation. The goal of this step was to offer students a practical learning environment and combine the study module with practical work experience. Therefore, the reason for the co-operation is based on the learning needs of students. The co-operation was initiated by the teacher, who also constructed its content after asking the needs of the employees or employers of the companies. In this step, the focus was more on the students' learning than on developing working life.

During this co-operation the teacher acted as a negotiator between the school and the company. Thus, both teaching and the teacher's role were seen in a more traditional way, even though the teachers' goodwill in co-operating with working life was identified. The students' role was to implement actions such as a wellbeing day for a company, or organising an open fair. The company benefitted from the students' work, but it was not in the focus.

The knowledge creation was constructed among students or in discussions between students and a teacher. The company's role was to participate in the evaluation phase at the end of the co-operation. Therefore, the companies were more like servers of the learning environment for students.

No continuity was found in the Start-up co-operation. Co-operation was occasional and was driven by the school's need and timetable. No contract was signed between the organisations. Furthermore, we did not identify any attempts to construct shared understanding or shared knowledge between education and working life, as teachers transferred the knowledge between the organisations.

Experimental co-operation

The second step was named Experimental co-operation. The goal of this step from the school's perspective was to combine students' learning processes into the working life's needs. The goal shifted more towards community learning and mutual development between schools and companies, compared with the previous step. The co-operation seemed to be focused on doing and working *together*. And the emphasis was on producing rather than solely on implementing practical actions together.

The need was initiated either by an employee, employer or by a teacher after connecting with the company. Sometimes the co-operation was a result of a joint meeting between a teacher and a working life representative, where the co-operation was mutually discussed and negotiated.

Students were not only learners but also co-workers with working life representatives. Knowledge was increased both among students and working life. However, it was not yet developed and discussed together, while shared-working practice was not yet developed. The teacher transferred the knowledge between the organisations. The company benefitted by receiving new information, knowledge, products or redesigned services.

Thus, a mutual language was starting to be developed between schools and working life. Mutual language is important when constructing co-operation with organisations. The construction of a mutual language calls

for mutual conversations, discussions and actions, shifting from the ”small talk phase” to the practices where a mutual target and goal are settled. If a mutual development object is not agreed upon, real co-operation will not be constructed and, furthermore, circumstances for mutual language development are vague. Diverse, concrete and social arenas and forums for meetings offer an excellent basis for constructing joint development objects (Juntunen 2010).

The co-operation was still more occasional than systematic, even though a contract was sometimes signed between organisations. There was a vague will towards mutual and shared understanding in this step of co-operation. In this step, due to the growing body of co-operation, mistakes and failures occur, but errors should be accepted. They are useful learning experiences.

Partnership co-operation

The third step was named Partnership. A partnership type of co-operation is goal-oriented. The activities of the partnership focus on finding mutual interests at a strategic level. Tools, such as joint committees and strategic tenures (Häggman-Laitila & Rekola 2011) are taken into use. In the Partnership step, the aim was to deepen the joint co-operation between education and work, and to support or start to support regional development together. Thus, the school builds its role in regional development and systems of innovation. The mutual glance is towards the future. The co-operation is centred towards working life's initiations. This three-angle partnership between student, teacher and company enables the co-creation of knowledge, as well as critical analysis and systemic development together. All the partners were learners and also beneficiaries.

Students were involved in Partnership co-operation in many phases and via various activities. They had an equal role with teachers and working life partners. They could take part in the processes at workplaces as part of their internship or project-training and solve authentic problems related to strategic development within the workplaces with their various learning assignments. They evaluated the process and the outcomes as part of their thesis. The students acted as developer of the work, not only as learner from, or for, work.

The communities such as workplaces, associations, companies and teams at companies become learners. They produce ideas, negotiating and acting to carry out joint activities with schools. This expands teachers' work towards networks and the core of teaching moves towards work-

ing life. Teachers focus on *communities as learners* instead of individual learning. They act as networkers, developers or researchers. This asks for teachers to change their work orientation from school-centeredness towards work-based orientation. The teachers' focus was on regional and local development. They are working with communities of learners instead of individuals. This requires teachers to understand both regional and local working life, along with the changing needs of work and competence development.

Continuity is taken into consideration and partnership is typically a long-term, strategic alliance between the partners. This asks for contracts to be drawn up between participants. One advantage in this type of co-operation is that the partners get to know one another and their working cultures better as well as each other's potential opportunities. Trust and mutual familiarity as such promote activities in assessment, development and experiments. A real 'win-win-win' situation occurs between teacher-student-company.

Discussion

Developing partnerships is a slow process. According to Häggman-Laitila and Rekola (2011) there are factors such as joint development targets and benefits, common language and understanding, agreements of co-operation, parallel actions and participatory change management and resources, which result in successful partnerships. Meanwhile, differences in organisational cultures, unsuitable timing, lack of resources, attitudes and different expectations, as well as lack of understanding prevent the formation of partnerships.

The role of the teacher during the process is especially important at the starting phase of co-operation. Teachers are seen as contacts between schools and working life. They transfer knowledge about all the services and possibilities offered by the schools (Marttila et al 2004). The change in teachers' work can be described as a turnaround from school-centred teaching towards regional networks, and from being the co-ordinator of working life contacts towards being a tuner, builder and partner of regional development (e.g. Auvinen 2004).

The study among the alumni of universities of applied sciences (Laitinen-Väänänen et al 2011c; Vanhanen-Nuutinen & Laitinen-Väänänen 2011) shows that co-operation between workplaces and universities of applied sciences is mainly based on study processes such as practical work placements and thesis. In most cases the co-operation has been recognised

as being beneficial to the workplaces. At its best the co-operation can advance into partnership, which develops both the higher education institutions and regional companies. An interesting finding in this study was that research and development work as a means of co-operation was seldom mentioned, despite the current higher education policy. In addition, this study indicated that there are strong grounds for building up a "learning region", while more than half of the alumni stated that gaining new knowledge and competences for the region are the most important benefits from these co-operations.

Furthermore, the survey among members of the Finnish Federation of Entrepreneurs (STTK) reveals that the bigger the company is, the more positive the attitudes the respondents had concerning UAS (Ahmaniemi et al 2013). Furthermore, the respondents from companies with more than 50 employees assessed that each university of applied sciences inform about their services and competencies, and that each have a positive impact on regional competitiveness and employment. In addition, UAS strengthen entrepreneurship regionally. The bigger companies also had more experience and a larger variety of ways of co-operating with the learning institutions. They also assessed the usefulness of co-operation more positively than smaller companies.

Moran et al (2010) emphasise the defining common goals between companies and higher education in order to achieve regional development. Regional strategies are moving towards this direction but also more concrete goals and tools are needed. These can be created only when people meet and build personal relationships. These are the first steps towards deeper co-operation and partnerships. Although partnerships have been successfully developed between working life and higher education, they need to be maintained and nourished.

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Bridging the gap between learning inside and outside of higher education institutions

Juha Kettunen

Abstract

This study presents typologies of learning to bridge the gap between learning inside and outside of higher education institutions. The different types of learning and knowledge can be found in different contexts of higher education to promote the learning outcomes. The study also presents the approach of innovation pedagogy and an example of how it has been applied to form a customer-oriented and interdisciplinary structure of the faculty. The results of this study will be useful to those who want to improve the quality of education and promote innovation.

Keywords: higher education, pedagogy, learning, knowledge, university, innovation

Introduction

The replication of cumulative and simple assimilative learning processes dominates a large proportion of higher education. Lectures, literature and memorisation are widely used methods of learning. In assimilative learning, students are given exercises in which a new element is linked as an addition to an existing scheme. A great challenge is to determine how students can acquire knowledge and skills that they can apply in the workplace to increase the external impacts of the educational institutions.

Learning includes two integrated, but very different, processes. Learning can result from the process of external interactions between the learner and his or her social, cultural or material environment, or from an internal psychological process of acquisition and elaboration in which new impulses are connected with the results of prior learning (Illeris, 2009a). Learning is constructivist in nature in that the learner actively builds up

or construes his or her learning as mental structures, but the term of the socio-cultural theory of learning also is used quite commonly (Peck et al., 2009). Both of the processes mentioned above must be involved actively if any learning is to occur.

The purpose of this study is to present typologies to bridge the gap between learning inside and outside of higher education institutions and to identify ways to promote innovations in the workplace. Innovations are created in value chains or networks that combine business, technology and other subjects required in the workplace. Empirical evidence of this has been presented by the Turku University of Applied Sciences, which does not have any field-specific faculty, such as business or technology, but it has created a faculty with interdisciplinary capabilities and experience and used the concept of innovation pedagogy to support this innovative approach (Kettunen, 2010).

This study extends the ideas and types of learning presented by Illeris (2009a,b), Merriam (2004) and Mezirow (2004). It also extends to the types of knowledge presented by Eraut (1994) to include the context of education from a wider perspective. The integration of education with other academic activities is essential to reproduce or deepen a specific ability and create 'learning that lasts', which is different from the context of higher education (Mentkowski, 2000). Tynjälä (2010) presented pedagogical outlines for the development of expertise and a model of integrative pedagogy that combines different theoretical elements to form a coherent model.

Each higher education institution has a profile that differentiates it from other institutions. The Finnish Ministry of Education and Culture has asked every higher education institution to define its profile, so there is a need for a comprehensive, up-to-date understanding of the concept of learning that is consistent with the profile of the institution. Turku University of Applied Sciences defined innovation pedagogy as its profile (Kettunen, 2011). According to its profile, the aim of the institution is to promote innovations in the region.

This study is organised as follows:

Section 2 presents the types of learning and knowledge, and it extends them in the different context of higher education.

Section 3 uses the types of education to explain how academic activities can be integrated to support professional growth.

Section 4 presents the innovation pedagogy, the profile of Turku University of Applied Sciences, which is a pedagogical approach to promote innovations in the region. Section 4 also presents an empirical example that shows how an interdisciplinary faculty can be used to support the

profile of the institutions and integrate academic activities. The results of this study are summarised in the concluding section.

Types of learning and knowledge in different contexts

One of the concerns of education psychology is the challenge of ensuring that information that is learned in one context can be transferred to a different context and applied successfully. In other words, the challenge is to determine how a higher education institution can enhance the applicability and effectiveness of what students have learned in situations and workplaces outside of the institution. Typically, education is excessively oriented towards ensuring that students can regurgitate the subject matter they were taught by institutions. Illeris (2009b, 145) argued that the scope of learning theories has been too narrow and that the theories have been dominated by the behaviourist approach up to the 1980s, at least in English-speaking countries.

Table 1 presents the four types of learning and knowledge in the context of higher education. Illeris (2009a,b) presented a typology of four basic learning types based on his earlier study (Illeris, 2007) and the earlier work by Piaget (1952). Simple cumulative or mechanical learning can be extended to assimilative learning, or learning by addition using an existing scheme in which an element is added. It also can be extended to a more demanding, accommodative, or transcendent learning in which the learner breaks an existing scheme. The concept of expansive learning can be found in the study conducted by Engeström (1987). Mezirow (1991) used the term 'transformational learning'. The types of knowledge presented by Eraut (1994) can be linked with the types of learning. The different types of learning and knowledge can be found in higher education, and they have been combined in this study based on the context of higher education.

Originally, the typologies of learning and knowledge were based on different theoretical backgrounds, and they were developed in different ways. These typologies have come close to providing appropriate descriptions of education in higher education institutions. In practice, the four levels of transfer are not separated as sharply as the typology may indicate. All of these typologies can be found in higher education, and they are necessary to enhance the capacity and competence of an individual.

The challenge of a higher education institution is to find variation and balance in the use of these levels.

TYPE OF LEARNING	TYPE OF KNOWLEDGE	CONTEXT
Cumulative or mechanical learning ▪ Learning of concepts and facts ▪ Learning is characterised by a type of automation	Replication of knowledge ▪ Repetition of knowledge ▪ Knowledge is not re-organised	Lecture, literature and memorisation ▪ No context of meaning or personal importance
Assimilative learning or learning by addition ▪ An existing scheme is used ▪ A new element is linked as an addition to an existing scheme	Application of knowledge ▪ Use acquired knowledge under new circumstances ▪ Follow the rules and procedures related to the knowledge	Problem solving and development ▪ Problem solving ▪ Gradual development of capacities ▪ Incremental innovations
Accommodative or transcendent learning ▪ Situation that is difficult to relate to any existing scheme ▪ An existing scheme is broken down and re-constructed in a new way	Interpretation of knowledge ▪ Understanding involves personal perspectives or ways of seeing things ▪ Requires professional insight and intellectual effort	Research ▪ Discovery of a new idea ▪ Produces results that are significantly new or different ▪ Radical innovations
Expansive or transformative learning ▪ Personality changes or changes in the organisation of the self ▪ Includes emotional and social patterns	Association of knowledge ▪ A sense of purpose, appropriateness and feasibility ▪ Depends on professional experience	Professional growth, internships and theses ▪ Learning expands to the workplace ▪ Learning and development of workplace coincide

Table 1. Types of learning, knowledge and context in higher education.

The types of learning and knowledge are not as sharply separated as Table 1 may indicate. The difference between assimilation and accommodation is challenging, because they indicate the difference between the universities of applied sciences and the research universities. Many higher education institutions in Europe have a dual model in which these two sectors of higher education are represented. Traditional research universities have not only basic research but also applied research and development, which produces incremental innovations. However, the faculties at the universities of applied sciences may conduct basic research and produce radical innovations.

The different types of learning and knowledge form a conceptual framework for higher education, but they do not describe all the teaching and learning situations exhaustively. In practice, creativity must be used in the process of learning to take into account various stipulations, such

as combining the human and financial resources and the requirements of the workplace. The types of learning and knowledge can be combined to a certain extent with the context and methods of education. The curriculum combines these elements in degree programmes and challenges students to take more demanding steps in their professional growth.

Professional growth in education to build a bridge to work requirements

Different types of learning are intertwined with each other when one attempts to acquire extensive expertise. It is especially important to combine theory with practice in a balanced manner. Bereiter (2004) emphasised that a prerequisite for professional growth and the development of extensive expertise is the integration of activities into a coherent whole. Expertise is achieved in the context of progressive problem solving. Individuals choose to undertake more and more demanding challenges, and they learn from their experiences. These developmental steps of professional growth into must be taken into account by pedagogical arrangements.

Paloniemi et al. (2010) recognised individual, collaborative and networked learning even though they did not emphasise the role of transfer and the learning inside and outside of higher education institutions. They emphasised the role of socio-cultural learning in which individual learning is connected to different cultures, situations and contexts. They presented evidence that collaborative learning can produce better results than individual learning. Networked learning is important because it has been stipulated that the applied research and development of the universities of applied sciences supports regional development.

Collaborative learning is a social process that creates understanding based on the thoughts and ideas presented by others (Barron, 2000). Collaboration is clearly more demanding than co-operation in which individuals or groups have an objective, but the activities are not based on the shared understanding and knowledge that results from dialogue and negotiation. Many studies have shown that creativity is collaborative and that learning groups are able to achieve better learning outcomes than any individual could have achieved alone (Fisher et al., 2002; Littleton et al., 2008). The challenge of teachers is to scaffold students and support collaboration to create understanding and new knowledge.

Reflective discourse is specialised dialogue that is devoted to searching for a common understanding and an assessment of the justification

of an interpretation or belief (Mezirow, 2000, 10–11). Critical reflection and reflective discourse assume a certain level of cognitive development, but studies have found that many adults do not operate at higher levels of cognitive functioning (Merriam, 2004, 63). It seems that innovations can be created in collaboration with the workplace only if there is critical and dialectical discourse for transformational learning.

Mezirow (2000, 21) acknowledged the possibility that critical reflection may not be necessary for transformational learning to occur, but the transformations through assimilative learning occur when, "our situation changes, and, beyond our scope of awareness, we make a tacit judgment to move toward a way of thinking or behaving that we deem more appropriate to our new situation" (Mezirow, 1998, 191). Mindless assimilation seems quite a different process from 'critical reflection and rational discourse'. The internships and other experiences of students provide opportunities for critical refection and tacit judgments in new collaborative situations.

Merriam (2004) and Mezirow (2004) recognised that the fully developed learner moves through a series of development forms to arrive at the highest potential for understanding to engage in transformational learning. They recognised that this occurs only in adulthood but that it does not occur in all, or even most, adults. This is a rather limited view of higher education and development. Mezirow (2004) concluded that there is a need for a theory that describes the process of development.

According to Mezirow (1991), development is at the heart of transformational learning with an explicit link between development and learning. Merriam (2004) and Mezirow (2004) argued that one must be at a mature level of cognitive functioning to engage in the transformational learning process and must be able to critically reflect and engage in rational discourse. Feinstein (2004) also noted that critical reflection and reflective discourse are used to facilitate transformative learning. Numerous studies have supported the notion that development is an outcome of transformational learning (Taylor, 2000). Fostering greater autonomy in thinking is a method for adult educators and achieving greater autonomy in thinking is a product of transformative learning (Mezirow, 2000, 29).

Criticos (1993) observed that what is of value is the intellectual growth that follows the process of reflecting on experience rather than the experience itself. Effective learning does not follow from positive experience but from effective reflection (Criticos, 1993, 162). Mezirow (1991) noted content, process and premise reflection, but stated that only the premise refection, which involves examining long-held and socially-constructed assumptions, beliefs and values about the experience or problem, can lead to transformative learning. Brookfield (2000, 139) concurred that an act

of learning can be called transformative only if it involves a fundamental questioning and reordering of how one thinks or acts.

Work and identity are reciprocal, because each influences the other (Kirpal, 2004). Identity can be seen as a result of empowerment in which an individual builds her or his subjectivity. Professional growth in higher education is the process of empowerment in higher education. Different types of education are needed in empowerment to create identity and expertise. Awareness, collaboration, and networking are required to deal with the transfer problem successfully and bridge the gap between higher education and the workplace.

Innovation pedagogy for universities of applied sciences

Education at the Finnish traditional research universities includes lectures, literature and examinations to create the strong informative and intellectual basis of learning and knowledge. Collaborative and networked learning is not used systematically in every subject, which is perhaps due to the fact that teachers are not required to undergo training in how to teach at traditional research universities. Internships are included only in a few subjects in which they are deemed necessary.

Education at the Finnish universities of applied sciences includes internships that take at least six months and applied research and development that is integrated with education to create capabilities for students to participate in projects in the workplace. It is evident that know-how is based not only on mere talent and intelligence, but it can be created by practice. Education also includes project work and theses that are planned to support the companies and the public sector in the region. However, the integration of education with applied research and development requires interdisciplinary activities in order to understand customers' needs and to solve problems in innovative ways.

The typical procedure of project work at universities of applied sciences is that a group of students selects a relevant problem under the guidance of the teacher, plans the project, investigates the problem, writes a report and presents the results of the project to other students and the teacher. The presentation and the report are the basis for a grade or some other form of assessment. In this form, the project work is group-based, collaborative learning inside the institution, and there is no outreach to engage with customers and partners who are outside of the institution.

An alternative form of project study is that the teachers and other personnel apply for funding from the European Union or other sources, identify potential collaborative partners and integrate the project with education. In this alternative and in more developed form of study, students are able to find a useful role, acquire real work experience and study in networked collaboration, all of which create capabilities that can be used in the workplace after graduation.

There must be some kind of innovative element in the project plan that is solved in the project using collaborative and networked learning to achieve an incremental innovation, but a radical innovation is a new product, service or re-engineered process (Tidd et al., 2001). Typically, incremental innovations are based on applied research and development in which cumulative knowledge and learning are used in the work environments, but radical innovations are often based on basic research (Heiskanen, 2010). Incremental innovations are close to the concept of continuous improvement in quality assurance. Radical innovations are close to the re-engineering of processes that produce new products or services (Hammer & Champy, 1993).

Universities of applied sciences aim to be valuable institutions in regional development. Typically, customers' needs do not follow the subject, the degree programme or the field of study. Therefore, research and development project teams must have members from many backgrounds. Interdisciplinary faculty and operations across the faculty support the projects of applied research and development, which have shown their ability to respond to the needs of the workplace. This is different from the creation of new universal knowledge, which is an ideal of traditional research universities that have discipline-oriented faculties and subjects.

Interdisciplinary activities are appealing for increasing the effectiveness of research and development and economic growth. According to Kirjonen and Satka (2010), the challenges of interdisciplinary activities include the definition of the research task, language and communication, various limitations of research, the difficulties encountered in becoming qualified for a research career and the sufficiency of know-how and motivation. On the other hand, they listed the many benefits of interdisciplinary activities, such as expanding thinking, broadening views, improving effectiveness and enhancing the effective use of data and new ideas. However, they did not emphasise the role of applied research and development, which is based on the development needs of the region. Customers' needs are met with interdisciplinary projects and applied research and development teams, which may reflect on the organisational structure of the institution.

Figure 1 depicts an innovative faculty of higher education. The Faculty of Technology, Environment and Business at the Turku University of Applied Sciences was planned to combine engineering, business and environmental education. Following the innovation process in the workplace, the next steps are the design and sales education. Many other faculty members at the institution have been chosen in such a way as to combine business, technology and some other knowledge.

The profile of Turku University of Applied Sciences was defined in its strategy process as innovation pedagogy. It is based on the interdisciplinary needs of the workplaces in the region. The interdisciplinary projects of applied research and development respond to the development needs of the region and are integrated into flexible curricula. The integration of research and development with education can be seen as an innovation in higher education. The project studies included in the curricula provide opportunities for students to create the capability of conducting project work that is needed in the workplace.

The projects also emphasise the need to promote entrepreneurship within the institution, because funding of research and development by the central government is limited. External funding is sought for the projects from the European Union and many other funding sources. The promotion of entrepreneurship is important within the institution and in the workplace, because entrepreneurship promotes economic growth, employment and the general welfare of society.

International funding promotes international collaboration. Many international projects involve the exchange of students and staff, and partners from many other countries may be involved in the project. International activities are important for Finland because export has a prominent share of the gross domestic product. There is evidence that companies learn from export (Wagner, 2002), hence international trade is an important element in spurring innovations because it gives rise to new ideas, improved organisational practices and productivity improvements.

Internships are important elements of curricula because students are able to receive practical guidance and supervision by working in companies and other organisations. The students document the experience they gain by participating in internships or other on-the-job training activities. In this way, the internships are integrated with the theses that the students ultimately produce. In a favourable case the students are able to participate in the projects of applied research and development and, at the same time, conduct their internships and write their theses in an organisation to which the project is targeted. These experiences are supported by a study conducted by Palonen and Gruber (2010) who

emphasise that wide-ranging practice and routines form the basis for the development of expertise.

Advantages of the integration of academic activities are improved supervision, education that corresponds to the needs of the workplace and increased work opportunities. When students write their theses during the internship, the representatives of the workplace are able to supervise the students in a way that is relevant for the organisation. According to Finnish experiences, the internships and theses are the best elements of education that help students to find jobs. Many of the students become employed during their study.

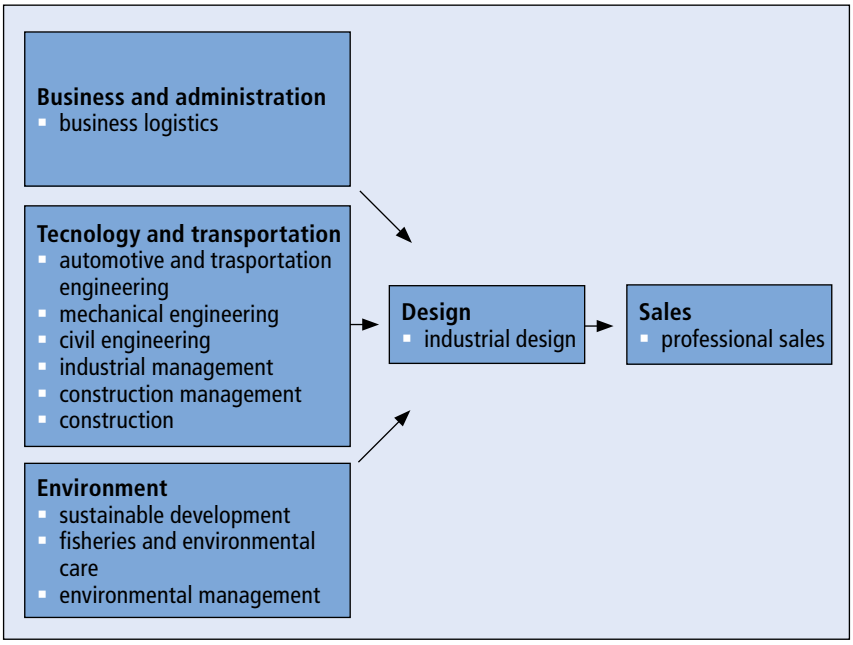

Figure 1. An innovative faculty in higher education.

Conclusions

Learning is not just the mechanical or isolated formation of knowledge that can be recalled and used in situations that are similar to the learning context. Typically, this type of learning is based on lectures and literature, and it includes concepts and facts that are memorised for use in examinations with no context of meaning or personal importance. The experiences of the Finnish universities of applied sciences indicate that other types of learning and knowledge are required to promote the transfer of education.

More advanced learning includes the gradual development of capacities in problem solving, in which a new element is linked as an addition to an earlier scheme. Assimilative learning occurs when education is integrated with the projects of applied research and development, in which knowledge is applied in practical situations to develop products, services and processes and, hence, to produce incremental innovations. Typically, this type of education is based on interdisciplinary, group-based and networked collaboration.

A new step is taken in learning by accommodative learning when the learner breaks down an existing scheme and uses the knowledge in a new situation. This kind of learning may take place in basic research in which the learner finds and accepts something that is significantly new or different. Accommodative learning, which takes place in explorative research, can lead to new products, services or processes. When these outcomes are applied in the workplace, they can be referred to as radical innovations.

Expansive learning may produce outcomes that change the personality or the identity of the learner. This can be characterised as professional growth that enhances expertise. The expansive learning follows the process of reflecting on experience from various perspectives. The integration of academic activities supports the transformation of professional growth into expertise. Education is integrated with multidisciplinary applied research and development, internationalisation and the promotion of entrepreneurships, so that students can create the capabilities they need to be successful in the workplace. An additional beneficial component of the process is to integrate the elements of the innovation pedagogy with the students' internships and theses, which will inevitably help the students to obtain a job and be successful in the workplace.

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A transition in the management of vocational education: from rector institutions to partnerships

Seija Mahlamäki-Kultanen and Martti Majuri

Abstract

The success of Finnish vocational education is based on a long-term development between several stakeholders. The institutional development has grown from small, sector-based and rector-centred schools to well developed and networked local and regional vocational institutions. This has meant a tremendous change in the leadership towards the innovative and networked models. In this article we analyse rectors' work and the themes and processes of networking in the context of vocational education.

Introduction

In Finland, basic vocational education of upper secondary level has gone through a decade-long path of success leading to the current moment. The attractiveness of upper secondary level vocational education and training has increased and has now surpassed that of general upper secondary school. The success is based on the long-term co-operation and joint development work between teachers and stakeholders in vocational education. The workplace-orientation in curricula has been increased and on-the-job learning is goal-oriented and guided, as well as assessment being extended to the workplace and realised in vocational skills demonstrations. The work to prevent social exclusion takes many forms. All of this has required significant changes and increased professionalism in the management of vocational education and training.

The number of vocational institutions has undergone a rapid decline, and the average size of the institutions has increased. The model of sector-specific institutions has given way to regional vocational institutions that in larger urban areas contain thousands of students. Rector-centricity and

emphasis on professional cultures in management has been replaced by a professional approach that highlights clear processes and work carried out in the form of networks.

Currently, expectations are directed to the capacity of educational institutions to anticipate changes in the region and act as innovative pioneers (Torniainen et al. 2012). This has replaced previous emphasis on the viewpoint of educating young people to become full members of society as well as an element highlighting professional subcultures. The globalisation of work and production and the mobility of people for different reasons make it necessary to review the competence requirements in the curricula against the backdrop of intensifying international competition and to organise teaching in a multicultural spirit and accounting for the needs of immigrants (Koulutus ja tutkimus vuosina 2011 – 2016).

In this article, we analyse the management of educational institutions with a particular focus on the changes that have taken place in the work carried out by management. We, the authors of this article, represent teacher education and work in HAMK UAS, Professional Teacher Education Unit, which provides education for both teachers as well as managers in vocational and professional education both nationally and internationally.

The cultural shift undergone in the area has been vast, and an even more innovative approach is expected from the educational institutions in future and their management. This cannot be achieved without the skills to manage networks and partnerships. The competencies of Finnish managers in upper secondary education with reference to the management of partnerships and networks are observed in a sector-specific manner based on the studies available. Rectors and managers in vocational institutions have been studied from different perspectives, including pedagogical management and the rector's profile from the viewpoint of competence (Hänninen, R. 2007; Mahlamäki-Kultanen 1998). However, a comprehensive overall study on the leadership and management of vocational education has yet to be made. To make up for this deficiency, this article presents and analyses research results from the past decade in a thematic manner. Central themes in the article are innovation management, management of partnerships and networks, management of internationalisation and management of networks with business and industry. Based on these perspectives, we draw conclusions regarding the present situation and current development challenges.

The paths to a rector

In practice, the paths to a rector in a Finnish vocational institution can be many and officially the requirements are the following:

> "In order to be eligible, a rector shall have the following qualifications:
>
> 1. A Master's degree;
> 2. A teaching qualification for the relevant form of education as laid down in this Decree;
> 3. Adequate teaching experience; and
> 4. A degree in educational administration in compliance with qualification requirements approved by the National Board of Education, educational administration studies provided by a university amounting to a minimum of 15 credit units, or adequate knowledge of educational administration acquired by other means. If education that is within the scope of several different forms of education is provided in a single educational institution, or if the rector is responsible for the operation of two or more educational institutions where education within the scope of different forms of education is provided, the rector shall have the teaching qualification referred to in Section 1.2 in one of these. Notwithstanding what is said in Section 1.1, a person with a suitable Bachelor's degree referred to in Section 13.1 paragraph 1 is also competent to serve as a rector responsible for education referred to in the Vocational Education and Training Act."
>
> (Teaching Qualifications Decree 986/1998)

The necessary requirements mean that a person in charge of an educational institution has to be well experienced in the processes and practices of working life as well as in teaching and administration. However, the skills and competences of leadership are extremely critical in the emerging modern network organisations and there are no official requirements of leadership skills.

Management of an innovative vocational institution

Today, the word innovation is suffering from a certain amount of over use that has, for some, lead to an inflation of the word. Innovativeness is often understood as an element that is somehow separate from daily life; it has obtained an air of something unusual, a special gift bestowed upon certain

special individuals. Organisations commonly invite outsiders to give talks on the benefits of innovation, leaving listeners with the impression that in order to be a productive member of the community, everyone should be constantly coming up with a stream of new ideas. Contradictory to this view, Kari Korpelainen (2005; 2009), who has studied innovation in the contexts of marketing and education and given numerous lectures on related topics, defines innovativeness as a feature of the community: "The innovativeness of an individual or a community equals identifying problems to be solved or ideas that generate value, the rapid adoption of ideas and/or new, value-generating solutions and sharing them with interested parties and those in need of the solutions."

A definition of innovativeness such as the one quoted above presumes a non-hierarchical model that is completely different from the traditional management of schools. Each member of a community at an educational institution should thus have an opportunity to recognise problems and speak about them without worrying about how it might affect their position within the community. It is important to bear in mind that it is not uncommon for an innovation to arise from a problem, a concept that in Finnish-language literature is, in fact, often avoided in favour of a 'challenge', a term perceived somehow as having less negative connotations. What is essential, however, is not to point out problems but to solve them together in a creative manner. Creating the right atmosphere and promoting constructive problem solving in co-operation with others is one of the central tasks of a manager in an organisation aiming at creativity and high-level expertise.

The difference between traditional forms of management in vocational education and training is vast. In a dissertation, material was gathered on Finnish and Dutch educational institutions between 1997 and 1998, the period of time when the development of vocational colleges was just commencing. The interaction between the teachers and rectors frequently placed more emphasis on the difference in power and prestige than on joint knowledge formation and open interaction. At the time, rectors were characterised using metaphors that reflected top-down communication and the isolated nature of their work (Mahlamäki-Kultanen 1998).

Network-style management and partnerships have also been enhanced through various administrative methods and funding programmes. For example, a central funding criterion for different national and international degree programmes has been submitting the application as a network. With the EU, acting within a network of projects has gradually altered educational institutions so that, especially in the area of development work aimed at innovations, the actors have become very adept at networking.

The actual organisation of education and training takes place within the structures of the Finnish educational system, so that the organisation permit can be held by a single organiser only. The Noste programme included an experiment where a permit for organising education and training for a group of mature students of a specific age was granted specifically to a wide network, the work of which was supported through nation-wide communications and a participatory assessment programme. Results on the progress of the network have been reported in Mahlamäki-Kultanen & Hulkari (2005) and in Mahlamäki-Kultanen & Hulkari (2009). The data consisted of approximately 60 nationwide networks of educational institutions, the development of which was followed over a period of five years. It turned out that in many instances the Noste programme remained on the level of an individual project, the success of which was down to a capable project manager, whereas the top management of the educational institutions was not necessarily involved or did not contribute to the core results (Mahlamäki-Kultanen & Hulkari 2009; Mahlamäki-Kultanen & Hulkari 2005).

The management of a network-like organisation based on partnerships is a skill that is perhaps best learned through active participation in networks and through establishing learning as one of the goals of the activities. It is necessary to establish a certain distance from one's own activities and monitor events and one's own learning in a reflexive manner with the help of different theories and models. The development of partnerships in the Noste programme proceeded according to the following stages:

1. Early-stage confusion, distrust and/or unhealthy competition.
2. Acknowledging the opportunities offered by the network.
3. Agreeing on the principles of co-operation within the network.
4. Effective network co-operation.

According to our study, the Finnish VET organisations were in most cases very far from the effective network co-operation phase; only few of the project networks reached this during the five years of our follow-up study. It seems to be that considerable effort and leadership is needed from the rectors in this area.

According to Korpelainen (2009), an innovative organisation is not necessarily a very harmonious one. It may involve confusion and even competition. When implementing changes, a manager of a vocational institution must balance between the conflicting pressures created by traditions emphasising order and harmony, the plurality and flood of information brought on by networks, partnerships and risk taking, along

with the search for something new and the uncertainty that accompanies innovation.

In order for partnerships between educational institutions to be both productive and innovative, much is required from a manager. In the work of a manager, effective models and conceptualisations provide clarity both for the manager themself and for other members of the community. For example, Figure 1 illustrates Korpelainen's thinking concerning the relationship between innovation and learning in the processes of management.

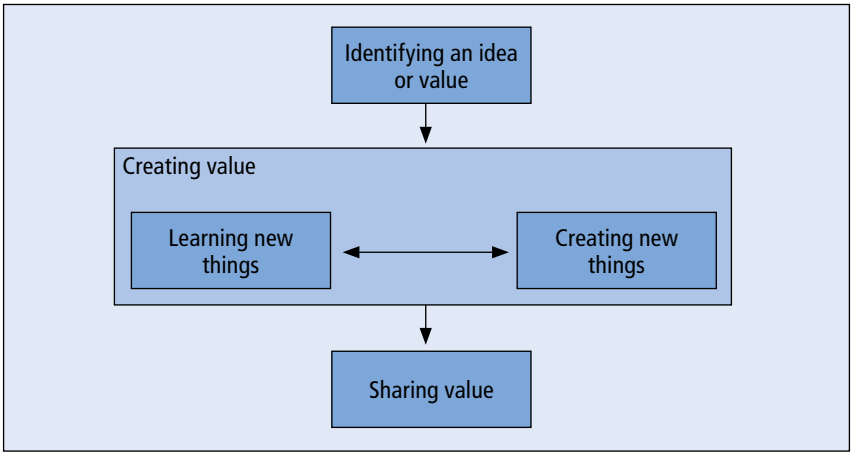

Figure 1. The essence of innovativeness (Korpelainen, 2009).

The objective of the Development Plan for Education and Innovation 2011 to 2016 (Koulutus ja tutkimus vuosina 2011–2016 2012) is to strengthen co-operation between vocational institutions and both the world of employment and higher education institutions. The direction of co-operation is a new one, and the management of partnerships is a challenging task. The nature of innovation as a social process highlighted by Korpelainen (2009) is central for attaining this objective.

Managing internationalisation processes

Aspects promoting the internationalisation of both vocational institutions and universities of applied sciences have included the natural pressure brought on by the internationalisation of students, the teacher's often value-based willingness to provide students with new opportunities and the objectives of educational policy. Mattila (2007) has studied the impulse for internationalisation at the early stages of the system of universities of

applied sciences. Many of her findings are also highly interesting from the viewpoint of the corresponding development in vocational institutions.

In a study implemented by the HAMK University of Applied Sciences Professional Teacher Education Unit on the internationalisation strategies of universities of applied sciences, it transpired that the strategies contain a great number of promises to the student, even though the links between internationalisation and elements such as curricula and the daily activities of the institution were often somewhat difficult to identify. However, the case study also contained some good examples in which the goal-oriented and systemic approach of management was visible as a profound understanding and interpretation of the matter (Laatua ja vaikuttavuutta kansainvälistymisen johtamiseen 2013).

Leading the internationalisation of a vocational institution often needs many actions from the rector: symbolic presence and strategic vision, as well as supporting the actors on monetary issues and practical hands-on operations. The internationalisation should be transparently rooted at the curriculum-level for it to be truly integrated in the culture and practical operations of the vocational institution.

Co-operation with businesses and industry and management of partnerships with companies

Co-operation between education and employment has undergone significant changes in the past 15 years. In connection with legislative changes that came into force in 1998, the national core curricula were reformed. A total of 20 credits worth of on-the-job learning, consisting of goal-oriented studying with the appropriate guidance, was defined for all areas of study. The change was considered important from the viewpoint of business life, trade organisations and the teaching sector itself. In 1998, the organisations prepared a recommendation in which private workplaces and public administration were prompted to enhance on-the-job learning by students through providing them with work placements.

Hour-by-hour timetables prepared by teachers should give way to more comprehensive thinking regarding teaching and work where the teacher would function as an expert in his or her field and as the person responsible for, and guiding, the study process. The teachers' work consists of the following elements: the training of workplace supervisors, planning carried out in co-operation with workplaces, teaching at the educational

institution, assessment of professional competence and guidance provided to students online.

Around midway through the 2010s, vocational skills demonstrations were incorporated into the core curricula. In vocational skills demonstrations, the competencies of students are assessed in a work environment that is as genuine as possible, preferably in connection with on-the-job learning. Significant emphasis is placed on the demonstrations in the assessment of students.

Today, in 2013, plans for increasing the level of work-based training, where the studies could be tailored increasingly to fit the needs of each student, and in the so-called 2 + 1 model the final year of studies would be implemented in the form of apprenticeship training.

For the educational institutions, these changes have brought many opportunities, but also some challenges. In addition to preparing curricula and providing training, the duties of the educational institutions have included ensuring on-the-job learning opportunities for their students. Also, it has been the responsibility of the training organiser to train its teaching staff so that they are able to accommodate these changes. This work has been supported by significant continuing education projects by the Finnish National Board of Education and EU-funded projects.

Furthermore, the duties of the organisers of training have included organising training for workplace supervisors. Even though this task is supported by project funding, the actual training of workplace supervisors has been largely carried out by teachers. One necessary adjustment would consist of integrating the training of workplace supervisors as part of the regular work of teachers and incorporating it into the plans for each academic year in connection with periods of on-the-job learning, for example (Majuri 2007).

The changes have been significant as they concern the planning of teaching and the work of teachers. The majority of teachers have experienced the changes positively. In a study implemented by the HAMK University of Applied Sciences Professional Teacher Education Unit, it was found that the expansion of networks with business and industry and increasingly goal-oriented co-operation with the world of work have also created an opportunity for teachers to maintain their own competence and had a positive impact on the work of teachers (Eerola & Majuri 2006).

On-the-job learning combined with learning taking place at an educational institution is experienced as a functional learning method that, when planned and implemented appropriately, enhances the learning of students. Vocational skills demonstrations are experienced as an assessment

method that is particularly motivating for students in basic vocational education and reflects the student's actual competence in the workplace.

Conclusions

Successful completion of the new, broader tasks of vocational education, including the task of workplace development and the associated tasks of on-the-job training and professional competence, renders the challenges of management too complex to be handled by a single individual or institution. The power of partnerships is central in this.

The task of the management of educational institutions is to develop the competence of staff in order to increase co-operation with employers among teachers. Even though the majority of teachers have experienced the changes positively, not everyone immediately embraced the network method of working after a long period of working at an educational institution. Workplace experience, continuing education and new forms of training for teachers have been used as tools to accommodate teachers in this new situation.

Co-operation between managers and the representatives of business life in the context of different organisations creates a significant foundation for the networking method of working for teachers in different fields of study. Through active participation in anticipating the needs and the development of business life in the region, educational institutions are able to impact their own future as well as the future of businesses. The basic task of an educational institution is pedagogical. Networks with business and industry and enabling teachers' co-operation with employers are becoming increasingly integral elements of pedagogical management (Eerola & Majuri 2005).

Ever since the early stages of the transition, employers have viewed on-the-job learning as an important method of developing and updating education. On-the-job learning constitutes a network effort, where learning takes place not only for the student, but also for the teacher and workplace supervisor. It also provides an opportunity to develop everyone's background organisation through the systematic assessment of the activities (Majuri 2001; Tynjälä & al. 2006; Eerola & Majuri 2008; Majuri 2007).

In a well-networked culture, the relationship between teaching, guidance and learning can be described through the metaphor of a merger. The learning of students, teachers, managers and representatives of business and industry is no longer limited to learning by educational institutions and companies but part of learning in the region (e.g. Nykänen & Tynjälä 2012).

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The vocational teacher profession

The teacher as a pedagogical thinker

Katri Aaltonen

Abstract

The vocational teacher qualification is a dual expertise based on profound competence in a field of working life and pedagogy. It actualises in educational practice as teacher's pedagogical thinking, which is a widely studied research area in the 'Teacher Thinking and Action Research' paradigm. Researchers have provided related concepts referring to teacher thinking, of which in the present article I use the concepts of practical knowledge and pedagogical content knowledge. Practical knowledge is a teacher's general framework for teaching, which consists of experience-based beliefs, images and concepts related to vocational education and training. It comes explicit when the teacher is justifying his/her pedagogical decisions and choices. Pedagogical content knowledge is specified knowledge about the aims, contents and methods; it is the knowledge the teacher consciously constructs in planning and instils in the midst of the interaction.

The first aim of the present article is to describe teachers' pedagogical thinking as a knowledge base by using the concepts of practical knowledge and pedagogical content knowledge. The perspective on teachers' pedagogical expertise is its personally constructed meanings, which the teacher explicates in these two forms of knowledge. The second aim is to describe how practical knowledge is mediated into educational practices through pedagogical content knowledge. The article focuses on vocational education teachers, on vocational teacher students and teacher educators. In the beginning of the article I define teachers' pedagogical thinking as well as discuss the quality requirements for it. The professional development of a vocational teacher is described from the point of view of teacher education models, the teacher's identity formation and collaborative colleague activity.

Pedagogical thinking revealing the teaching expertise

What knowledge is essential for teaching?
How are pedagogical decisions made?
How aware is a teacher of the preferences and value-loaded assumptions behind teaching?
How rational is a teacher in his/her thinking?
Does s/he have pedagogical theories on which to base his/her decisions?

A teacher's pedagogical expertise is realised in his/her pedagogical thinking. Pedagogical thinking is a teacher's professional thinking, which is related to decision making process in educational contexts. Some of the decisions might be based on common thinking and intuitive thinking. However, what distinguishes pedagogical thinking from these is the teacher's ability to justify their decisions and actions so that the justifications are based on the philosophical and theoretical grounds of education, the aims stated in the curriculum as well as the institution's strategies, pedagogical commitments and approaches (See also Kansanen, Tirri, Meri, Krokfors, Husu & Jyrhämä 2000, 5; Toom, Kynäslahti, Krokfors, Jyrhämä, Byman, Stenberg, Maaranen & Kansanen 2010, 339).

Teachers' pedagogical thinking means also the ability to conceptualise everyday phenomena, and to look at them as a part of larger instructional processes (Toom et al. 2010, 339). Thus, the teacher is sensitive to observing the interaction taking place on various levels and is able to identify the key phenomena, as well as relate them to both theoretical perspectives and working contexts of vocational education.

Pedagogical thinking can be made explicit by describing it as a pedagogical knowledge base. The teacher's pedagogical knowledge base is a widely studied area within a paradigm called 'Teacher Thinking and Action Research'. Researchers have provided lots of concepts referring to teacher thinking as well as its relation to actual practice, such as practical knowledge, practical theories, action theories, implicit theories, knowledge-in-action and pedagogical content knowledge.

In the present article teacher's pedagogical thinking is described by using the concepts of practical knowledge and pedagogical content knowledge. Special emphasis is put on the relations between these different types of knowledge (Figure 1).

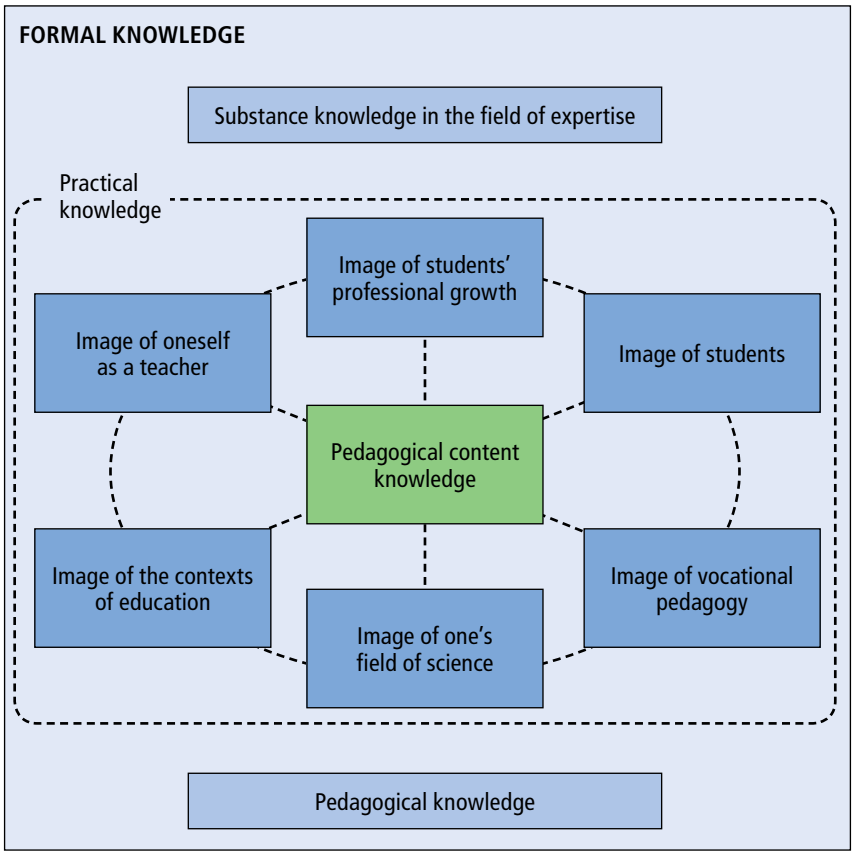

Figure 1. Pedagogical knowledge base.

Practical knowledge as a wide framework for teaching

Behind a teacher's actions there is practical knowledge – a wide system of values, attitudes, beliefs, conceptions and images – that s/he actively uses to shape and direct teaching (Elbaz 1983, 3). This set of understanding of the educational contexts and encountering is oriented to practice and is thus tested in practice. Therefore, practical knowledge is both a realistic and idealistic framework for teaching: the teacher always has some ideals and goals and they also want to achieve these in teaching (Pitkäniemi 2010, 160).

Practical knowledge consists of the teacher's perception of oneself as a teacher and of students in the particular field of education. It also includes teachers' conceptions of learning and teaching in his/her expertise area as well as the pedagogical principles and general aims of teaching, for example, when seeing some pedagogical models and methods more appropriate than others in vocational education. When a teacher is explicating his/her practical knowledge s/he is pondering questions such as:

What kind of role do the students and I have in the study process? How do I see the students as learners in this field of vocational education? How can I relate my expertise area or subject to the context of vocational studies in the field? What is difficult about learning the subject? What kind of pedagogical approaches and working methods support the student's professional growth in the particular field of expertise?

In addition, practical knowledge consists of the teacher's beliefs and their image of the physical, social and affective context of education. For example: What is my role as a teacher in the entire educational community the students are part of? How do I value the facilities the school gives me? How do I see myself as a member of the school community? How does it feel to work in the school with these kinds of regulations, norms and rules of practice?

All these ponderings are emotional, moral and ethical revealing each teacher's values and intentions in relation to others and contexts. Practical knowledge is a tool that a teacher uses either consciously or unconsciously; some part of it is always hidden – in implicit form – such as routines, unquestioned actions and taken-for-granted ideas. Moilanen (1998) describes practical knowledge as the 'wisdom of practice' of appropriate working approaches and purposes.

Although the formation of practical knowledge is based on each teacher's experiences and their interpretation of those experiences, it is not totally opposite to theoretical knowledge. Fenstermacher (1994) distinguishes practical knowledge from formal knowledge by using the concepts of 'knowledge of teachers' and 'knowledge for teachers'. Due to the fact that pedagogical thinking and teaching also includes the theoretical orientation – it is not merely a practical skill – practical knowledge is composed of theoretical knowledge also, which has been interpreted and modified to fit the practical situations (Beijaard & Verloop 1996).

Constructing pedagogical content knowledge in planning

In practice teachers do not rely on practical knowledge solely when implementing the learning situations for their students. When planning study materials and assignments, choosing teaching methods and modifying them to be appropriate to the particular student group and purposes, the teacher is constructing pedagogical content knowledge (PCK).

The original definition of PCK is based on Shulman (1987) who sees it as 'the blending of the content and pedagogy'. More closely, PCK refers to each teacher's interpretation and transformation of subject-matter knowledge in the context of facilitating student learning (van Driel,

Verloop & de Vos 1998). It includes such things as knowing how to set learning objectives and teaching goals to a particular learning situation, organising a sequence of interaction into a coherent course, facilitating the students' activities, and allocating time for satisfactory treatment of all significant concepts and student experiences. It includes knowledge of the presentation of concepts and ideas, how to exemplify important theoretical issues and relate them to actual working life and what students already know. Moreover, it is the teacher's understanding of specific learning difficulties and motivational devices that can be used when student attention is wavering. The elements of PCK are intertwined and should be used in a flexible way (Barnett & Hodson 2001).

However, the construction of pedagogical content knowledge, i.e. planning, does not necessarily mean written lecture plans. It can be partly or totally mental, and is "documented" as written or mental pedagogical scripts. The pre-planned pedagogical content knowledge (*PCK-in-planning*) is often reconstructed after the lesson, in the post-active phase of teaching (*PCK-in-reflection*) when the teacher is evaluating the implementation of the lesson (Aaltonen 2003; Aaltonen & Sormunen 2005).

The construction of PCK does not mean fixed decisions made in advance by the teacher. Also in open curriculum models and learning-centred approaches where the implementation of the interactional sessions with students is negotiated in a more 'ad hoc' fashion, the teacher relies on pedagogical content knowledge and re-builds it. This kind of 'on-the-spot-planning' is typical and easy for experienced teachers who have extended expertise in the field, a profound understanding of the educational goals and possess 'a repertoire' of working methods and approaches to be modified to fit the goals and students' needs at the particular moment. The teacher is building *PCK-in-action*, which is the basis of fluent and skilful teaching (Aaltonen 2003). With a novice teacher this kind of 'spur-of-the-moment planning' is extremely challenging and therefore more efforts must be put into planning in advance, and then adjusting these plans within the limits of one's expertise. A novice teacher might recognise the need for the reconstruction of PCK but nonetheless follows the pre-plan. Mostly on the basis of intuition s/he "has a feeling that there is something going wrong" in the chosen decision, but s/he is unable to make any changes in order to conduct pedagogically flexible teaching (Aaltonen & Sormunen 2005).

To summarise the relation between these two forms of pedagogical knowledge, practical knowledge and pedagogical content knowledge are qualitatively different kinds of knowledge. A fundamental difference to practical knowledge is the fact that pedagogical content knowledge is a

dynamic knowledge base under continuous evaluation and re-construction, whereas practical knowledge is more stable and not constantly reflected and reviewed. Practical knowledge is more like an intuitive framework to teaching, which is mediated into practice through pedagogical content knowledge. It comes visible when the teacher is justifying decisions, and answering the "Why?" questions (Aaltonen 2003; 2012).

Criteria for high-quality pedagogical thinking

The requirement for teacher expertise is profound pedagogical thinking aligned with educational practice. The quality criteria for pedagogical thinking can be summarised from the previous chapters. The first criterion is that the teacher possesses theoretical understanding of the phenomena involved in teaching, learning and the field of working life, as well as being aware of what kind of personal interpretations s/he makes on the basis of that knowledge. Secondly, the teacher ought to be aware of his/her conceptions, images and beliefs related to vocational education and training (i.e., explicated practical knowledge). A pedagogically excellent teacher has also the courage and competence to question the existing ways of thinking and acting, and in that way to test the fundamental basis of teaching. Moreover, one essential criterion is embedded in the instructional reasoning, when the teacher is able to make pedagogically justified decisions in the midst of interaction.

One of the most important criteria for pedagogical thinking is its congruence, which becomes apparent in different ways. First of all, it can be considered as internal congruence of the pedagogical knowledge base so that the teacher's personal images of learning and teaching, as well as the students' roles and her/his own roles, are not conflicting (Aaltonen 2003; 2012). Thus, the internal congruence exists between the various images and beliefs within practical knowledge. For example, this is not the case if the teacher on the one hand sees learning as a student's meaning-making process, but on the other hand believes that his/her role as a teacher is to lecture and deliver knowledge to students.

Internal incongruity is diminished only by making the knowledge base explicit and by putting it under a thorough examination. As the only way into the teacher's mind is by asking him/her to verbalise their thoughts, reflective tools such as Verbalising Practical Knowledge and Me as a Teacher (see Appendix 1) guide the teacher to explicate the basic pedagogical principles and to relate them to the relevant theoretical perspectives.

In research contexts the most frequently used methods and tools to explicate teachers' pedagogical thinking are those such as thematic interviews or stimulated recall situations where the teacher is explicating his/her thinking on the basis on a digital video recording of the lesson in question. The storytelling techniques, using professional diaries for example, see teacher development as 'stories to live by' where the story provides a narrative thread that teachers draw on to make sense of themselves and their practice. 'Stories to live by' is a way to conceptually bring together a teacher's personal practical knowledge and identity. Teachers engage in narrative 'theorising' and, based on that, may further discover and shape their professional identity resulting in new or different stories (Beijaard, Meijer & Verloop 2004).

Secondly, the congruency should be seen between thinking and action. The functional congruence means that the teacher is actually acting in a way s/he thinks or tells to do (Aaltonen 2003; 2012). The functional incongruity is found very often is cases such as when the teacher describes his/her teaching to be learning-oriented and based on students' needs and interests, nevertheless in practice s/he has a teacher-centred approach and makes all the decisions on the behalf of the students. The functional congruence is related to how aligned pedagogical content knowledge is with practical knowledge.

It is quite natural to find functional incongruity in novice teachers' work when one's own pedagogical philosophy is yet to be completely defined, and one's repertoire of practical skills is still growing. However, the functional incongruity is also quite common in cases of experienced teachers. Seeing oneself as an outsider and truly evaluating one's educational practice in relation to thinking is challenging. Teachers need appropriate tools to trace the actual teaching implementation. Reflective tools such as Peer Couching, Stimulated Remembering, Student Action Analysis, Voices Filling the Learning Space and Parallel Planning (see Appendix 1) form a concrete basis for analysis and discussion so that the teacher does not have to rely on his/her memories only when recalling the happenings from the lessons. When using these tools, the teacher is in a position of an 'outsider' and is able to put his/her own teaching as an object of reflection. They also give opportunities and time to facilitate reflective revision, rethink his/her teaching and the knowledge base used in it, as well as examine the consequences of various actions (See Aaltonen & Sormunen 2005).

Thirdly, congruence should exist between the ideal (ambition) and realistic (actual competence) (Aaltonen 2003; 2012). Sometimes a teacher might have ambitions and goals to work towards in a particular way, but in practice does not have the competence to do so. For example, this is the

case when the teacher is aiming to achieve 'deep learning through dialog', but the implementation is more like 'classroom discussion' where the teacher is asking simple questions about memorising facts. The teacher might lack theoretical understanding of dialogical learning and/or practical skills and methods to organise and lead a dialogical situation. Readings of pedagogical literature build on a teacher's understanding, give insights to practical methods and help to achieve the intentional ways of working. Learning Clinics on Practical Dilemmas help teachers to co-develop solutions to practical problems with their colleagues or peer student teachers (see Appendix 1).

Lastly, the social congruence indicates the shared conceptions and interpretations within the educational community (Aaltonen 2003; 2012). The social congruence is related to the culture of the school, to unquestioned habits and ways of working in 'our school', and is often seen as social pressure when views are conflicting. The social congruence requires deep negotiations on issues such as the school's mission, values and pedagogical principles. For example, the school might have a stated pedagogical model (e.g., project-based learning), which is implemented differently by each teacher when the basic principles of the pedagogical model are not discussed together.

Professional development as a vocational teacher

In the vocational teacher education, which is the context of the present article, the teacher student has to be an expert in a specific field and have had extended experience in working life when s/he enters the teacher education programme. S/he already has a professional identity constructed through working in the particular occupation. Becoming a vocational teacher is a process of building a double identity and becoming an expert in education and training also. However, pedagogical expertise is not a separate part that could be added on top of field-specific expertise in teacher education. In identity formation the two fields of expertise are merged; it is a process of becoming – not only a teacher – but becoming a Nursing teacher, an Engineering teacher, a Business teacher, etc.

Approaches to teacher education models

The teacher's professional development takes place simultaneously on the cognitive, affective, social and personal levels. It is the reconstruction of teacher identity, development of scientific and pedagogical thinking as well as a change in educational practices (Väisänen & Atjonen 2005, 7).

The conception of teacher development is essential in teacher education programmes and in-service teacher development courses: What is it to become a teacher? How to develop as a teacher? What is essential in supporting the teacher's professional growth? The ways in which the teacher educators conceive the development of teachers affects the pedagogical models used in teacher education as well as the support given to the teacher students in the guidance and counselling processes.

The linear or technical training approaches have changed into more reflective and enquiry-based models. The transmission-type methods where teachers are attending de-contextualised workshops or one-day seminars have shown their inefficiency. The assumption underlying these models is that teachers will adopt and implement all ideas presented in these teacher development courses. However, these models fail to support long-term change (Fazio 2007, 5).

During reflective job-embedded training approaches teachers are seen neither as objects of research and development nor solely as consumers of academic research results. They are expected to take an active role as reflective practitioners who themselves define the issues of development, or the problems to be developed in everyday practices. This type of approach, the teacher's ongoing development model, is referred to as 'practitioner enquiry': a systematic development process in which a research and development element is integrated into teaching and learning. Teachers are not seen as academic researchers but more like professionals developing everyday practices and students' learning (e.g., Maaranen 2009).

The practical approaches to teacher education programmes can be reflected through four paradigms: behaviouristic, traditional-craft, personalistic and enquiry-based.

- In the behaviouristic paradigm the teacher student is viewed primarily as a passive recipient of professional knowledge, which is determined in advance and is constant (Zeichner 1983). From the point of view of the teacher students the expectations of ready-made 'toolkits' as a single outcome of the teacher education illustrate this approach.

- In the traditional-craft paradigm teacher education is viewed as a process of apprenticeship: teacher development is seen as assimilation of the craft knowledge of wise practitioners and professional knowledge is seen accumulated by trial and error. Teacher educators and colleagues in schools are seen as role models possessing the wisdom of good teaching. (Zeichner 1983.)

- The personalistic paradigm seeks to promote the psychological maturity of teacher students and emphasises the reorganisation of perceptions and beliefs. Teacher education is seen as a 'process of becoming' in which the teacher students are encouraged to find their best ways to function as teachers. The knowledge and skills in the curriculum are not completely determined beforehand (Zeichner 1983).

  In the teacher education programmes with a collaborative implementation model this personal growth is coloured by the conscious presence of 'the important others'. Teacher development is not only 'becoming a teacher' but 'becoming a teacher through others'. The collaboration (i.e., sharing readings, discussing teaching experiences, planning together, pondering practical dilemmas, having peer assignments and projects, etc.) helps to see 'myself-as-a-teacher' as a reflection through others and identify one's strengths and weakness in those of the others as well as evaluate how well the working habits and methods of the others fit to my needs and practices.
- The enquiry-oriented paradigm emphasises the development of enquiry about teaching and about the contexts in which teaching is carried out. The technical teaching skills are not neglected but they are seen as a way to achieve the preferred outcomes in education. The aim of teacher education is to support teacher students in having an attitude, motivation and skills to execute reflective practice in terms of its effects upon learners, schools and working life as well as society in large (Zeichner 1983).

  The teacher students are seen as active actors and having ownership of the learning process with an open curriculum. In this approach the implementation of the teacher education programme is a negotiation process within the given framework of the curriculum and in the context of the particular teacher student group.

Kansanen (2006, 12) sees Zeichner's model as a form of hierarchy, in which the different paradigms follow each other and accumulate: the enquiry-oriented paradigm should consist of elements of all the other paradigms. Therefore, in practice all these forms of development are present. The teacher's professional learning involves not only the development and use of teaching activities in the classroom, but also the development of personal views and conceptions underlying their practice – pedagogical thinking in large.

Looking at oneself as a teacher requires deep reflection

It is widely acknowledged that reflection is a prerequisite for in-depth understanding of teaching and for furthering teachers' professional development. Whether reflection actually leads to deeper understanding depends on the extent to which it addresses implicit beliefs and values (i.e., practical knowledge) that underpin teachers' functioning (Eraut 1994). According to Kansanen (1995, 2) one interesting remark is that teachers very seldom speak about justifications or go beyond the action level. When asked teachers describe what they have done, and when asked more questions, they produce more detailed descriptions of what has occurred.

Thus, teachers' reflections are often narrowly focused on technical questions ('how to') and less on the underlying moral, political and emotional aspects of their functioning (Kelchtermans & Hamilton 2004). However, understanding teaching in context and rebuilding pedagogical thinking requires all forms of reflection. In technical-instrumental reflection the teacher asks questions such as, 'How did I modify my teaching to support the diverse student needs in the class?' or 'How did I guide my students to write reflective learning journals?'. The other three dimensions provide underpinnings for the technical-instrumental dimension. The moral dimension refers to questions about normative beliefs about good teaching, justice and responsibility; it may conceal issues of power and interests, which are addressed in the political dimension. They become evident in questions such as, 'Who does eventually determine what is to be assessed and how?' or 'How much do I actually let my students make decisions on their study process?'. Finally, the emotional dimension is related to the teacher's personal commitment to, and involvement with, teaching. Both positive and negative emotions are important for teachers' activities. When reflecting the emotional aspect the teacher is dealing with questions of stress and frustration, passion and satisfaction, fears and hopes, etc. (Tigelaar, Dolmans, Meijer, de Grave & van der Vleuten 2008).

Reflection on practical knowledge as teacher identity formation

When teachers explicate their personal practical knowledge on the basis of experiences, they in fact construct and re-construct their professional identity. Beijaard, Meijer and Verloop (2004) argue that teacher identity formation is a process of practical knowledge building characterised by an ongoing integration of what is individually and collectively seen as being relevant to teaching.

Professional identity formation is an ongoing process of interpretation and re-interpretation of experiences and should be an essential part of teacher education programmes as well as in-service teacher training courses. From a professional development perspective, therefore, identity formation is not only an answer to the question, "Who am I at this moment?", but also an answer to the question, "Who do I want to become?" Seeing professional identity as an ongoing process implies that it is dynamic, not stable or fixed. (Beijaard et al. 2004).

In re-building their professional identity the teachers might build sub-identities that are more or less harmonised (Beijaard et al. 2004). The notion of sub-identities relates to teachers' different contexts and relationships such as completing teaching tasks, RDI activities or projects with partners. Some of these sub-identities may be broadly linked and can be seen as the core of teachers' professional identity, while others may be more peripheral. It seems to be essential for a teacher that these sub-identities do not conflict, i.e. that they are well balanced.

Conflicting sub-identities might exist in circumstances where the teacher's working environment and tasks are rapidly changing. The teacher might feel that they face overwhelming expectations from other people such as students, partners and working life members, as well as society at large. Contributing factors to these expectations include the various role labels or metaphors that teachers have taken or have been given to indicate the change in the pedagogical approaches: teachers are nowadays not able to call themselves 'teachers', they are coaches, mentors, facilitators, co-learners, supporters, resource-persons, co-developers, etc. The terms 'teacher' and 'teaching' have been given such a strong connotation of behaviouristic and authoritarian approach that no one wants to use the terms any longer.

However, the terms themselves do not tell anything about the quality of a teacher's work – as the terms 'mentor' or 'coach' do not reveal anything about the quality of the mentoring or coaching activities. 'Teacher' is a general label for professionals working in educational contexts; the term teaching implies to the tasks of these professionals. Within teaching there can be many kinds of approaches and working methods, which can be called mentoring, coaching, facilitating etc.

Therefore, more important than renaming oneself with a new role label is to consider what kind of practice the new role in question requires and what kinds of pedagogical philosophies and principles it is based on. There is no point in changing the role name from a teacher to a coach, consultant, facilitator or another, if there is no consideration paid to what kind of practices the couching, consulting and facilitating are, and whether one has the competences needed in these new contexts.

To experience a change in educational practice is to take new positions (Kukkonen 2009) and to consider carefully:

- What is my position to myself as a teacher?
- What is my position to the other actors (students, partners)?
- What is my position to the focus of activity (teaching, learning, development)?

For example, should teachers have a different kind of relationship with students if they feel like co-learners compared to more experienced mentors? Should they relate themselves differently to partners in RDI activities if they see themselves as experts possessing the right knowledge compared to being co-developers and facilitators of the process? If the teacher wants to see him/herself as a co-learner with the students, the crucial questions are such: How can I change my role from a knowledge deliverer into an equal learner in the process? How can I change my controller position to show trust? What kind of freedom should I give to the students to make decisions over their study activities? How to take a more collegial position in supporting the student's professional development?

Teacher development as a social enterprise

To develop oneself as teacher alone in isolation from any professional community is a difficult process. Therefore, in recent years, teacher collaboration has been the focus of extensive research and development. Collaborative learning is at the core of communities of practice involving co-construction of meaning and mutual relationships through a shared enterprise (Wegner 1998). Accordingly, collaborative practices have been defined as being central to professional development because they further teachers' opportunities to establish networks of relationships through which they may reflectively share their practice, revisit beliefs on teaching and learning, and co-construct knowledge (Musanti & Pence 2010).

One of the perhaps more surprising outcomes of development projects has been that building a community of practice requires a long process of learning to collaborate. This remark is well illustrated in Musanti's and Pence's (2010, 79) empirical findings where a teacher summarises the position of collaboration:

"Collaboration is an art in itself and I felt like it required a whole process of learning new skills on my part. Working with a peer is a new way of looking at teaching. The need to listen to [one] another and integrate someone else's ideas is a neglected, but important, part of teaching."

When these collaborative abilities have developed teachers appreciate the importance of professional conversations as places to think with colleagues about what they were doing and why they were doing things, and if it worked, or if it didn't work and why.

Traditionally, teacher isolation has been confused with autonomy and independence. However, social interaction and interdependence are intrinsic to knowledge construction and learning. On the basis of their findings Musanti and Pence (2010, 85) challenge the myth that defines teachers as self-made professionals, an assumption that reduces professional development to an isolated enterprise. They also challenge the view that defines teachers as finished products, in need of occasional tune-ups to maintain their expertise, belying the social nature of continuing growth and development. The importance of human interdependence as a pathway to stronger and more knowledgeable individualities should be re-valued.

Collaboration challenges the existing school norms of individuality, privacy, autonomy, independent work and distribution of power. In spite of the positive results, however, collaboration is not always comfortable and complacent. Moments of conflict, tension and resistance should be expected and also welcomed. Learning and change involves some degree of disruption to what teachers know, and resistance can become a catalyst for in-depth reflection on what is taken for granted. Neither schools nor teachers are accustomed to collegial relationships embedded in their daily teaching and as a part of their professional development (Musanti & Pence 2010, 86).

Setting up and implementing peer development methods can be time consuming. Teachers must have time to meet, research and co-develop. Teachers also need time to observe their peers during the school day. Job-embedded development methods such as Peer Meetings, Peer Coaching, Mentoring and Reflective Teacher Groups are effective ways to promote teachers' professional growth and the quality of teaching and students' learning (See: Tigelaar et al. 2008).

The administration's role is crucial in encouraging and resourcing the staff development models (Musanti & Pence 2010, 86). The success of these approaches often depends on the working culture of the school: Is there a climate of collegiality? Do teachers feel comfortable taking risks and asking for help? Do they dare to open up the doors of their classrooms to a colleague or partner in working life? Teachers also need structural reflection models and must be trained to use them.

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Appendix 1. Tools to explicate and re-construct teachers' pedagogical thinking.

TOOL	DESCRIPTION
Verbalising Practical Knowledge	A storytelling assignment with questions such as: ▪ How do I see the students as learners in this vocational education? ▪ How can I relate my subject to the context of vocational studies in the field? ▪ What is difficult about learning the subject? ▪ What kind of pedagogical approaches or methods support the student's understanding and professional growth in the field of expertise? ▪ What kind of role should the students and I have in the study process? *The purpose is to explicate the practical knowledge behind teaching.*
Me as a Teacher	A metaphor assignment with an instruction: ▪ Describe what kind of teacher you are by a metaphor: "As a teacher I am like a …" ▪ Relate your metaphor to a learning theory or conception, conception of man and conception of knowledge stated in the curriculum of your school or stated in your personal teaching philosophy. *The purpose is to crystallise one's image as a teacher.*
Peer Couching	A professional development process with colleagues or fellow teacher students: ▪ A process in which two or more professional colleagues work together for a specific, predetermined purpose in order that teaching can be improved as well as validated. ▪ Can be utilised to share new ideas, to teach one another, to conduct classroom observations or to solve problems in the workplace. ▪ Is non-judgmental, and non-evaluative (Read more: Becker: Peer Coaching for Improvement of Teaching and Learning). *The purpose is to reflect on current practices or to expand, refine, and build new skills.*
Stimulated Remembering	A reflective recalling situation on the basis of a digital video recording of a lesson: ▪ The teacher watches the footage with a colleague, 'a critical friend'. ▪ S/he attempts to recall the interactive thoughts while teaching, and explicating the reasons behind the decisions. ▪ The critical friend assists the teacher to see the 'blind areas' in her/his thinking, and guides the reflection on technical-instrumental, moral, political and emotional dimensions. *The purpose is to increase opportunities to make more profound observations on the recorded lesson as well as to help the teacher see him/herself as an outsider and to recognise the pedagogical principles guiding the practice.*
Student Action Analysis	A reflective evaluation on the basis of a digitally recorded lesson, self-reflection or peer observation: ▪ What verbs describe your students' actual study processes? (Read more: Aarnio 2010). *The purpose is to evaluate what kind of cognitive processes and activities are actually possible for the students in the implemented learning environment.*

TOOL	DESCRIPTION
Voices Filling the Learning Space	A reflective evaluation on the basis of a digitally recorded lesson, self-reflection or peer observation: ▪ Evaluate whose voice (discussion) is the most dominant in the observed session. ▪ How much time is each individual student given to voice their opinions (i.e., how equal is the participation in the discussion)? ▪ What it the content of the discussion (i.e., how relevant is the content of discussion related to the topic of the lesson and student's professional development)? ▪ How the separate comments of the students are related to the previous ones (i.e., are the students really building a shared understanding)? *The purpose is to evaluate how many possibilities and how much time the students are actually given to express their opinions and ideas as well as what is the quality of the discussions.*
Parallel Planning	A planning approach to guide the teacher to anticipate how it feels to study in the planned study process and environments and what kind of learning is actually possible to take place: ▪ Study activities are planned and evaluated from the point of view of the actions of teachers and students. *The purpose is to help the teacher to evaluate the critical points in the student's study process and to provide proactive support.*
Learning Clinics on Practical Dilemmas	A peer development method where teachers with similar practical questions discuss and co-develop solutions: ▪ Each participant brings one practical dilemma or question to the meeting. ▪ The questions are discussed one-by-one; the owner of the question leads the discussion and makes a summary of it. ▪ Each participant is given an equal amount of time. *The purpose is to build a community of practice by co-developing practical solutions.*

The vocational teacher's changing role and identity in changing contexts

Säde-Pirkko Nissilä

Abstract

When professionals of any field of science or skills enter pedagogical education, they will have to negotiate their self-concepts as individuals, professionals and teachers. Vocational teacher identity is related to earlier occupational identity and is connected to pedagogical identity with conceptions of learning, teaching and personality. Identity is also concerned with emotions, self-knowledge and reflected experiences. Social group identities are construed through the feeling of belonging. Identities are dynamic, always 'becoming' and are constantly redefined over the course of time. They should be prospective, not referring to retrospective identities.

The citations from novice and experienced teachers' essays and interviews show that studying one's self-concept and verbalising one's self efficacy views are central in thinking. Transformative learning, networking with work life, expertise and teacher communities were felt to be important.

This article is illustrated by the research material collected at Oulu University of Applied Sciences in 2005–2012 from 25 student teachers who started their pedagogical education after their work life experiences, and from 20 peer group mentor teachers with their 77 mentees representing different subject areas (Nissilä 2006, 2007; Karjalainen & Nissilä 2008; Nissilä et al. 2011, 2012).

Keywords: collaboration, dialogue, dynamic, experience, transformation

Introduction

Recently there has been increased interest in how a vocational teacher's self is constructed and re-constructed through the social interactions that teachers experience in socio-cultural, historical, and institutional contexts.

Entering the practice of teaching requires novices to construct identities that fit into that world. During the transition from an occupation to teaching, via pedagogical education, novice teachers move between their self-concepts as professionals of their previous jobs and new identities as teachers. This process can be difficult, especially if the self-concepts conflict with one another. This article aims to draw links between the different identities of vocational teachers. First, the general features of teacher identities and their development are introduced and then the discussion moves towards examining special vocational teacher identities. Finally, some future-oriented views will be presented. The quotations used here to illustrate the professional self-concepts of novice and experienced teachers are from the participants' essays and interviews at vocational teacher and peer group mentor education at the School of Vocational Teacher Education at Oulu University of Applied Sciences.

The search for understanding teacher identity has often focused on teacher processes such as teacher knowledge and beliefs about teaching, practical arguments underlying their action repertoire, and their conceptions of learning and teaching, and their own personalities (Schön 1983; Calderhead 1996). Teacher personality and conceptions are important but the question is also of features such as intelligence (cf. Goleman 1999, Csikszentmihalyi 2006, 306) and empathy. Understanding vocational teacher identity requires the connection of emotion with self-knowledge, experiences and understanding, including the experiences of earlier occupations.

The construction of teacher identity is in essence affective and dependent upon power and agency. Investigating how teachers' emotions can become sites of resistance or self-transformation suggests attention to both the multiplicities and complexities of teacher identity and the situatedness of emotions (Kelchtermans 1996). Change in perspective happens through a combination of emotions, cognitive thought and the unconscious.

Traditional dichotomies suggest that there is a difference between the private and public dimensions. Also the assumptions that there is a singular 'teacher self' and an essential 'teacher identity', as implied in popular cultural myths about teaching, will be challenged. Instead, several approaches to the topic are intertwined (Bhaba 1987).

Individual and social self-concepts

An individual's self-concept is a teacher's perception of him/herself. It contains perceptions relating to standards of characteristics such as traits, competencies, values, beliefs and attitudes that the person has internalised. They make up who the person is, and will influence how the person interprets stimuli and behaves in response to them. The individual self-concept is a determinant of the satisfactory outcome s/he will seek to attain (Leonard, Beauveais & Scholl 1995). While being highly individualised on one hand, the conceptualisation results also from experiences throughout life and interactions with others. This suggests that others can affect individual concepts of self.

In a dynamic process of pedagogical identity formation, the teacher develops their pedagogical identity usually through several phases. First there is concentration on oneself, 'me as a teacher'. After this, there follow challenges in which the teacher confronts conflicting identities: prior beliefs are recognised and evaluated. When the knowledge base and reflection increase, the challenges of continued interest and motivation emerge. In the phase of consolidation teachers are realistic and ready to receive new challenges of change and development.

According to the social identity theory a person has not only one 'personal self', but several selves that correspond to widening circles of group memberships. Different social contexts may trigger an individual to think, feel and act on the basis of his/her personal, family or national 'level of self', Apart from the 'level of self', an individual has multiple social identities. They represent the individual's self-concept derived from perceived memberships of social groups (Hogg & Vaughan 2002; Karjalainen et al 2008). An individual can also have several professional identities gained through expertise in crafts and disciplines. A vocational teacher has thus the work identity of his/her earlier occupation, which might have been of long duration, and through it created a strong identity. Upon this s/he constructs pedagogical identity. Work identities, i.e. occupational and pedagogical identities, can be distinguished from the personal identity, which derives from the individual's unique attributes.

A teacher's professional self can also be seen as the outcome of a self-organising process in which personal impulses and a desired picture of the self are balanced. The context in which this self develops is related to the structure of an educational system of the type that gives teachers more or less freedom and authority in their profession. Dynamic identity construction does not, however, preclude the existence of particular traits in a person. On the contrary, the explorations try to reveal how different

emotions may interact and produce emotional behaviour that is different from what is normally expected. Researchers also suggest that the unity, predictability and stability of identity are illusions (Karjalainen 2007, 6).

There are various ways of expressing the components of identity. They can be spoken of as core identities or possible, provisional, situational and professional selves. Another classification is that of real, possible and ideal selves. The working self-concept, again, consists of three components: self-views, possible selves and goals and standards (ideal self images). Self-view reveals how a person sees him/herself in a certain context when comparing the demands of the situation and his/her capacities (possible self) to goals and standards. They are schemes that function in a certain context and in direct information processing. They create an ideal image of self to be attained and standards to which an individual compares the feedback given to him or her (Ruohotie 2004).

Possible self defines what a person might be and is compared to the ideal self. Future expectations and fears are connected with the self-view.

> I want to walk with my students a passage of life together; spending time on it does not mean wasting time. I would like to be more flexible. A good teacher is courageous; I am too, but that kind of courage is still too hidden in me. (Male, MSocSci)

The following quotation describes a real self-view and possible self:

> I learnt, however, how small I am and how much I have to learn about pedagogical things and building houses. I suppose I will never be fully competent, but by practising I will perhaps move forward. (Female, Engineer)

The ideal self-concepts of vocational teachers' previous occupations revealed that the absolutely most important characteristic seemed to be expertise; a teacher is an expert of his/her substance, with a duty of life-long learning and keeping vocational knowledge up-to-date:

> My ideal teacher is an expert in his/her field of science. Expertise provokes trust and creates enthusiasm for studying the subject. He/she updates their knowledge by studying all the time to keep pace with the development, and will not slumber in past knowledge. (Female, MA)

The desire to keep up expertise is often connected to the ability to integrate theory and practice. The ideal vocational teacher knows how to apply theory and, vice versa, understands which theory lies behind the practical phenomena. Theory and practise are intertwined and are applicable according to the students' needs:

> My ideal teacher has acquired considerable expertise over the course of time, and due to it s/he knows what s/he speaks about and what the things are based upon.
> (Female, Bachelor of tourism, catering and food processing)
>
> His/her expertise is on a firm ground, and s/he can give practical examples on any theme from daily life. (Female, PhD)

The control system regulates the emotional state and motivation by reacting to the possible discrepancy between (ideal) standards and feedback. The writer quoted previously goes on explaining her increased self-esteem and self-efficacy:

> [Being a female engineer] I won the boys' confidence gradually when I was able to explain things to them. I also noticed that they put me on trial by asking difficult questions, and the attitude was that 'you tell us now as you are supposedly a building engineer'.
> (Female, Engineer)

Identity theories argue that values are cohesive forces within personal identity. Conceptualising values as the core of one's personal identity leads toward understanding the cohesion experienced among one's various social identities. Values arrayed along the dimensions of self-enhancement and self-transcendence illustrate how a values-based conception of personal identity influences the formation of a role identity (Hitlin 2003). Role identities, in turn, form the so-called sub-identities.

It is agreed, though, that a self-concept is a highly individualised conceptualisation formed through selected internalisation resulting from experiences throughout life and interactions with others (Wood & Bandura 1989). This suggests that which was already discussed: others can affect the self-concept of an individual. Identification, again, is a perception of oneness with another individual which provides a system for self-reference (Ashforth & Mael 1989). Thus both identification and internalisation can result from the influence of an external stimulus, for instance, foreign experience. Only by becoming aware of his/her own otherness is it emotionally possible to meet other people (Kristeva 1992, 196; Levinas 1969). It also presupposes the cognitive understanding of the emotions of others and the meta-understanding of the whole situation.

The identity of vocational expert teachers

Researchers, like Deleuze and Guattari (1987), are concerned with how identities are constantly 'becoming', how they are constantly re-defined, suggesting the incompleteness of identity and a dynamic identity construction. Narrative stories of teacher lives provide accounts for dynamic interpersonal identity constructions that blur the boundaries between the personal versus social characters of identity formation. This process emphasises its affective character by providing meaning to experiences. Thus not only are emotions central in identity formation, but also our understanding of the multiplicity of emotions that are likely to be experienced.

> I have long work experience in the social science field, and am used to theorising practice. Still, I find many developmental tasks for myself, before I am an expert in teaching. I am uncertain in front of the group, and I can't necessarily react in the right way in problematic situations. I am afraid of periods of silence, although I understand that thinking and reflecting need time and space. Especially I find it difficult to be with young and lively students. Adult groups seem easier. I don't think too highly of my skills, for that reason I am open to feedback and able to make use of it.
> (Female, MSoc Sci.)

The above citation suggests the incompleteness of professional identity. Learning from experiences is based on subjective experiences that we have interpreted from our own viewpoints. Thus, we remember events once our minds have become aware of them and attached meanings to them. Since recollecting experiences can only take place in our consciousness and recollections are abstract, they can be given different meanings at different times and situations. This means that the same or similar experiences may seem different in different situations and life phases. It is typical of people to continuously seek for various meanings in their lives.

Personal self is the result of questioning meanings and rearranging them. Meanings bring forth attitudes and expectations concerning the environment, the self and personal action. However, it is difficult to know exactly how the information that people receive through their senses becomes an experience in the human mind. Experience is the result of a process that will hopefully lead to understanding. Interpretation and giving meanings are part of the process. These, again, are formed on the basis of earlier observations and expectations due to earlier experiences. Besides facts, the quality of experience is coloured by images and beliefs (Toskala 1989). Every experience prepares a person in one way or another to later experiences and thus leads to growth, continuity and new meanings of experiences. The process from observation to understanding is presented in the following figure (Figure 1).

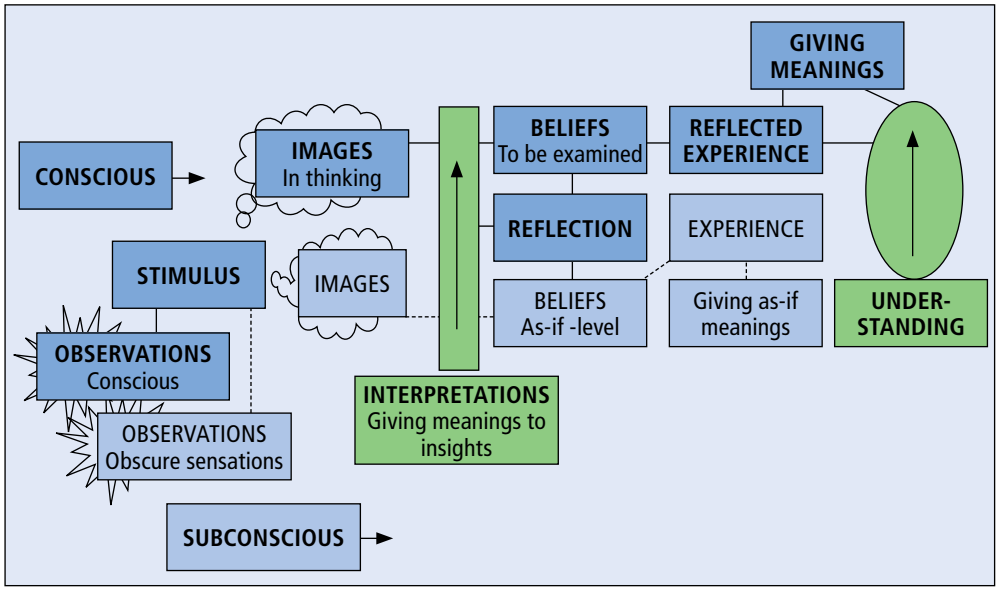

Figure 1. From observations to conscious experiences and understanding (Nissilä 2007).

Experiences do not only increase knowledge, but also touch and change personal identity. It is often social identity that undergoes changes, seldom core identity.

Beliefs that are connected to experiences will emerge continuously. They can be examined only when they have become conscious. Until becoming conscious, the beliefs are on an 'as if' level and people tend to perceive them as truths. When examined, they are liable to become more trustworthy. When one becomes aware of his/her beliefs, conscious thinking and intuition will be connected.

Reflection means an interactive process between earlier experiences, actions, personal theorising and understanding theories. Its significance is in making implicit things explicit. Schön (1983, 1987) originated the terms 'reflection-in-action' and 'reflection-on-action'. The former indicates the knowledge of professionals as demonstrated in their actions, maybe as reactions, the latter referring to the process of reflecting on their actions in order to broaden their knowledge. When used for planning, the third type of reflection could be named 'reflection-for-action'. Thus Schön distinguished between knowledge and reflective thinking. Knowledge is a state and reflection is a process by which knowledge can be acquired, adjusted and expanded.

Experiences without reflection (reflection-on-action) hardly teach anything. Reflection-in-action can be seen sequentially or intertwined with daily practice. Learning this skill means practising interactive and

interpretative skills on the spot when solving complicated and indefinite problems. In other words, it appears as 'reading' the situation in a new way, trying perhaps new actions, in a new framework. It is thus not reflection in the traditional sense, but is based on earlier reflection and situational sensitivity, and is sometimes called reaction rather than reflection (Eraut 1995).

Max van Manen (1995) introduces the notion of 'pedagogical tact' in which perceptiveness, understanding and feelings are instantly realised in action. He further believes that teaching possesses integrity on its own, and that being a professional involves more than the possession of technical skills (Ibid). It concerns the teaching of both young and adult students. The same conclusion appears in the following quotation:

> Pedagogical theory knowledge (…): planning, implementation and evaluation of teaching as well as some special areas of teaching were studied, but the holistic view of teachership and teaching is created and formed only during work experience. (Male, Engineer)

People often think that a long career makes a teacher an expert. However, it has been stated in many contexts that there are experienced expert teachers and experienced non-expert teachers (Tsui, 2009). Mere experience does not develop. Besides continuous reflection, a vocational teacher has to have an integrated, holistic perception of his/her work, develop his/her situational sensitivity, have the ability to problematise the unproblematic, look for challenges, engage in experimentation and exploration, theorise practical knowledge and interpret theoretical knowledge in practice. In general, an expert will engage in the kind of learning that extends one's competence (Tsui 2009; Nissilä 2006).

A teacher's professional identity means not only developing self-confidence or social acceptability, but also cognitive elements, which consist of occupational or disciplinary mastery, pedagogical competence, as well as the ability to exchange ideas in the communication habits relevant to different contexts.

Besides theoretical expertise and the ability of practical applications in building vocational teacher identity, the significance of working life contacts is increasingly important today. Due to the changes in vocational education in the last few years, practical on-the-job learning has received attention. Consequently, the contacts between schools and various enterprises and employers have become all the more important.

> (My ideal teacher) is aware of the demands of working life and applies the knowledge to his/her teaching. S/he continuously keeps up with time concerning both working life and teaching. (Female. MSocSci)

Teacher professionalism

A way of transforming individuals and communities of practice is reshaping the central aims and goals into a reflective capacity, critical-mindedness, other-directness, interpersonal attitude and pedagogical sensitivity. Novice teachers regard situational sensitivity and interpersonal skills as very significant. Other important characteristics are the ability to create a safe atmosphere in the learning situation and the ability to listen to students and appreciate them. These presuppose seeing the students as individuals and the ability to receive feedback. All these features can be connected to pedagogical thinking (Nissilä 2006).

Pedagogical thinking is here defined as decision-making based on personal belief systems and results from combined rational and intuitive thinking. It becomes concrete in planning, implementation and especially in the situations that demand immediate reaction. The term 'knowledge', in connection with personal knowledge, does not refer to an objective, scientifically proven knowledge base, but to teachers' individual constructions. 'Formal knowledge' is generated by educational researchers and 'practical knowledge of teaching' by teachers, as the result of their work experiences (Fenstermacher 1994).

The idea of transformative thinking in vocational education is that teachers should not load new information on learners in the blind hope that they will absorb it, but the learners should instead transform their previous knowledge and skills into something new. It promotes the idea that learners, or teachers, have to be encouraged to sharpen their critical thinking skills in order to be able to transgress epistemological limitations. They should be helped to see boundaries, whether personal or social, as constructed and move beyond them. This movement both empowers and transforms the individual.

Transformative learning is most likely to occur when teachers become personally engaged and perceive the subject matter to be directly relevant to their own lives. Understanding the diversity of learning and finding new meanings to their previous experiences are keys to enhancing the engagement. For learners to change their specific beliefs, attitudes and emotional reactions (meaning schemes), means that they must engage in critical reflection of their experiences, which in turn leads to a perspective transformation. Teaching at its best is igniting transformative learning (Mezirow 1991, 1995; Talvio 2002).

Collaboration for professional development means sharing power and mutual interaction. It presupposes common aims and interests, collective responsibility and coherent needs. It means a challenge in teacher

culture. Its significance is in the gradual construction of personal and shared collective knowledge and meanings as well as making implicit things explicit. The following experience concerns both collective reflection and consultation:

> As a student teacher in a vocational institute I was taken along to all activities. I felt I was welcome. I felt that I was in a unique situation when I was allowed to observe and learn from another teacher and her teaching. I also discussed with the students about their experiences in on-the-job learning, and I could hear many interesting stories about how working life teaches them. This adds to the reliance on a teacher, when the students tell willingly of their thoughts. (Female, B of Tourism, Catering and Food Processing)

In reality, things can be complicated. Beliefs are often deep-rooted and persistent. A significant issue in the change process is how a novice teacher views his/her professional identity, what kind of teacher s/he wants to be. Or the problems may be even more complex: the student teacher may be enthusiastic in his/her discipline (mathematics, science, economy, handicrafts, etc.) and finds his/her inspiration from it rather than from building and maintaining a relationship with learners. The problem may also be a limiting self-concept interfering with the development of a number of personal qualities. To get the process of identity development moving, it is not enough to reflect only on the environment, behaviour and competencies, which form the outer level, but to try also to understand the lived experiences and give meaning to them. The inner level should also be recognised and reflected on. The so-called onion model (Korthagen 2004) shows that the inner levels of reflection (beliefs, identities and missions) determine the way an individual functions on the outer levels (environment, behaviour and competencies) and allows also a reverse influence.

Promoting professional awareness and identity integration of vocational teachers

When starting their pedagogical studies, the 2nd or 3rd career vocational student teachers see the teacher's profession mainly as having sufficient professional competence ('doing certain acts well'), having a positive and rightful attitude towards the students as well as showing good interpersonal skills and situational sensitivity, self-esteem and the knowledge of teaching contents. This is clearly identified in the research material of beginning teachers, and mentees in peer group mentoring (Nissilä et al. 2011, 2012).

After gaining experiences in teaching and reflecting on them, the mentor teachers specify the components of teacher identity in a more conceptual, and thus more flexible, way. The emphasis is moved from single acts (what the teacher is able to do) to aims, targets, values and principles. The higher the relevance of the experiences, the more likely are they to aid involvement, motivation and enthusiasm (Nissilä et al. 2011, 2012).

Since work is an increasingly important environment for learning, new methods for supporting personal development in workplaces are needed. Experienced teachers can share their contextual knowledge and competences with newcomers in peer group mentoring. In this process mentors become strengthened and mentees heard. Peer group mentoring aims to solve professional problems together, setting future goals and supporting the growth of personality.

The social dimension of learning is thus, and is in many other ways, tied to community and practice and creates meaning and identity. Therefore, learning presupposes action and participation and converts both into experience and development. Although learning in the workplace is not always recognised as the primary source of vocational teachers' professional competence, it is highly relevant to students, student teachers and in-service teachers. The optional case is that after theoretical and practical studies, the dichotomy between theory and practice should be abandoned and a more seamless notion of professional development should emerge instead. Furthermore, occupational and professional (skills and pedagogy) commitments should blur the lines between teaching and working life expertise.

The present study aimed to investigate factors that contribute to variations in teacher identities and coping at various stages of their professional lives in changing vocational contexts. The supposition was that teachers' ability to sustain their commitment and resilience is influenced by their professional life phases and identities, mediated by the contexts in which they live and work. In other words, the idea of sustaining the commitment goes back to the conception of social learning in communities of practice (Wenger, 1998).

With these views in mind, sharing knowledge, practices and skills between newcomers and experienced vocational teachers appeared to be empowering to both parties. The expertise was supposed to dignify the 'wisdom of practice' and help open the doors to a professional learning community. New aspects were realised, especially in the work of mentors: supporting colleagueship, paying attention to the ethics of teachers' work and looking beyond the walls of classroom, i.e. understanding the school organisation as a systemic unit. In summary, two main aspects of

the development were highlighted here: what people learn by examining their practices, and how they learn to participate in local, national and international positions of teaching organisations, appeared very important to the concepts of self (Nissilä et al. 2011, 2012).

Under current conditions of change there are things to be conscious of and be avoided: retrospective identity formation emerges out of collective or individual narratives from the past and provides us with examples and criteria for the present and the future. Prospective identities are essentially future-oriented and may rest on narrative resources, but ground the identity in the future. They are launched by social movements and are engaged in conversation to provide for the development of their new potential (Bernstein 1996, 79). Prospective identities of vocational teachers point to collective action and professional development activities.

In times of rapid change the professional identity of vocational teachers cannot be seen as being fixed. It is negotiated, open, shifting, ambiguous, the result of culturally available meanings and open-ended power-laden enactment of those meanings in everyday situations (Kondo 1990, 24). Wenger (1998, 149) identifies five dimensions of identity. These are identity as negotiated experiences, identity defined through community membership, identity as a learning trajectory, identity as a nexus of multi membership and identity as a relation between the local and the global. These characteristics could be incorporated in any reconceptualization of professional identity. Identity and practice mirror each other in them, for developing practice requires the formation of a community whose members can engage with one another and thus acknowledge each other as participants (Ibid).

The core of vocational professionalism in teaching is an emphasis on collaborative, co-operative action between teachers and other educational and occupational stakeholders. A vocational teacher has a wide responsibility in a broad profession. The dialogue between persons, environments and cultures is constantly shaping and reshaping personalities, cognitive and metacognitive capacities, emotions, social competences and work identities.

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HAAGA-HELIA's Vocational Teacher Education curriculum process expressed through teacher student experiences

Annica Isacsson

Abstract

This article depicts the curriculum of HAAGA-HELIA's (HH) Vocational Teacher Education Programme, described predominantly through student experiences.

Two (2) teacher students were asked to write about their expectations and first-hand experiences at the beginning of their studies in autumn 2012, which form the base of this article together with four (4) student portfolios from spring 2012. Furthermore, the HH Vocational Teacher Education Programme Training Manager and the admissions office have also contributed background material.

The first section of this article briefly describes competence-based education, and also presents the vocational teacher educational curriculum and process at HH. In the second section some motives for applying to the vocational teacher studies are put forth. The third section deals with a reflection on competences and their implementation in practice as expressed by students. The fourth section forms a reflective epilogue.

Keywords: vocational teacher studies, competence-based education, curricular development.

Vocational teacher educational programme's curricula in evolution

The HH vocational teacher educational implementations take from one, to one-and-a-half years and consist of a total of 60 ects (European Credit Transfer System), with a total of 25 ects of pedagogical studies and 35

ects of vocational pedagogical studies. This article concentrates solely on vocational pedagogical studies, which are suitable for non-qualified teachers, working life experts and professionals interested in a career change. The 60 ects credit programme leads to a qualification to work as a professional vocational teacher.

Competence-based education can be described through the behaviouristic, generic and holistic approaches. Because of its detailed features, the behaviouristic approach cannot provide guidelines for an educational curriculum according to the likes of Barnett (1994). The generic approach has, on the other hand, been criticised for being too generic (Gonzi 1994). Hence, the holistic approach is seen as being most appropriate for competence-based education in vocational education and training (VET) as it has features of both the behaviouristic and generic approaches, i.e. it comprehends the entirety of knowledge capabilities, skills and attitudes displayed in a context with an appropriate level of holism (Hodkinson & Issit 1995). Competence-based education is applied at HH's vocational teacher education.

The pedagogical studies for vocational teachers are regulated by the competence objectives and qualification requirements set by vocational institutes or universities of applied sciences (Law on Vocational Teacher Education 356/2003) and by the Degree for teaching personnel qualification requirements (986/1998).

The basic operating principles at the HH School of Vocational Teacher Education involve a research and development-oriented approach to work, learning connected to work environments and contexts, interaction, collaboration and networking. In addition, common principles and practices at the HH School of Vocational Teacher Education form the curriculum: teacher ethics, holistic learning experiences, student oriented learning and a community based approach (Curriculum 2012–2013, pages 3–4).

As stated in a brief written by Training Manager Mika Saranpää (2012), the HH vocational teacher curriculum has taken an integrative form involving pedagogy, regional development and research and development (implemented in May 2008).

Saranpää (2012) states further that the curricular development process consisted of three phases. In the first phase vocational teacher students interviewed teaching professionals on future vocational teachers' needs and competences. In the next phase HH teacher trainers met with educational experts and working life professionals to discuss competences and needs. The third phase results from other countries, and reports from the European Union were studied from a national strategy point of view.

As a result the vocational teacher educational curriculum was divided into three thematic competence areas involving guidance and counselling, community and networking, and research and development. At the same time the HH vocational teacher educational counselling processes and educational acts were altered to conform with the new curriculum.

A value-based apprehension underpinning the curricular development work was to 'practice what you preach'. If the assumption is that future vocational teaching competence lies in guidance and counselling, communities and networks, as well as research and development, then HH's vocational teacher education should act accordingly. Another criteria was transparency, with the understanding that HH's vocational counsellors (trainers, educators) challenge vocational teacher students to evaluate the curriculum at their respective schools, at workplaces and in professional environments.

The HH vocational teacher curriculum can be viewed upon as the competence development space also for HH teacher trainers. Through its implementation teacher trainers are given the opportunity to observe their own work and development needs. At the same time teacher trainers can identify vocational development needs through collaboration with partners and society. Moreover, Saranpää (2012) states that by personalising vocational teacher education it provides an arena for observing collaboration and how co-operation is being organised.

During vocational teacher education at HH, collaborative interpretative meetings, or rather 'curricular gyms', are practiced. These are informal forums where teacher trainers construct joint expertise and shared competence. Moreover, these 'curricular gyms' enhance peer counselling (i.e. a forum for support) for discussing cases, to find solutions and to reflect upon own counselling practices (Saranpää 2012).

Upon graduation, vocational teachers should be able to guide their students as individuals and as groups. They should command the skills of acting in communities and networks. A vocational teacher should hence be all of a pedagogue, regional developer and a researcher upon graduation. During their studies, the vocational teacher gains insight into the teaching profession through practice and by visiting different kinds of vocational educational institutes. A professional vocational teacher's average age is 43 upon graduation and they have vast working life and professional experience to build their teaching upon (Saranpää 2012).

Below is an example of a vocational teacher student implementation consisting of ten (10) weekend meetings on Fridays between 4:30 pm – 8:30 pm and Saturdays between 9:00 am – 4:00 pm.

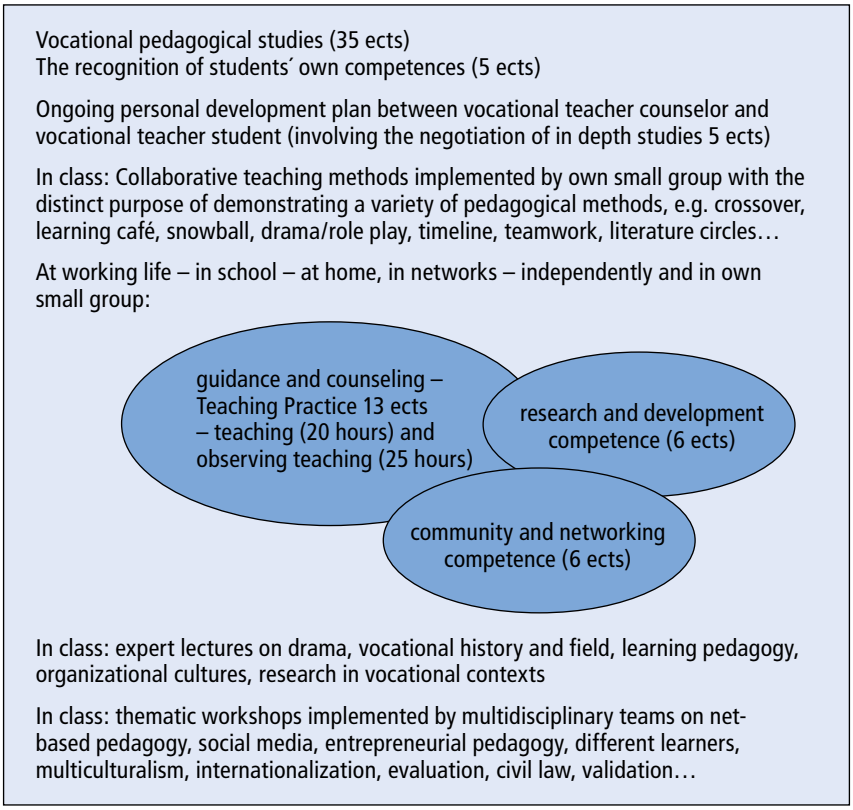

Figure 1. Vocational Teacher Student Implementation.

The teaching practice often takes place at the student's own school or other vocational institution. The peers observe each other at work.

The research and development task on the other hand is based upon an identified authentic workplace development need with the purpose of developing workplace processes, such as those relating to pedagogy. Community and networking competences are implemented through small group analysis on one or two commonly identified networks and/or communities. In depth studies can involve further studies related to professional development.

The HH vocational teacher curriculum is hence competence-based with a holistic approach, consisting of constructivist features and inquiry-based principles, as discovered by a teacher student in the following:

> The HAAGA-HELIA vocational teacher educational entity is built upon progressive inquiry-based principles, which meets well with the pedagogical challenges that a teacher encounters in her daily work. During the vocational teacher studies we were challenged to critically and divergently reflect upon our own teaching and our own role as a learner. Hence, I am a professional, but at the same time an actor who constantly learns new things. I am an adult learner and student, but also a teacher who teaches adults and youth. As a teacher with a constructivist approach, I can identify myself with the vocational teacher

> educational curricula. The recognition of my own strengths, development and focus areas were significant: every teacher has her own path to accomplish in order to qualify as a teacher. (Student 2)

Motives for application

In the year 2012 the HH School of Vocational Teacher Education received more than 1 300 applications, of which about 320 were accepted.

The students of HH's Vocational Teacher Education Programme are selected through a screening process. The criteria for teacher student selection involves formal education, professional work experience, pedagogical studies, work as a teacher/trainer and other special qualifications such as international experience, entrepreneurial/managerial experience, activity in society and educational development (Admissions Office 2012).

In the following, one student reflects upon the beginning of her studies, after being accepted as a student in spring 2012.

> The reason why I applied to HAAGA-HELIA's vocational teacher training programme was to gain more competencies for my competence portfolio as a professional in educational development. I have a Master's Degree in Educational Sciences from the University of Helsinki and I have worked in the field of international development projects for almost 20 years. The last three years I have worked in a University of Applied Sciences, and before that in the field of adult vocational education, as well as in development projects in developing countries. I have not worked as a teacher, but my work has always been in the field of education, in one way or another.
>
> Another reason why I applied to vocational teacher training was to obtain the formal qualification of pedagogical competence that is required in many vacancies in the field of education in general, and universities of applied sciences specifically. When having heard I had been accepted into the group of 320 students from 1 200 applicants, I felt lucky and thought that aside from gaining the formal pedagogical competence I will also learn a lot of useful tools and methods that I could apply to many situations in my professional field. I'm sure that I will also make a lot of new useful professional contacts while studying, as the learning groups are formed by individuals with different professional backgrounds. (Student 6)

Curricular reflections

Recognition of own competences

The studies commence with recognition of the teacher student's own competences. In order to recognise competences, descriptions of the competence areas for vocational teachers are given in the curriculum.

The recognition of one's own competences has an impact on the choice and execution of the development areas in the pedagogical studies (Curriculum 2012–2013).

This task is often seen as being crucial for the studies and recognition of students' competences, as we can see in the following:

> I found the first task of writing my own personal profile in relation to my studies and expectations very useful. Writing down who you are and what you have achieved and where you want to go from here turned out to be a useful exercise in understanding myself and clarifying my expertise and knowledge; most importantly, which areas of competence you want to improve.

> This being the basis for my studies I started to think about how I can best benefit from the vocational teacher programme in my current position. I decided that my student portfolio should be a lifelong process and so far it has given me insights into who I am and where my true passions lie in my working life. From this has sprung the idea for my development task. I want to combine my true passion for language training with communication skills training. The language and skills requirement of today's business world are increasing all the time. The language skills in a traditional, measurable way, i.e. reading, writing, speaking and listening, are no longer enough. In addition to a very good command of the language and the vocabulary of your profession you need to also focus on skills such as presentations, negotiations, debating and argumentation. It is cross-cultural sensitivity combined with communication skills. (Student 3)

> The analysis and development of the lifelong own teacher identity development, your own acts, and a critical reflection of your own attitudes are important. (Student 2)

The personal development plan

The personal development plan, which is drafted and negotiated between the teacher student and counsellor, forms the basis of the vocational teacher education studies. They all look different and are constructed and refined throughout their studies. The plan takes into account earlier acquired competences and development, along with the workplace, communities and networks. The personal development plan is an ongoing process that is updated and put into practice throughout the course of the teacher studies (Curriculum 2012–2013, page 3). In the following we can see one idea for a personal development plan.

> My written personal development plan will consist of developing entrepreneurial coaching and training for HAAGA-HELIA's teachers. Entre-coach is a project in which I have been involved in a European context within five European countries. The aim is to develop teachers' and trainers' coaching skills and further understanding within the field of entrepreneurship. Entre-coaches will coach students' who want to develop their own enterprises. (Student 6)

Working in teams

Because working in different communities and teams is one core competence of the vocational teacher, the teacher studies students will work in groups of various sizes and formats during their studies. In the beginning of their studies, they form teams of three-to-six people in which they study, complete and share joint assignments. The processes that take place in the groups and teams are also subject to assessment (Curriculum 2012–2013, page 3).

> I was positively surprised by the atmosphere that was created by our teacher trainers during our first day together. The teacher trainers were very supportive and inviting. We are, after all, individually responsible for our learning process but need to take advantage of the opportunities that we are offered through our fellow students. After a few moments of slight chaos, students started to form groups according to their topic of interests. I was very lucky to find a group with students interested in coaching, leadership and the wellbeing of your team. We all have a vast amount of both life and work experience and it is great to get together and exchange ideas and develop new methods. (Student 3)

> Up until now the best has been the team learning approach where we learn from each other and develop our learning as a group. I have also enjoyed the student-led approach as well as the flexibility of the learning process. (Student 6)

> The interactive skills and ability for dialogue are hence also of outmost importance for a vocational teacher. (Student 2)

Competences

The vocational pedagogical studies are based upon profession and work-related competence, which the teacher students have acquired through education and work experience. In the vocational teacher education the competences that were emphasised besides the content and substance were guidance and counselling competence, research and development competence, in addition to community and networking competence (Curriculum 2012–2013, page 3).

Guidance and counselling and teaching competence

The vocational pedagogical studies are based upon profession and work-related competence, which the teacher students have acquired through education and work experience (Curriculum 2012–2013, page 3).

The teaching practice emphasises the demonstration as well as the development of vocational teacher's guidance and counselling and teaching competence (Curriculum 2012–2013, page 20).

As part of the teaching practice, every teacher student has to follow the teaching of his or her peers for about 25 hours. Peer guidance and

counselling within the teams is a central feature of the teaching practice and its importance is acknowledged by one of our teacher students:

> The counselling approach is extremely useful, also from the view of professional development. (Student 1)

Research and development competence

The study module, Research and Development of Learning and the Work of Teachers, focuses on teacher students' research and development competence (Curriculum 2012–2013, page 24), and has become important in a vocational educational context as recognised by our teacher students:

> Research and development work are closely interconnected with each vocational teacher's profession and identity. (Student 2)

> During my research project I developed a workshop for lagging students. (Student 4)

Community and networking competence

In the study module, Teacher Activity in Communities and Networks, the focus is on the development of the teacher's work community and networking competence (Curriculum 2012–2013, page 18). The following are some of our teacher students' reflections in relation to this competence:

> The shared and horizontal ideas related to expertise made the networking theme more interesting and appealing. (Student 2)

> During my studies I have reflected upon and analysed different work and organisational cultures, both independently and as a team-member. (Student 2)

> During the studies we have familiarised ourselves with the problems of networking and communication in networks. (Student 4)

Outcome and epilogue

According to my interpretation and experience there are three aspects that make the HH vocational teacher educational curriculum and implementations extraordinary. Firstly, the individual teacher students' own competences, working life contexts and professional needs that they bring along with them to the studies form a base and allow individual study implementations. Secondly, all implementations are multidisciplinary, with the distinct purpose of sharing and creating multidisciplinary competences. Thirdly, the teacher students are treated as subjects and collaborative actors, i.e. as active producers of their own learning. Learning occurs individually, in small groups, through reading circles, in individual trainer student

discussions and in reflective social environments. The outcome of the studies is a professional portfolio and a vocational teacher qualification.

> During the vocational pedagogical studies the emphasis was put on reflection upon our own learning, and on the development of our own studies and work. (Student 5)

> Important and interesting outcomes for me were the discussions related to different learners, the versatility of learning and teaching as well as multicultural and international issues that were included in our implementation. Planning and evaluation were thoroughly handled, in addition to the pressing issues related to validation. The collaborative teaching methods were, all in all, central to our vocational teaching education. (Student 2)

> The education has broadened my horizon on education, learning and teaching combinations and diversity. The programme has offered the possibility to become acquainted with collaborative teaching methods. (Student 4)

The curriculum is open for interpretation, practiced through implementation. It has its pitfalls. It is challenging as it integrates many topics, themes, tasks and outcomes. For it to be successful it requires commitment from all parties involved as well as true, critical, deep and development-oriented reflection both among those training the teacher students and the teacher students themselves.

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Identities in transition – from an expert to a vocational teacher

Sini Juuti and Outi Raehalme

Abstract

The main goal of this article is to find new perspectives and further understanding of identity transition when becoming a vocational teacher. The main concepts utilised in this article are 'identity' and 'transition' by Wenger (1998). The transition from being an expert in one's own field to becoming a novice as a vocational teacher is a complex process where identity negotiation takes place. We aim to answer the question, 'How do vocational teachers describe their identity transition from an expert to a teacher?' by analysing the writings of 22 vocational teacher students. Qualitative material was coded and thematised using the technique of content analysis, and two typified cases were created. This article presents central themes in identity negotiations that participants have gone through during the first months of their teacher education and in their first years as a teacher.

Introduction

A theoretical but also deeply practical goal of this article is to characterise the identity work of vocational teachers. This article is inspired by the concepts of 'identity' and 'transition' by Wenger (1998). We seek to find new perspectives and understandings of identity transition when becoming a vocational teacher and aim to find answers to the questions, 'How do vocational teachers describe their identity transition from an expert to a teacher?' and 'How is this implicated in their identity work as vocational teachers?' Our specific focus is on how experts from different fields discuss the transition from working in their specific field to the study context within vocational teacher education, as well as working as a vocational teacher. We are also interested in ascertaining how this implicates their professional identities.

The findings of this study are based on analysing 22 different perspectives and personal study plans written by vocational teacher students during the first months of their studies in teacher education. Students described their own way of experiencing teaching as a career when writing a personal development plan for teacher education. They were also asked to write about backgrounds and reasons for applying to teacher studies, about the differences between teacher work and their previous work experience, and about the challenges of teaching.

At the time of the material collection participants had commenced their vocational teacher education and were entering the professional community of vocational teachers. Participants were at a critical moment in their career, as they were in the process of transition from being an expert to becoming a vocational teacher. The opinions of novice teachers constitute an especially compelling focal point for studying how the professional identities of vocational teachers evolve during the course of the transition. This is because transitions are characterised by intense identity work, involving the (re)alignment and reconciliation of multiple discourses and identity positions (Wetherell, 2006).

In the context of becoming a vocational teacher, it is typical for budding teachers to already have a long career behind them as an expert in their own professional field such as nursing and engineering, or, furthermore, working in management or consulting in their field. Thus, becoming a vocational teacher highlights the transition from being an expert to becoming a vocational teacher. In this context of transition, the process of becoming a teacher entails the negotiation of a significant complex transition from an expert to a teacher.

Becoming a teacher is often described in terms of passing through certain developmental stages and phases (for example, Järvinen 1999). Even if these studies have highlighted important aspects of becoming a teacher especially in the context of primary school, they are not very appropriate in the context of becoming a vocational teacher. Given this, there is a pressing need for research that helps us to understand how such significant transition from an expert to a teacher encountered as part of the process of becoming a vocational teacher, is characterised and construed by vocational teacher students themselves. This is because such transition constitutes significant 'sites' for identity work, being crucially implicated in vocational teachers' identity negotiations – how, for example, a master builder or master chef negotiates their own identity as a vocational teacher. Instead of looking at developmental stages, we find transitional periods especially interesting in the process of becoming a vocational teacher. Thus, instead of focusing on understanding the process of becoming

a vocational teacher through certain developmental stages, this study focuses on understanding the multiple dynamics of transition at hand.

This article is designed so that initially one teacher story is presented and in the context of this description the concept of 'identity' is discussed. Following this, a second teacher story is utilised seeking to understand what is meant by the concept of 'transition'. Teacher stories are typified descriptions of the students' writings. Thirdly, themes that are related to identity work and are brought up in students' writings are identified, such as early experiences of working as a teacher and experiencing responsibility in teachers' work. In the conclusion the concepts of identity and transition are discussed further.

Case Max – Identity flexibility in the context of insecure working life and teacher training

Max is a long-time specialist. He has 20 years' experience in his field and he has been a valued employee in all of his workplaces. Surprisingly, the company where Max had worked for seven years ran into financial problems and was forced to lay off all its employees in the department where he worked.

Becoming unemployed came as a surprise, but Max was not concerned about his future. He had always been able to choose his jobs, and he believed this to be so also now. However, the construction industry was in recession and this difficult time was also reflected in Max's situation and there were not as many jobs on offer as before. The period of unemployment did not last much longer in Max's case, as a teacher at the local school soon asked him if he would be interested in working as a teacher. The school was already familiar to Max, as it had earlier given him guidance concerning its trainees and apprentices at his previous place of work.

Teaching has never been part of Max's plans, but he was ready to jump in and try out new work, as he believed that having solid knowledge and experience in his own field was a good basis for being a teacher. The early stage of being a teacher, however, was tough: the transfer of his own knowledge to develop his students' skills was not a straightforward task. Also there were things that Max had to teach that he didn't feel he was an expert in and the administration and paperwork seemed unimaginably large. Max, however, was willing to face these challenges.

Contemporary theorising does not conceptualise 'identity' in terms of enduring individual characteristics or dispositions. Rather 'identities'

are construed as being complex and multiple, with identity work constituting an ongoing process of 'becoming', which is contextually situated and relational. Contemporary conceptualising of identity coheres with the changing and sometimes unsecure nature of working life, where continuous flexibility is needed. As seen in Max's case, the unsecure context of unemployment catalysed the need to educate Max to be a vocational teacher and that way (re)negotiate his professional identity. It seems in Max's case that negotiating his identity as a vocational teacher (besides his identity as an specialist/consultant) coheres more with the demands of contemporary working life, and this can lead to more opportunities to develop oneself as a professional teacher and also as an expert. From this point of view, the context of teacher education appeared to be of paramount importance to the participant's identity work as a teacher.

Identity work is seen as an improvisational accomplishment that is constituted in interaction within a community of practice and it involves the continual reproduction and transformation of both the community and self (Holland, Lachicotte et al 1998; Wenger 1998). Identity is constructed, negotiated and re-negotiated. Following on from this, people's identities are understood to be performative – that is, constructed and enacted in their talk (Abell, Stokoe et al 2004). The assumption, then, is that a speaker is active in identity work – which is an ongoing project that includes constructing a personal biography (Gergen 1994; see also Mishler 1999). Identities are, however, also social because they are both resourced and constrained by larger understandings that prevail in the speaker's social and cultural context (see Taylor & Littleton 2005). So, identity work is shaped by both the unique circumstances of people's lives and the meanings at play (including notions of how a life should unfold) within the wider society and culture (Taylor & Littleton, 2006). In Max's case vocational teacher education provided a context and forum for his identity work. This included, for example, writing one's study plan and discussions with other students as well as with tutors. These activities are planned to enhance students during their process of becoming teachers.

Case Anne – Identity transition and personal dreams

Anne has been a teacher already for three years and she is eager to take part in teacher education. Teaching has been one of her favourite fields for years – she even applied to teacher education for elementary school teachers after completing high school, but didn't pass the entrance tests. So now she is fulfilling her former dreams.

Anne has worked in the business world for 15 years. She was about to reach the most senior position in her field when she realised that in her new position she was expected to devote herself to things she wasn't really committed to doing. She was at a crossroads and decided to make a change: she applied for a teacher position and started a new career.

Anne feels confident with the teaching subjects themselves, but is unsure how to teach them. In her first year as a teacher she prepared power point presentations every evening and collected material for her teaching. She studied all of the content of her courses very thoroughly herself, but she noticed that she wasn't sure how well students had managed to do absorb the knowledge. She was happy to work with young people, because she found them interesting and challenging. She wanted to help them to learn and sought out new teaching methods for her classes. Ideas came to fruition when Anne noticed she had a colleague who was also interested in developing new ways of teaching.

From the perspective of Anne's case, it is difficult or actually impossible to separate the need for identity work from the context of transition. As in her case, transitions seem to be propitious for reassessing one's professional identity. It seems clear that the transition from an expert to a vocational teacher is leading Anne to create new narratives that embrace and privilege her own individual, unique and multiple ways of thinking and making choices, as well as trajectories. Within this context of change, multiple creative narratives are highlighted; these formed part of the process of re-defining and re-constructing her identity as a vocational teacher.

Furthermore, Anne's case shows how her vocational teacher's identity is negotiated for many purposes, also for an individual's life and personal purposes. As Wenger (1998) argues, professional identity is a dynamic relationship between life spheres rather than an isolated phenomenon that takes place only in the educational system or in the work context. For Wenger (1998), identity is not a single core; rather, it comprises different parts that can all be seen in the nexus of multi-membership. Wenger claims that in a nexus, multiple trajectories become part of each other, regardless of whether they clash or reinforce one another (Wenger 1998).

Why to commence working as a teacher?

Teaching includes status, which enables moving to other areas.

> During my unemployment period I attended training to update my knowhow in certain areas. During my training I was invited to work as a teacher at the same institute.

One's earlier career path might have ended because of external causes like in Max's case. For example, unemployment and job insecurity have created a situation where a person is forced to consider new options for their career. For these participants it is common that a period of unemployment is short, because they have worked hard to acquire a new job. The possibility of a career as a teacher has emerged from his or her own previous co-operation networks or through recruitment advertising. The demands of teaching do not seem strange to them because their previous work experience has consisted of consulting assignments or working at management level, which is seen as a suitable basis for teaching. It appears that 'realism' is an important reason to make the choice of becoming a teacher and that way to create new directions in one's career path. Younger vocational teachers with less career experience used realism and their own interest as reasons to legitimise their own career paths and their choices.

It doesn't seem to be crucial to one's career commitment whether one has been forced by external factors to forge new career directions or not. As a result of internal negotiation teaching has been able to be seen as a natural continuum for one's earlier career. On the other hand teaching can be clearly seen as an intermediate step between 'actual' work. In this case, the teacher qualification is primary seen as a tool that will enhance one's value in labour markets, not only with the teacher's work.

"I never applied to be a teacher, but I was asked"

Some teachers made a sudden decision to become a teacher when they more or less by chance were asked to teach. Eight of the 22 teacher students surveyed were asked to work as a teacher. They were valued professionals and masters and were asked to teach because of this value. The decision to change their field of employment was made quickly. However, weighing up whether to remain longer as a teacher takes more time. The pluses and minuses of teaching are compared to the good and less positive aspects of other fields. Applying to teacher education reflects some level of commitment to teaching, but some teacher students were doing it out of obligation to their employers.

> As a teacher I can share my knowhow and experience and I'm able to give something permanent to my students: good self-confidence and the feeling of success.
>
> I want to share my skills and knowledge with young people.

It is not so common that a teacher in vocational education talks about a mission or vocation. However, a mission was considered when some of the informants explained their reasons to start working as a teacher. Reasons behind their new career were described as an internal desire to do good, to help young people to grow and to have the possibility to develop into proper professionals. Teaching is seen as a profession where one can make the world a better place.

These internally motivated teachers appeared to have good self-confidence. They have succeeded in their previous career and know that they have a lot to share with beginners and to teach them. They also talked about humility, which is needed when serving/teaching others. To be an expert in one particular field doesn't necessarily make you one in the other.

New dimensions in identity: How to become a teacher?

> No need to concretely do physical work.
>
> This is managerial work without managerial mandates.

The nature of daily teaching work differs a lot from the work that teacher students are used to doing in their earlier career. One of the differences is the perspective on time:

> Long-term future planning in advance has been a great change compared to my earlier procedures.

Those in the business world used to plan their life in quarter years with plans made and evaluated every three months. In the field of education aims and goals are distant: educational goals are often defined in a way that they are difficult or impossible to evaluate in the short-term.

The image of what it means to be a teacher usually comes from one's own school and study experiences. Changes in the teaching profession and work descriptions have been considerable over the last 20 years. Teaching instruction, which during previous years was the sole task of teachers, still has a significant role, but by far it is not the only one. It is most often a

surprise for first-year-teacher to see that networking, research and development competencies are also demanded by the position. Teachers have particularly noticed the change, for example with the increasing amount of paper work. Sometimes it frustrates them and their common experience is that paper work demands too much of their time:

> Our primary work should be teaching.

Necessary bureaucracy is experienced on a great level and is frustrating. On the other hand, those who come from dynamic working environments find the dimensions of research, development and networking attractive, motivating and challenging. It is also an area in which they feel they already have competencies and can utilise their earlier work experience.

The core of professional identity lies in the certainty that one's professional and work-related competencies, working life skills and knowledge are in balance with the demands of work. In teaching, however, it is only the basis from where to begin: the teacher modifies his/her own knowledge to the suitable contents of teaching, analysing and changing it according to tasks, practices and so on. A newcomer to teaching, no matter what kind of master they may be in their professional field, in most cases turns out to be a novice in the world of pedagogy. Some of us take that as a challenge; some deny that there is any need for pedagogical knowledge. Regardless of which, it is a point where some kind of inner negotiation takes place.

> I'm used to being more demanding, with younger people there is a need to be more sensitive.

> It is a question of personality; it suits me.

> It is natural, intrinsic to me.

In some cases teaching seems to have ethical aspects, which fulfil some long-time needs. Teaching is taken as 'serving others' when it gives meaning to daily work. 'Serving' is understood on two different levels: firstly, it can be considered on a society level. The knowhow and knowledge that the teacher student acquired in their previous work, perhaps at a global dimension, is too valuable to be wasted. It is knowledge that is difficult or impossible to attain from literature. The owner of this kind of knowhow feels themself to be privileged having such education and work experience. Teaching the younger generation is akin to giving back to a society that initially made one's own education and success possible. Secondly, 'serving' can be considered on a personal level: besides all formal contents,

the teacher gives attention and input to students' personal growth and helps them with their personal problems.

> To be a grown-up for them.
>
> I face their problems and difficulties daily. I think students seem to have the most amazing problems today.
>
> To be present.

All teacher students have also worked earlier in demanding tasks, where they have had many kinds of responsibilities. However, many of them feel that as teachers they have more responsibilities than before or there are at least different kinds of responsibilities. Teaching is understood as human-related work where the consequences of their actions might be more serious. Even those teacher students who perceive their teaching work to be more subject-oriented, emphasise the importance of being an example and a role model for students. Many teacher students worry about keeping up their own expertise in their field. One of the main tasks for them is to solve the questions, 'How do I keep myself up-to-date with my expertise when I work outside my own field in a school environment?' and 'How up-to-date should I be?'

The everyday work of teachers has brought many surprises to newcomers in the field, but one opinion that is shared predominantly is the amount of autonomy in work.

> One reason for me to work as a teacher is that you don't have to work according to one 'ism'.

Freedom to teach and work the way you like gives you the desire to try your best. At the same time it seems unfathomable for some that no one is looking over their shoulder at what happens in their classrooms. While it suits some, others feel that they are left alone and don't receive the support they need at the beginning of their teacher career.

According to teacher students, the professional status of teachers appears to be quite high. Those who had previously been in leading positions in business or in administration thought that others see their status as being decreased. They don't care because they feel that they know better. But all teacher students coming from other fields feel that they are more valued and are proud to tell others that they are teachers. Respect and validation support the motivation to work as a teacher and to develop one's pedagogical competence.

Discussion

The transition from working as an expert to teaching seems to be of particular significance for the negotiation of teacher identity. The process of becoming a vocational teacher entails the negotiation of a significant, complex transition when moving from working as an expert/master to vocational teacher education and teacher practice. Our analyses show that within the transition from an expert to a vocational teacher, intense identity work is resourced by accounts of becoming a teacher and early experiences with working as a teacher. The extracts presented also exemplify how during the transition from an expert to a vocational teacher participants actively (re)construct and (re)configure their identities as vocational teachers. Notions of one's own inner teacher and work identity are in a process of intense re-construction and re-configuration.

Transitions constitute moments of unusually intense changes in identity. As Wenger (1998) points out, transitions demand significant transformations and as such may involve intensive identity work. A transition is a moment in which the person has to reorder narratives of self, a phase where individuals become exposed to new identity positions and new practices (see Wetherell 2006). Thus, transitions are points where a person is encouraged to rehearse new narratives and to use the associated understandings of identity to guide, define and organise new practices.

The transition from an expert to a vocational teacher appears to be influential in feeling agentic in respect to following their own interests, as well as personal values and missions. This agency was evidenced strongly in the teacher students' construction and re-construction of their own approaches to the teacher career – narrations and trajectories reflecting their own interests and choices as well as values and missions. Becoming agentic necessitates a continual balance between the individual and social. The process of negotiating one's professional identity was therefore implicated in the agentic construction and re-construction of holistic career trajectories (see also Wenger 1998, pp. 153–156) where subjects' personal interests and choices are of central importance. The transition from being an expert in one's field to a vocational teacher career seemed to offer clear opportunities for this.

Participants in this study emerged here as flexible and committed professionals who positioned themselves as vocational teacher students. Their expertise was not only based on specific subject matter. Their identity negotiations were based on being ready for diverse opportunities in order to move forward and negotiate one's identity as a realistic person, holistic and in balance.

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Changes in the job content of a teacher in vocational adult education and training

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The operating environment of vocational adult education and training (VET for adults) in Finland has become more and more challenging and multi-dimensional. Working life and changes in society are also reflected in the implementation of adult education and training, and the image of teachers' work is becoming increasingly diverse. Adult education and the number of students have grown and the methods of implementation and its contents have changed significantly.

VET for adults in Finland is carried out either in degree education, an open or composite degree in education or as preparation for competence-based qualification training. An important part of vocational training for adults is also a professional renewal, expansion and reassessment of continuing education, which should be organised within the framework of a competence-based qualification system (Ministry of Education 2012).

This article looks at vocational adult education teachers who are working with professional and pedagogical skills that encompass professional requirements, from a competence-based qualification perspective. We examine what kind of skills and requirements that the key principles of the adult-based qualification system are requiring for teachers' work. We also review what kind of learning environment and the opportunities that are offered to teachers to develop professional skills in a competence-based qualification system and degree-oriented education. First we look at the professional side of the teaching environment, and the changes there. Changes in society have significantly affected the training of vocational teachers and the job content.

Working content of a teacher in VET

A vocational teacher performs duties in organisations that are established by general educational institutions for competence-based students. In general, the job description includes vocational training and curriculum-based education for young people and competence-based education for adults. In practice, it means that the vocational education and training teacher needs to manage both the needs of the young people and the best education practices for adults.

Vocational education and training activities will increasingly be determined by co-operation with different networks and stakeholders. The vocational training is planned, implemented and evaluated in co-operation with representatives from working life. The co-operation between teachers and people from a variety of working places has increased the teacher's job content in the last ten years. Ostensibly this means that the individual teacher's lessons, teaching and guidance for students are increasingly conducted outside of the educational institution itself, in the workplaces. Vocational teachers' work has become more and more independent. The work is to a greater extent planning and focusing to achieve targets and co-operating with networks.

Curriculum-based vocational school is defined by the national qualification requirements and the curriculum approved by the school management. Training is carried out in close co-operation with representatives from working life and the first training period includes at least 20 weeks of work-based learning. Also, the basic qualification for assessment focuses on professional competencies to be carried out during periods of work-based learning and these are evaluated in co-operation with working life representatives.

Adult professional competence-oriented education is based on the national qualification requirements. It is stipulated that there has to be a signed contract for arranging competence-based qualifications between the qualification committee and education provider. This agreement includes roles and instructions that will be followed by both parties. For example, each student and graduate will have his/her own personal study plan.

Changing society – changing school

The adult education system and educational institutions have faced a variety of changes in recent years. These changes can be seen in the ways that adult education has been organised. Co-operation with working life

has increased and the importance of networks is more pronounced. The Confederation of Finnish Industries (EK) Services 2020 – Competences International Service Society's final report (2007) outlined the impact of changes in working life on education.

Within this report, teachers' needs and changes are described as direct reflections of society and working life. The changes in working life require new skills and learning from members of society to ensure that they are able to operate and maintain professional competence. The demand for adult education will increase. Professional adult education needs to be flexible to adapt fast to the changes with work. These changes highlight the importance of adult education skills in continuous development. The employee needs to alter the course of his/her career work and will be confronted with the possibility of needing to acquire skills for an entirely new profession. Multi-disciplinary expertise is valued, and allows a smooth transition between engagements. The aging population will also create a shortage of manpower. Furthermore, adult education must focus on immigrants in vocational training.

The vocational education provider network has changed over the last ten years. Vocational schools in Finland are predominantly owned by municipalities or joint municipal authorities. Education providers have become larger in size while the tasks they conduct are in many ways more diverse.

The educational enterprise resource planning systems and their regulatory mechanisms have also changed significantly in the last 20 years, which has also affected the individual institution's operations. We can also see these changes in education policy. Adult education can especially be seen in strong performance management-based education policy thinking, which is particularly evident in the changes in our operating education providers. These changes are particularly challenging to create new ways of teaching, as the conventional way of teaching is not as effective anymore. These new skills are, for example, networking and sharing knowledge in social media, online teaching and tutoring the learners. Today a teacher's role is more of a guide and supporter of the learning process. Teaching is seen more as a co-operation between a student and a teacher. Students are no longer educated for a specific job and profession only; they now need to possess wide-ranging skills. In adult education students have responsibilities to learn and make decisions concerning his/her studies. The teacher must be aware of the latest innovations in working life. This is why students must undertake training periods in companies in order to meet new practices.

Vocational adult education in Finland

Finnish adult vocational, further and specialist education is based on the competence-based qualification system, which was established in 1994. The basis of the competence-based qualification system was developed to offer adults a flexible way to show their skills and maintain professional competence. The main principles of the competence-based qualification system are tripartite cooperation, independence of preparatory training, a competence test in working life and individualisation. These principles should guide the planning, implementation, evaluation and development of the preparatory training for competence-based qualification.

The competence-based qualification system can be regarded as one of the largest Finnish education innovations in history. It is based on a new understanding of learning, development and training, and close co-operation with working life. The competence-based qualification system includes the idea of continuous development and internal quality assurance.

The competence-based qualification system's history is short, but it forms a very significant part of adult education. The number of competence-based qualifications has increased significantly. In 1996 there were 2 645 candidates for competence-based qualifications. There were 23 395 students in preparatory training for competence-based qualification in 1999. From this group 12 815 students graduated. Since then the amount of students has increased remarkably and in 2006 there were up to 60 000 persons involved in the system.

Each qualification has its own criteria that are set by the National Board of Education. Planning qualification criteria is always done with a tripartite co-operation. In practice this means co-operation between representatives from the employer and the employee side and also the education sector and stakeholders.

A vocational qualification can be reached both in adult education and by the training of young people. In addition adult education is also seen as a possibility for adults to change careers. The structure of VET qualifications consists of 52 vocational qualifications. These vocational qualifications include some 120 different training programmes. Further vocational qualifications and specialist vocational qualifications are meant for adults who are working and already have professional skills. Usually it means that a person has a qualification and s/he has over three years of working experience. In Finland there are 184 further vocational and 125 specialist vocational qualifications.

The National Board of Education has set each qualification degree its own committee, which guides and controls their operation. In accordance

with the principle of tripartite a qualification committee has representatives from government employers, employees, teachers and, where appropriate, the self-employed. A qualification committee makes agreements with educational institutions and educational providers. The purpose is to ensure the uniformity of qualifications and award diplomas. The committee's tenure is a three-year period. In 2012 there are more than 300 qualification committees.

Adult students often participate in preparatory training for competence-based qualifications where they practice their professional skills in theory and in practice at their own workplace. A person who already has a professional ability can perform a skills test. The competence-based qualification is usually performed modularly.

Specialist in competence-based qualification – an expert, a developer and an evaluator

A specialist in competence-based qualification training is specialist training in order to help develop the competence-based qualification system and co-operate with different actors. The programme specialist in competence-based qualification is determined by the National Board of Education. Training is organised by universities of applied sciences, for example, the HAAGA-HELIA School of Vocational Teacher Education. The first course was organised in 1998 and today there are approximately 11 000 specialists in competence-based qualifications.

The National Board of Education recommends that at least one assessor has completed specialist in competence-based qualifications training. The specialist in competence-based qualification training is given to the teaching staff, labour and interest groups. The training seeks to improve participants' understanding of competence-based qualifications and assessment skills. It is important that teachers who work in vocational adult education have completed the training.

Vocational adult education needs more employers who are certified specialists in competence-based qualifications. In autumn 2012 the National Board of Education allocated separate funding for representatives of working life in education, carried out by the professional vocational teacher training colleges. The aim is to increase the number of the working life representatives and certified specialists in competence-based qualifications and their skills related to the evaluation. Working in the competence-based qualifications system requires new kinds of work and co-operation

skills. The competence-based qualifications system forces teachers to act in close co-operation with working life. This can be seen particularly in planning, implementation and development. In addition, teachers are required to have a strong knowledge of guidance, as the teacher has to steer the employers, evaluators and members of the stakeholder groups. The co-operation challenges teachers' professional expertise on many levels.

New skills of teaching, guiding as tutoring and working in networks are required especially when you are acting as a specialist in competence-based qualifications. Vocational education teachers face challenges, as they learn and adopt the principles of the competence-based qualification system. Qualification activities have a lot of different players with different responsibilities and roles. The education provider's representative, who often is a teacher and a specialist in competence-based qualifications, needs to embrace continuous learning and the development of operations.

The principle of the tripartite – an enabler for working life orientation

Not only is tripartite the first principle in the competence-based qualification system, it is also the key principle in its structure and operational procedures. The tripartite principle in the competence-based qualification system means employers, employee organisations and representatives of the education sector work in close co-operation. This takes place, for example, when determining the structure of qualifications and examinations, as well as setting criteria for competence-based qualifications in planning, organising and evaluating. Tripartite co-operation extends competence-operations at every level. For example, the degree committees and education committee's assemblies are formed on a tripartite basis, which will ensure the quality and the principle of continuous development.

When organising competence-based tests industry co-operation is strongly emphasised. This is reflected in both the organisational level and in the individual teacher's job content. Career orientation and the employment needs of the individual should be paid attention to already when arranging competence tests. A competence-based test organising contract and the accompanying organisational skills test plan describes how the education provider will co-operate with the representatives from working life in different stages of the qualification. This agreement is legally binding and enforceable to both contracting parties.

In practice, the competence-based qualification will always be arranged in co-operation with the network, which includes the tripartite principle, at least three parties named by the examination teacher and the working life partner. For individual teachers, this requires the expansion of the traditional job to a networked approach. An adult vocational education teacher acting in competence-based education needs strong professional skills, the ability to create networks and a readiness for change. The teacher should be able to manage the process at the school together with the representatives of working life. This requires co-operation skills, wide experience and overall management skills from the teacher.

The tripartite principle maintains the interests of the various actors and contributes to ensuring the professional adult education implementation of the priorities and expected trends. Vocational adults meet the challenges of future skills. An anticipation of employment needs raises an increasingly important factor when planning education. One of the key results of the skills test is to aid with predicting the number of graduates over the next three years.

The education provider must define the local needs for getting the permission to offer the qualification. The organisational plan should also realistically describe the co-operation work, the competence-based qualification of planning and its implementation and evaluation, as well as the development point of view. This requires continuous contact with working life and the maintenance of quiet signals and response to educational means.

The anticipation of skills and training needs is becoming increasingly important in future. Vocational adult education needs to provide the flexible learning opportunities at work for a higher level of expertise. The number of participants in adult education must be adequate in order to match the needs of working life. This training is necessary, as forecasting requires close co-operation-based qualification at each level and all players being active. For example, secondary school graduates must have professional talent across the board, in order to anticipate a shortage when baby-boomers retire. On the other hand, older people will remain at work as long as possible. This requires additional vocational training in designing and implementing innovative and customer-oriented solutions.

A competence-based qualification – formal and informal learning

To learn and develop skills without formal training is the second key principle in the adult education-based qualification system. It means that the person's professional expertise can be recognised regardless of how the person acquires the knowledge. Usually professional expertise has been gained from work, education, training or leisure activities. The skills acquired through formal education and competence certification are at the same level as informal learning and work experience.

In the adult education-based qualification system a teacher must be able to compare the different ways of acquiring skills and help the students to understand what s/he already knows and what and where s/he has to go on studying. The teacher's role is to support the student's own knowledge to identify and develop the skills of self-assessment. This process will continue throughout the examination period. Participation in preparatory training is only one way to develop his/her professional skills. In addition, learning occurs at work and from partners and stakeholder networks.

Vocational adult education has a very important role in merging people of immigrant origin into Finnish society and working life. The competence-based qualification system offers immigrants an opportunity to show their professional skills in the case when, for instance, their previously acquired qualification documents are missing etc. Vocational teachers can be seen to be a key factor in guiding and adapting immigrants into working life. In practice, teachers are faced with challenging situations with immigrant adult students, for example, dealing with their often-tragic earlier life experiences, as well as social and economic problems. Cross-functional and multicultural competence is emphasised in future in teachers' work.

Competence-based qualifications ensure know-how – more practice oriented competence tests

The third main principle of the competence-based qualifications is a method for assessing vocational skills in authentic tasks and work processes. The performances of the competence-based qualifications are usually a part of the normal everyday working process. Each student's individual learning path will be scaled and planned according to his/her own work tasks.

The suitability of the working environment will be determined together by the teacher who is a specialist in competence-based qualifications, the student and a representative from the workplace, who normally is his/her

foreman. The working process equivalence is compared to the vocational skills requirement by the specialist in competence-based qualifications. If necessary, the specialist will consult the qualification committee before a skills demonstration will be organised. The authentic environment for skills demonstration is always approved in advance by the qualification committee.

The performances of the competence-based qualifications should normally take place at the worker's/student's own workplace. The specialist in competence-based qualifications will help to find the appropriate authentic environment if the student's workplace is not suitable for undertaking the qualification.

The student's skills are evaluated periodically. All teacher assessors must always have the specialist in competence-based qualification. Furthermore, the teacher must have professional skills of the occupation being evaluated. The specialist in competence-based qualifications must give the orientation for all the assessors before the performances of the competence test. The orientation will contain, for example, the National Qualifications Framework, qualification structure and the bases of the particular qualification, evaluation criteria, evaluation methods and individualisation.

The contract for arranging competence-based qualifications requires that the assessor will follow all of these basics. The assessor must be enthusiastic and committed to the task. The specialist in competence-based qualifications will resolve any disqualification of the assessors. The disqualified assessor might be, for example, a close relative or the teacher who has been in charge of the preparatory training.

The performances of the competence-based qualifications should usually be normal work processes that will demonstrate the qualification criteria in practice. The teacher assessor will collect all documents in case there are any. The teacher will also observe the work process and interview the student. S/he will organise assessment discussion after the performances. The assessor who represents employees will monitor the work process, customer service and essential technical skills. The employer will evaluate how the candidate follows the company's business idea and general directions.

After the evaluation performance the candidate will conduct a self-assessment and receive feedback from the assessors. However, the candidate cannot be influential in his/her own assessment. Finally, all three assessors will hold an assessment discussion and decide on the final grade. The qualification committee will confirm the assessment and grant the graduate a certificate.

Individualisation – individual learning paths

The competence-based qualification system's fourth principle is individualisation, which means that the educational provider supports the adult student and candidate with guidance, counselling and implementation. The education provider's responsibilities are to take care of their needs during the whole process.

Individualisation is based on the vocational law (L631/1998). The National Board of Education has issued a separate regulation on individualisation. Education providers have to co-operate with the vocational institute's organisers, suppliers of education, workplace representatives and other relevant experts.

It is the education provider who is responsible to make sure that the adult student and candidate is guided as well as possible. Usually responsible for guidance is a mentor teacher or group leader. Working with adult students and candidates who are completing the competence-based qualification requires good skills and knowledge of working life, as well as good abilities to teach and guide.

There is a contract that determines the rules for arranging competence-based qualifications and its contents, including the plan for arranging competence tests. The plan is very important to document, as it describes who is responsible for creating the plan for the individual adult student. It also describes how much time is reserved for the guidance and how the guidance is implemented in practice.

The individualisation is divided into three phases:

1. The skills required in the acquisition plan.
2. Completion of the qualification plan.
3. The skills required in the plan.

The application stage is the most important phase. Here the education provider, the applicant, the workplace and the representative of the financier make choices and decisions that affect the whole process. In the application stage it is determined whether the degree is suitable for each applicant. It is to be checked that his/her working place is suitable as an authentic environment for skills demonstration. The application stage must also ensure that the applicant's work tasks and processes are such that s/he can develop their skills by learning during his/her own work.

It is very important to identify the applicant's know-how in the application stage. This means that if one has earlier passed a part of the exam, this can be recognised to be a part of another exam by the qualification committee. The adult student's personal plan will be based on

his/her previous knowledge and working experience. Identification of prior learning is of great importance throughout the qualification and personal graduation plan and question of funding. The total studies can have different lengths depending on the scale of each student's skills.

Vocational teachers often help the students in the application stage because the teachers are usually involved with the industry and have job-related skills and understand what kind of knowledge the qualification requires. A professional instructor is frequently involved in the assessment of the applicant's skills such as tests results, interviews and work samples. In the application stage it is very important to collaborate with representatives of working life, the employer, the financier and any other professionals, such as other teachers or special interest groups' representatives. This requires that teachers have the co-operation skills and ability to discuss and guide the different actors. People who are responsible for the application stage need to have a good understanding of vocational adult education and training and the execution of the limits and regulations.

Immigrant applicants need to sit the Finnish language test. If necessary, they will have to receive training in Finnish language. The application stage also takes into account the degree of language proficiency requirements. The candidates are interviewed in order to identify possible learning difficulties. Those adult students who have a different cultural background are offered further training in language and knowledge of Finnish working culture.

Completion of the qualification plan will be initiated as soon as possible after the training has commenced and it will be made in co-operation with the students and teachers. In the completion of the qualification plan the student designs a plan of where, when and how s/he shows the skills in his/her own work. Completion of the qualification plan also describes how the candidate documents his/her own work. In addition, the candidate will make a plan about who will make the assessment and at what stage.

Completion of the qualification plan is prepared in co-operation with the student, the education provider's representative and the representatives of the workplace, for example, with the line manager. It is important that the competence-based tests are carried out in real life situations, such as in a customer service/care setting. The education provider's representative has the responsibility to ensure that the qualification events are planned in accordance with the qualification criteria. The acquisition plan will be started immediately at the beginning of training. The student will be informed of what kind of skills s/he must develop before the competence test.

For the acquisition of the skills required the student will describe what kind of development s/he needs and in which studies s/he will participate.

The student will also report on his/her networks, working partners and acquired studies and skills. The acquisition of the required skills shall be done in close co-operation with the student's workplace instructor. The plan of individual studies will be updated throughout the training.

Vocational teacher education prepares to future skills

The competence of vocational teachers and its development can be reviewed from many different perspectives. The curriculum of the HAAGA-HELIA School of Vocational Teacher Education pedagogical studies is based on professional and working life skills and professional pedagogical skills. In this curriculum, the teachers' professional pedagogical competence is divided into three areas: instruction and teaching excellence, community and networking skills, as well as research and development know-how.

The development of vocational teachers' professional skills is integrated in continuous learning and progress. The HAAGA-HELIA School of Vocational Teacher Education's curriculum describes the work of vocational teachers as being 'design, implementation and development'. This will occur as a collaboration network with one's own institution and partners. Vocational education is seen as being open and transparent for researchers, funding agencies and regional developers. With their help it will be possible to evaluate the activity and increase the impact of education.

What kind of opportunities are there for vocational teachers to develop competence-based qualification and its various actors? A vocational competence is often emphasised in working life skills, a customer-orientated approach and teaching and counselling skills. Teaching and learning can exist outside of classroom environments and relies on multiple learning opportunities evident in our distributed information culture.

Skill and competence requirements have been converged in the different fields of the industry. These shared skills have led towards flexibility in the competence-based qualifications. A trend for module-based preparatory training is offering better opportunities to respond to working life challenges. On the other hand, the wide module-based qualifications demand deeper expertise from teachers. Particularly, a teacher in specialist vocational qualification requires deep professional knowledge and management skills. Working life has the duty to organise occupational training, such as expanding on-the-job training and updating the qualification structures. This contribution is continually strengthened by guidance counselling and quality improvement at the workplace.

The development of workplace skills is no longer seen as merely guiding on-the-job training. The workplace must be profoundly considered as a learning environment. The teacher must be aware of the working culture and requested competence. High-quality work-based learning requires co-operation and good skills from teachers and tutors.

The vocational qualification must include more individual training solutions due to the students' diversity. Instead of teaching, the core is the development of learning and skills, as well as individual ways to achieve this. The individualisation can be seen as multi-professional networking and co-operation. Teaching now involves more network connections. Nurturing and maintaining connections is needed to facilitate continuous learning. There will be exciting times ahead for educators as the dream of learner-centred education moves daily closer to reality. Driven by the development of social learning theory and the advancement of participatory web technologies, new opportunities are rapidly becoming apparent. Learning theories, such as constructivism, social constructivism, and more recently, connectivism, form the theoretical shift from instructor or institution-controlled teaching to one of greater control by the learner (Siemens, 2005).

Now vocational education has moved away from hierarchy and classrooms. Many of the assumptions that influence current school design are challenged when learners and educators have the ability to form global learning networks outside of the realm of traditional education. It is challenging for vocational education to implement education for immigrants in language, culture and skills. Different learners have different needs. Some prefer a high degree of social interaction, while others prefer a more individual approach. Learners who are more comfortable with self-regulation are free to explore subject matter and content in as flexible an approach as they desire. The networks and mobile technology will facilitate these challenges.

The recognition of previous studies and competence is becoming increasingly relevant. In future, all studies and expertise are recognised by all of the member countries of the EU.

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Supporting learning and professional development

Work-integrated learning in Finland – a conceptual overview

Annica Isacsson

Abstract

Education in Finland is in a process of change due to the demands that the knowledge society, globalisation, learners' new ways of acquiring information and the changing requirements of working life represent.

One way of ensuring that the competences acquired in educational institutions are in line with the competences required by the working life in future is through intensified collaboration between educational institutions and companies, thus enhancing work-integrated learning.

Work-integrated learning can be argued as dealing with more than just work placement, as it also deals with the recognition and acknowledgement of the social/situational, contextual, collaborative, implicit and tacit aspects of knowledge and skills. The question in work-integrated learning is hence not only from an educational point of view about when learning occurs, or how to be in a situation or context of practice, but also about how to transfer, exploit and make explicit the tacit norms and underlying patterns, skills, know-how, routines, praxis and behaviours from one place to the next and from one situation and person to the next.

This article offers a conceptual overview of the state-of-the-art of vocational work-integrated learning in Finland.

Key words: work-integrated learning, work-based learning, workplace learning, on-the-job learning, work experience, practical training

Introduction – vocational upper secondary and higher education and training in Finland

Vocational education and training (VET) in Finland refers to training provided by upper secondary level vocational institutions, adult education institutions and apprenticeship training.

The higher education system is 'dual' in the sense that it comprises universities providing academic and more research-oriented education and polytechnics providing programmes which are more practically oriented and more closely connected to the world of work (Cedefop 2001); or as the Finnish National Board puts it, universities of applied sciences are more oriented to the needs of business and industry (Finland in Focus). Universities of applied sciences (UAS) offer education mostly on the bachelor-level and are oriented towards vocational and practical education (Universities of applied sciences Finland). Hence, even though universities of applied sciences polytechnics are vocationally oriented they do not fall under the VET category as defined by Finnish authorities, but under higher education.

In Finland all publicly funded education is subordinated by the Ministry of Education and Culture. It represents the highest authority and is responsible for the strategic and normative steering of VET and of Finnish higher education.

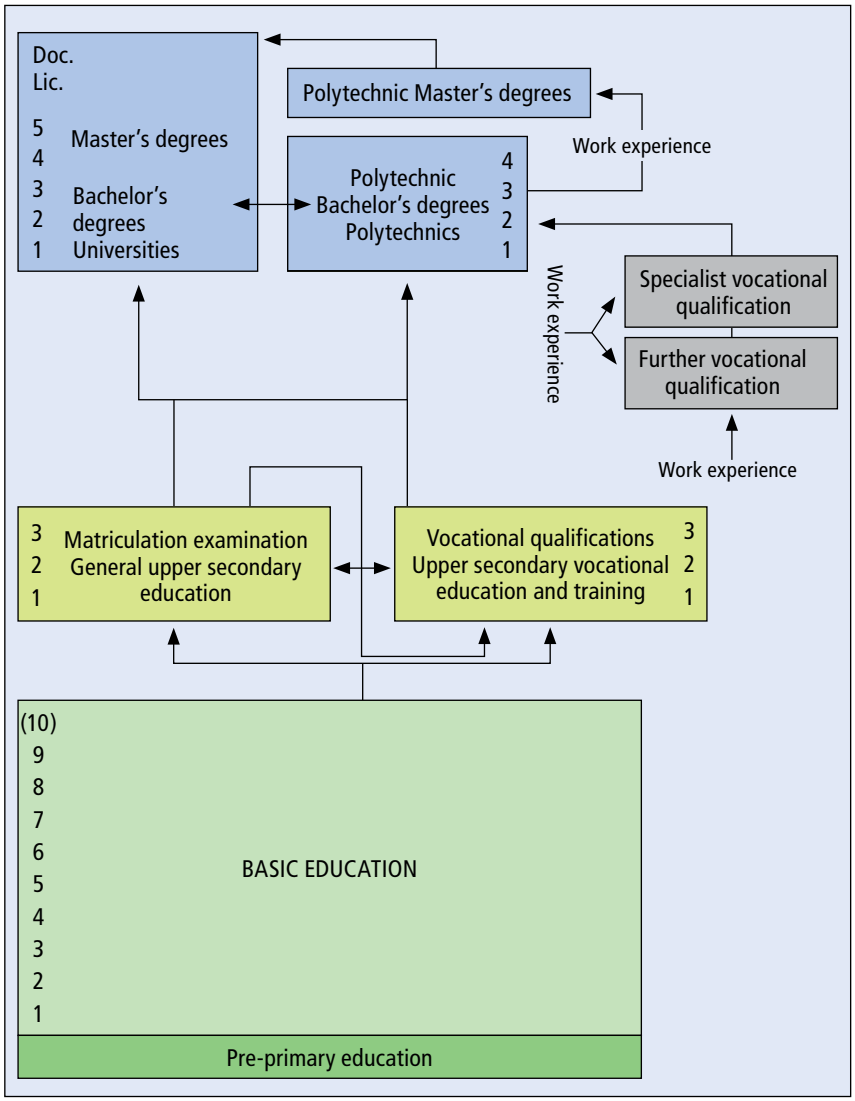

Figure 1. Finnish National Board of Education.

Vocational education and training for adults can be divided into upper secondary (initial) and further vocational education and training. The training may lead either into a certified qualification or be non-formal. Vocational training in upper secondary schools leads to a certified qualification, whereas further vocational training may fall under either category.

A variety of measures are available to adults to maintain and enhance their competencies and to study for qualifications or parts of qualifications: in-service training, apprenticeship training, the competence test system and adult employment training (Finland in Focus).

After completing upper secondary education (general or vocational), students can apply for higher education. Unlike universities, UAS focus on R&D (research and development) by applying previous knowledge, rather than producing new research. The term 'ammattikorkeakoulu' in Finnish literally means 'school of higher vocational education', however the Rectors' Conference of Finnish Universities decided upon the term 'universities of applied sciences' (ARENE). UAS have a very clearly legislated objective in regional development and a mandatory five-month practical training (30 ects/European Credit Transfer System) for all students. There are about 100 000 students in UAS. The most common field of education is engineering. Other typical fields of study are health care (nursing), business and culture. The bachelor degree consists of 210–240 ects and education lasts from three-and-a-half to four years (Universities of applied sciences Finland).

Vocational education and training in transition

In Finland, vocational education and training (VET) has until recently been strongly school-based, with only short, often unguided practice periods (Virtanen, Tynjälä 2008/2, 200).

In 2001, however, the Finnish VET system was reformed: curricula were revised and vocational study programme lengths were extended to three years in all fields comprising compulsory, systematically organised, guided and evaluated on-the-job learning periods (lasting at least six months). In addition, the present legislation of Finnish VET requires that vocational institutes co-operate with workplaces. There are certain requirements for what students have to learn at the workplace during each on-the-job learning period. This is one of the areas where the new system differs from former workplace practices. Another difference is in the systematic guidance of students at the workplace (Virtanen, Tynjälä 2008/2, 200).

Thus, nowadays vocational education and training providers are responsible for organising training in their areas, for matching provision with local labour market needs and for devising curricula based on the national core curricula and requirements of competence-based qualifications (Finland: Vet in Europe – Country Report, 34).

Formal vocational education and training comprises upper secondary vocational qualifications, further qualifications and specialist qualifications. All three types of qualifications may also be completed as apprenticeship

training. Apprenticeship training is available both to adults and to young people (Finland: Vet in Europe – Country Report, 35).

The scope of upper secondary level vocational qualifications taken after basic comprehensive education is three years (120 credits). Even if the education and training mostly takes place in institutions, all qualifications include at least 20 credits of instruction in the workplace. Vocational qualifications may also be completed as apprenticeship training, which also contain courses arranged in the institutions. In Finland, most of the apprentices are adults. The majority of the youngsters complete their VET studies in the school-based education (Finland: Vet in Europe – Country Report, 35).

Guile and Griffiths (2001) analysed the forms of organising VET in Europe and how students' work experience has been used in VET systems.

They identified five models of work experience:

- The traditional model: students are merely launched into the workplace, and they have to adjust to its requirements. In this model it is assumed that learning takes place automatically, so there is no need for any special guidance or help. Instead, workplace experience is managed through traditional supervision. There is only minimal co-operation between vocational institutes and the workplace, and there is a sharp division between theory and practice.
- The experiential model: in this model, and according to experiential learning theories (Kolb 1984), reflection on the work experience has an important role in the learning process. The social development of students is also emphasised. Therefore, it is necessary to develop pedagogical practices that support reflection and conceptualisation. Consequently, co-operation between vocational institutes and the workplace is essential.
- The generic model: work experience is seen as an opportunity for developing generic skills needed in working life. Students collect material for their personal portfolios to show their development with acquiring key skills. They also take part in assessing their skills. The teacher's role is to ease this process. The relationship between theory and practice remains unclear.
- The work process model: students should develop a holistic understanding of the work process. The intention is that students learn skills that can help them work in different work environments. The model requires integration of theory and practice, and hence collaboration between vocational institutes and the workplace is important.

- The connective model is presented as an ideal way to organise workplace learning for students. The core of this model is the 'reflexive' connection between formal and informal learning, and between conceptual development and developing the capacity to work in different contexts. The idea is to resituate learning in a way that requires integration of conceptual learning and work experience. The aim is to develop polycontextual skills, which help students towards 'boundary crossing'; that is, the ability to work in changing and new contexts. This requires close co-operation between vocational schools and workplaces, and therefore the central role of the education and the training provider is to develop partnerships with workplaces to create environments for learning. One difference between the work process model and the connective model is that in the former it is assumed that work experience itself promotes work process knowledge, whereas the connective model emphasises that it needs to be mediated. This can be done, for example, by introducing concepts and subject knowledge, which can take place at the workplace (in Virtanen, Tynjälä 2008/2, 202).

The experiential and traditional models are the most common ones applied in Finland.

Conceptual understanding in this field

On-the-job learning, work experience and/or practical training in Finland refers to the same thing, i.e. a learning method building on the objectives of the curriculum. It aims to take the needs of both the student and the workplace into account as broadly as possible. The student can establish a personal contact with real work and, correspondingly, the workplace receives the opportunity to influence education and training and, in due time, gains employees better prepared for practical work than before. The aim is to ensure vocational skills that stem from working life needs and to promote students' employment opportunities, as well as to facilitate the recruitment of skilled labour into enterprises and other workplaces (Finland: Vet in Europe – Country Report; 41).

Jean Lave and Etienne Wenger (1991) introduced a new way of understanding learning in 1991 through the concept of communities of practice. Originally it was used in the understanding of situated learning processes in organisations, but has also become quite influential in participatory design as a way of understanding relations between different groups of

users in a specific context (Wenger 1998). The concept situated learning (Lave and Wenger 1991) is not a pedagogical strategy, learning technique or a theory of learning – it is a way to understand learning. Learning is seen as a social process that considers individual needs in addition to the learners' cultural background. Subsequently, learning always occurs in a specific context in relation to others.

As Brennan and Little have observed (2006), work-based learning has increasingly become an area of interest for the higher education sector (HE). It is seen as a means with which to support the personal and professional development of students who are already at work and the focus of the learning and the development tends to be on the student's workplace activities.

Bragg and Reger (2000) observe that work-based learning specifies work-related learning opportunities unique to the workplace that enable students to apply the academic and occupational knowledge, skills and attitudes they have obtained in the classroom.

Work-integrated learning (WIL) can be argued to be dealing with more than just work placement, as it also deals with the recognition and acknowledgement of the social/situational, contextual, collaborative, implicit and tacit aspects of knowledge and skills. WIL can also be phrased and understood as 'learning how to be', i.e. learning how to be and act with one another in a specific community of practice. Learning can occur during a training period, but also in a working life-based project. The question, however, from an educational point of view is not only when and how learning occurs, or how to be in a situation or context of practice with others, but foremost about how to transfer, exploit and make explicit the tacit norms and underlying patterns, skills, know-how, routines, praxis and behaviours, i.e. how to develop polycontextual skills.

WIL is accepted by both employers and the higher education sector (e.g. Work integrated learning 2011) with the following rationale:

- Academic benefits, such as improved general academic performance, enhancement of interdisciplinary thinking, increased motivation to learn.
- Personal benefits, such as increased communication skills, teamwork, leadership and co-operation.
- Career benefits such as career clarification, professional identity, increased employment opportunities and salaries, development of positive work values and ethics.
- Skills development, including increased competence and increased technical knowledge and skills.

Dewey (1938) was one of the first educational theorists who strongly believed that people learn by doing, and that all genuine education is achieved through experience. Dewey did not only believe in learning by doing; his notion of 'vocation' as a calling to a deeply felt and ethically grounded identity within a chosen career encompasses the importance of critical and scholarly engagement with the key issues of public life that link professional and vocational competence. Subsequent theorists, such as Kolb (1984) have similarly pointed out that while 'experience' is a part of learning, it is not, on its own, a sufficient condition for learning.

Donald Schön (1983) points out the importance of reflection and reflective practice in the education of professionals. More recently the theoretical underpinnings of Kolb's experiential learning cycle and Schön's 'reflective practitioner' model have been challenged. People do not necessarily learn from experience, or from general reflection, particularly if they do not think critically about it or do not take responsibility for its creation. If such learning is seen only as a vehicle to gain information about the workplace and to link technical knowledge with workplace application, then its effectiveness is not fully developed.

Practice, workplace (WPL) or work-based learning are thus seen as forms of work-integrated learning that stem from the higher education field whereas on-the-job learning, work experience and/or practical training, in addition to apprenticeship, stem from vocational upper secondary education. The challenge with all of the forms is to identity the right balance between working life and educational institutes, the appropriate guidance forms and reflective practices, to ensure that skills, underlying norms and practices transfer and develop.

The conceptual overview can be depicted by the following figure.

HE	Practice-based learning	The kind of education that comes from experiences; real work in real situations
HIGHER EDUCATION	Workplace learning	Integrating conceptual learning with work experience = the connective model
	Work-based learning	Focus on students' workplace activities
A bachelor's degree consists of 210 ects involving 30 ects of training		
VET	On-the-job learning	Learning method building on the objectives of the curriculum
Vocational education	Work experience	
	Practical training	
A vocational degree consists of 120 ects involving at least 20 ects of training		
Communities of practice	Learning always occurs in a specific context in relation to others	
Learning by doing	Linking professional and vocational competence	
Experiential learning cycle	Reflection on the work experience	

Figure 2. Work-integrated learning in Finland.

Epilogue

It seems that the conceptualisation and understanding of quality-based work-integrated learning in Finland is developing in the field of vocational education and training. It is no longer enough to merely launch the student into a workplace. The process needs to be mediated and monitored as connections between formal and informal learning, and between conceptual development and developing the capacity to work in different contexts should be at the fore. The core competences that should be aimed towards during work-integrated learning relate to 'boundary crossing' and 'polycontextual' skills which would give the students the ability to transfer skills and knowledge from one place to the next, i.e. the ability to work in changing and new contexts. Polycontextual learning can be achieved during a training period, but also in working life based projects.

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A zone between formal and informal learning

Pekka Ihanainen

Abstract

This article details an experiment undertaken at the HAAGA-HELIA School of Vocational Teacher Education. The zone takes into account strengths of both formal and informal learning in addition to instruction. The main results of this ethnographic type of approach are to follow; an active and sensitive role of a facilitator is a key formal factor to keep a zone between formal and informal learning alive and effective. Informal contents of learning in the zone come from free discussions and other activities carried out by participant students and their voluntary peer-controlled activity during zone processes.

'A Zone between Formal and Informal Learning' was a three-month course in spring 2012 for vocational teacher students that took place entirely online. The learning objective was to simulate a zone between formal and informal learning and to produce an authentic experience for participants with the content of the course. Based on this experience it can be said that the zone is real, but is always moving between formal and informal.

Keywords: formal learning, informal learning, facilitation, peer-learning

Concepts

Key concepts in order to seek understanding of the phenomenon are 'formal' and 'informal learning' and 'zone'. Formal learning encompasses all learning that takes place in formal settings inside an official educational system (see e.g. Colardyn, Bjornavold, 2004). It includes physical and virtual working environments, curriculum based contents, methods used and study resources made available. Teachers play a remarkable role in formal learning. Their role is changing from the traditional sharing of knowledge of tasks, to working as organisers of learning environments.

Informal learning takes place outside of educational institutes and systems (see e.g. Maunonen-Eskelinen, 2007). It can be called everyday learning, which means that learning is present in all natural activities completed at workplaces and homes, during hobbies and other leisure time undertakings. Informal learning is not purposefully goal-oriented, but can happen during working, which itself is targeted to achieve something, similar to building a summer cottage. It has been said, and research also points out, that up to 80 percent of all learning is informal (Cross, J. 2007). Informal activity is present in formal settings as well, e.g. during breaks and other social settings that emerge informally. Informal learning is not the same as non-formal learning, which can be very formal, but is implemented outside official educational systems, such as by trade unions.

The zone in this context refers to the fact that there exists a realm in which formal and informal learning meet and interweave with each other. In this zone there are features of both mentioned above, but it still has its own identity. One of the participant teacher-students suggested that the zone is like "a zone of proximal development" in the Vygotskian tradition (e.g. Wertsch, J. 1984). It can have the same kind of features, i.e. something interesting enough but not too demanding, but tentatively it is possible to state that the zone in question has its own character.

So, what is the point?

In recent decades we have started to discuss open learning and competence-based learning and development (e.g. Volmari, K., Helakorpi, S. Frimodt, R. 2007). These both focus on working activities outside of traditional classrooms and teacher-centred instruction. This phenomenon raises a need that forms the focus of this article: there should be a kind of mediating space, where natural, tacit, purposeful and explicit learning and competence development meet. Here this space is called 'the zone'.

Context in action

The Zone[1] was implemented in the HAAGA-HELIA School of Vocational Teacher Education with the participation of 20 teacher students from different teacher training programmes at HAAGA-HELIA. A facilitator of

[1] 'Zone' in the text with a capital 'z' refers to the actual zone implemented by the zone course and its participants; zone with a lower case 'z' refers to zones in general.

the Zone was the author of this article. The Zone was put into practice in January, February and March 2012. Its virtual venue was Yammer, which is an application for organisations that is similar to Facebook. The Zone consists of seven phases: the introduction of participants, reading, sharing and commenting of resource materials, interactive discussions based on start-up messages by the facilitator, summaries of chats, production of descriptive pages about the Zone by attendants, making personal statements to depict the Zone and farewells. The phases did not have definite durations although approximate deadlines were expressed in the instructions and they partly overlapped each other during the Zone's progress.

The given resource materials consisted of connected learning sites to understand informal learning in the modern contexts of children and youth, and Jane Hart's sites about workplace learning. The specific material used in spring 2012 is not available any more, but these are corresponding (Jane Hart sites 1, 2). Aside from the original resource materials both the facilitator and the participants shared extra materials during the whole Zone period. Formal learning was kept as known and experienced learning territory as such, without specific resources for defining it. Formal learning, of course, was both implicitly and explicitly explained in sources for informal learning when juxtaposed with the informal.

The Zone step by step

The Zone began with short introductions where participants told something about themselves in order to become familiar with one other. This introduction is important for creating a good climate for interaction. Here the facilitator also tried to introduce some topics for the course content, which meant that already in the introduction phase the zone topics were visible and open for discussion. Below is an example of introduction phase chats.

Image 1. Introduction phase.

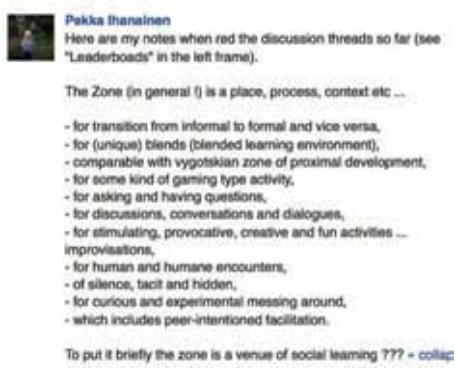
During the introduction resource materials were also made available. Discussion about the course topics that began during introductions gradually became more detailed and deeper related to the substance and reflections about the zone that were sought. In addition to personal opinions and interpretations raised in discussion, materials also supported the discussion. When participants interacted with the contents of resource materials and share conceptions about them the facilitator tries to keep interaction playful and free flowing, for example, by utilising presence messages (see below). He also intervened by presenting lightly provocative opinions in order to speed up reflective conversations among participant teacher students.

Image 2. Presence message.

Discussion about the zone has the longest duration of the course set. Initially, summaries are constructed. The facilitator gave his interpretation about the findings so far (see below) and discussion continues based on this outline.

Image 3. First summary.

The next phase of the activity was a conscious effort to describe what the zone means for course participants. They were first asked to write their personal views about how they perceive the zone. See the facilitator's collection of them below.


Pekka Ihanainen
Here are my notes when red the discussion threads so far (see "Leaderboads" in the left frame).

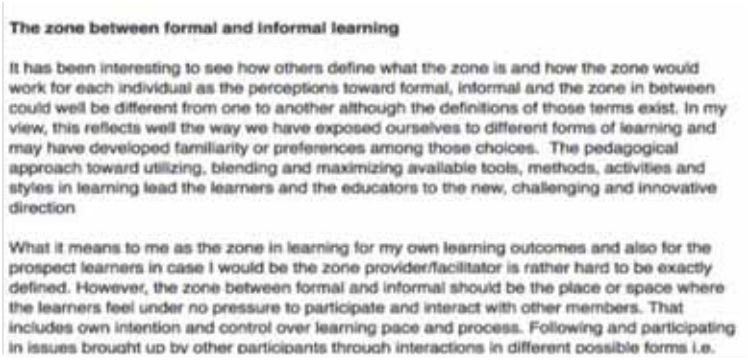
The Zone (in general !) is a place, process, context etc ...

- for transition from informal to formal and vice versa,
- for (unique) blends (blended learning environment),
- comparable with vygotskian zone of proximal development,
- for some kind of gaming type activity,
- for asking and having questions,
- for discussions, conversations and dialogues,
- for stimulating, provocative, creative and fun activities ... improvisations,
- for human and humane encounters,
- of silence, tacit and hidden,
- for curious and experimental messing around,
- which includes peer-intentioned facilitation.

To put it briefly the zone is a venue of social learning ??? - collac

Image 4. Personal descriptions of the zone.

Attendants were then requested to produce individually, in pairs or in small groups, an approximately one Yammer-page handout about how they understand the zone between formal and informal learning (Image 5).


The zone between formal and informal learning

It has been interesting to see how others define what the zone is and how the zone would work for each individual as the perceptions toward formal, informal and the zone in between could well be different from one to another although the definitions of those terms exist. In my view, this reflects well the way we have exposed ourselves to different forms of learning and may have developed familiarity or preferences among those choices. The pedagogical approach toward utilizing, blending and maximizing available tools, methods, activities and styles in learning lead the learners and the educators to the new, challenging and innovative direction

What it means to me as the zone in learning for my own learning outcomes and also for the prospect learners in case I would be the zone provider/facilitator is rather hard to be exactly defined. However, the zone between formal and informal should be the place or space where the learners feel under no pressure to participate and interact with other members. That includes own intention and control over learning pace and process. Following and participating in issues brought up by other participants through interactions in different possible forms i.e.

Image 5. An example of a page.

Pages produced were followed by a conversation. Results visible in Yammer pages are presented in detail in the next chapter.

For crystallising conceptions of the zone the participants were asked in the finale phase of the course to formulate statements to describe the zone in a sentence. They too are explicated in the next chapter.

Image 6. An example of statements.

The Zone

The zone between formal and informal learning is defined in the following paragraphs based on discussions of the Zone course participants, the zone description pages they produced at the end of the course and single-sentence statements, whereby attendants finally crystallise their personal understanding of the zone.

The zone can be defined by examining the experiences that attendants have when they take part in a zone-type activity. The activity itself in the zone is one factor to explicate the zone. The third element in the determination of the zone is the context in which it gets its realisation. To receive an entire image of the zone it is also important to explain in more depth the role of a zone provider and facilitator.

The zone is a place for communication, dialogue and immersion of new meanings and a way of learning and generating ideas in collaboration. It is a response to human necessity. Metaphorically speaking the zone is like a plant growing new branches and leaves everyday, when everybody waters it a little bit. Or it is like a multi-path bridge connecting to socially networked learning. These descriptions are from statements in which students summarised their zone conception.

Zone experienced

The Zone course participants describe their experiences as learners in the zone as follows. In a real zone, learners feel comfortable to belong, participate and interact. Learners can take control over their learning process and they experience freedom in their participation. This kind of

atmosphere reinforces the self-confidence and self-reliance of learners and constitutes even an aura of creative foment, to write, make reflections and contribute personal ways within the interplay of all participants, including the facilitator.

Characteristics of zone activity

Students of the Zone course stated that activities in a zone are somewhat planned, but are not designated. The zone activity can be characterised as social learning in which peer encouragement, pressure and facilitation are descriptive features. In the zone-type activity the intentions of the activity come from learners and not from particular programmed factors, which still have their role in the activity. That is, the zone activity is a formal way to informally learn from each other. The zone allows students to put into practice and increase the knowledge they acquire in formal learning settings. The zone activity is embedded in planned activities, which are not explicitly named as learning. They are natural authentic interactions independent of curricular and course formulations.

Zone as a context

Students specified zones between formal and informal learning as being places where participants can learn, discuss, promote, challenge and debate freely. The zone is a supportive venue for social learning. It is a medium to enhance social learning taking place in a flow of activities. In the zone a structured curriculum has a diminished presence although it works as a formal framework for informal activity. Some students suggested that competence-based learning contexts and prior learning recognition forums (e.g. Stenström, 2009) in vocational education are concrete examples of zones between formal and informal learning.

Zone provider and facilitator

A key factor for successful zones is a zone provider and facilitator. During informal learning the learning takes place as such and all people present are providers and facilitators of learning. In the zone a certain person (or persons) is (are) in a specific role to provide a zone and to facilitate zone activity. The provider-facilitator is not a teacher in the centre, but a curator of the zone environment, an active observer and indicator of the zone processes and a catalyst of mutual reflections on the zone.

The curator's tasks are to choose the applicable online (and offline) tools and forums for the zone activity, to afford relevant instructions related to accurate timing within the zone processes, provide appropriate resource materials for the zone activities and keep alive and experiential her/his own peer-like approach in the zone. The tasks of the observer and the indicator are to keep tracking individual, mutual and manifold participation issues such as unsatisfactory and hyperactive attendance and to respond to them accordingly, having the courage to deepen and enlarge the contributions of participants and take note of interesting and important interventions of zoners. The catalyst's tasks are to recognise 'weak signals' in terms of the zone substances and present tactful content confrontation to make diversities of substance issues visible.

Above all, the zone provider and facilitator has to remember her/his role as being an example for the zone activity. S/he is an example of manifold and pervasive presences. This refers to presence in respect to time, i.e. participants can experience that they meet the facilitator at a particular time when needed. The presence has to be identifiable by place, also. This means that attendants can locate the facilitator physically and virtually, which makes her/him more real. This can be called a locative presence. The facilitator has to make her/himself experiential as an individual person. That is to say that s/he has a personal presence that is felt by others. Finally the facilitator has to keep her/himself within reach as a master of content substances at hand. This means that s/he is able to help participants to understand the substance knowledge in question – at least in terms of peer expertise. This can be called a cognitive presence (cf. Anderson, 2004).

Conclusions

The zone has both formal and informal features, which permeate one other. In a formal sense it consists of activity provision and supporting framework put forth by a facilitator. A resourced facilitation itself is a formal factor as well. The framework offers the third formal characteristic for the zone, i.e. it is more or less an intentional context for social learning. From an informal point of view the zone can be seen as the activity of free discussions without fixed content planned in advance. It includes the creative and open contributions of participants, and peer encountering and control is a core element of it.

The zone constitutes a cross boundary terrain needed in modern and future education. Terrains of zones are primarily online environments

connected with physical spaces. They can be a modified version of a club and studio-type activity alongside formal classrooms, camps or pop-up learning spaces, which emerge when people with initiative decide to work and learn together.

An utmost characterising qualifier of the zone is the phenomenon of the flow of activities. Initiatives, realisations, descriptions, definitions, doubts and alternative views and reflections, renewals and turnings-back are parallel and pervasively flowing in various types of human interactions. Although the flow of activities does not have a specific beginning or a definite end the flow remains full of energy and cognitive and social empowerment.

The identity and character in the zone between formal and informal learning described in earlier chapters give a basis for the creation and implementation of real zones needed in the authentic learning environments of today and especially in future. The zone learning takes into account a criticism of biases in formal learning setups and at the same time understands in practice the power of informal learning.

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Personalized and collaborative learning models through social media

Päivi Aarreniemi-Jokipelto

Abstract

In recent years social media has become widely used in society, but education has not been as swift to adopt it. It has been absorbed more widely in informal learning than formal learning. Future employees need to have new types of abilities to use information and knowledge in line with the requirements of a changing society, thus the competences of the knowledge society demand also competences in utilising technologies. Finland has the National Plan for Educational Use of ICT, which has made propositions how to develop the learning environments of Finnish educational institutions to more effectively meet the needs of the information society. It has suggested, for instance, actions focused on student-centred and collaborative models. This paper aims to illustrate the models exploited in the guidance and counselling of personalised learning paths and collaborative learning spaces. The context of the study is provided by the web-based teacher education programme of the HAAGA-HELIA School of Vocational Teacher Education. The programme has applied social media in education during the previous six years and seeks to create new models and practices to be utilised in the learning context.

Introduction

In recent years, rapid technological advancement has enabled social media tools and new devices to be exploited in society and these have moved many activities from face-to-face interaction to the Internet. Finland has also the National Plan for Educational Use of ICT (FNBE, 2010) that has made proposals and suggested further actions concerning how to develop the learning environments of Finnish educational institutions to more

effectively meet the needs of the information society. The actions focus on topics such as learners' future skills, pedagogical models and practices and teachers identity, teacher training and pedagogical expertise. Young people have become increasingly reliant on social networking technologies and employers have begun to seek out new skills (i.e. expertise, creativity, interdisciplinary thinking, and team-based problem solving) to increase their competitiveness in a global marketplace, however education has changed much less (Cisco White Paper, 2010). While student-centred learning has become somewhat of a mantra for educators in recent decades, the adoption of social software tools driven by appropriate pedagogies may offer an opportunity for this goal to be truly realised (Lee & McLoughlin, 2008). According to Chatti (2007), applying new technologies without changing the ways of using them does not help to take advantage of the potential that the technologies can offer. Without new ways of action, such as pedagogical models, we are trying to solve new challenges using outdated methods. The HAAGA-HELIA School of Vocational Teacher Education has sought to create and soak up new pedagogical models to be utilised through social media in the web-based teacher education programme (WBTEP). This paper aims to illustrate the models created and exploited in the guidance and counselling of personalised learning paths and collaborative learning space.

Since 2007, the HAAGA-HELIA School of Vocational Teacher Education has offered a WBTEP, which applies various social media in its implementation. The student teachers read for their certificate in a one-year programme of vocational teacher education. The WBTEP operates the same curriculum as the other five teacher education programmes of HAAGA-HELIA, but the main difference is the much wider usage of online learning compared to the other programmes. It has eight contact days compared to 14-23 days in the other programmes. In addition to the competences defined in the curriculum, the WBTEP aims to improve teacher students' competences in information communication technology (ICT). The teacher students gain the experience of using social media and educational technology in a student's role, which helps their own work as online teachers. They become aware of several social media tools and the pedagogical possibilities of social media. Already during their own studies, many students adopt social media and online pedagogical models into their own teaching practices, and some teacher students even spread their new competences into their own institutes and colleges.

Because the WBTEP also serves as a test-bed for experiments in e-learning, social media and mobile learning, the programme constantly seeks novel and better tools and pedagogical models in its teaching and

learning activities. Afterwards, the successful solutions of the WBTEP can be applied widely in our other teacher education programmes. The role as a test-bed has also brought about the need for changes in the virtual learning environment (VLE) that is used. The first four years saw the Moodle VLE used as a gateway for all learning tools, but now Ning and an extended amount of social media tools such as blogs, wikis, podcasts etc. have been utilised. Learning is organised with the help of collaborative communities and social networking. Students are spread around Finland, from the Capital Region in the south, all the way to the Polar Circle in the north of the country. Currently, a new phenomenon has been the need to study part of the year abroad, and we can expect that this demand will increase in future. From an online learning point of view this is not a challenge, but it demands more ICT and suitable pedagogical models to be used also during contact days. Therefore, the usage of tablets and smartphones during contact days has been an important target for development work.

Social media tools for learning

Social media tools have penetrated the educational context in recent years. These tools are used in interactive media creation (see e.g. Brennan, Valverde, Prempeh, Roque &Chung 2011), in open worlds (see e.g. Nguyen 2011), in virtual worlds (see e.g. Green 2011) and in social networking (see e.g. Khaddage & Bray 2011). Social media appears in activities such as participation, student-generated content, collaboration, the sharing and creation of ideas and knowledge, as well as social connectivity between participants. Social media has also broken into leisure-time activities and informal learning. People use Facebook, Twitter, Flickr, and LinkedIn to keep in touch with friends and colleagues. Now, the same tools have also entered the learning context. Social media has been considered as a new way of seeing content as being shared ownership of all users (Syvänen, Muukkonen & Sihvonen 2009), examples of which could be blogs, wikis and the sharing of slides and audios. However, a single person's output becomes important and significant only when others make their changes, updates and extensions to the original content (Lietsala & Virkkunen 2008). This can be seen in actively working social networks.

Due to the recognition of the possibilities of social media also in formal learning, new theoretical constructs have been developed for application. An example of which is the personal learning environment (PLE) model that allows learners to reflect on their learning online. In

this paper, the created collaborative learning space is also described in addition to the PLE.

Virtual learning environment

A virtual learning environment (VLE) is a platform designed to support teaching and learning in an educational setting. VLEs typically include functionalities to store learning material, forums to communicate, possibilities to chat and write collaboratively, tools to assess and the possibility to use external links. Characteristic for the use of a VLE has been that a teacher plays a key role in the launching of learning activities in a VLE. Students have no possibility to create new functionalities, but instead they have a more passive participant role.

When social media tools became available, VLE companies/networks aimed to develop the existing VLEs to also include the same functionalities that are enabled via social media. However, some teachers have abandoned the traditional VLEs, which their institutions have offered for teaching and learning and replaced them entirely with social media tools, which have been easily available and free.

The change process from traditional VLEs to the use of social media tools has also included huge changes in the learning environment models that are utilised and in teachers' knowledge practices. The change in models and ownership, along with an example of the change process, are described in the following sub-chapters. These new solutions serve also as responses to the expectations of the National Plan for Educational Use of ICT.

Integrated or distributed model in the context of learning environments

Traditionally the integrated model has been used in a VLE context, where a VLE serves as a hub to all learning resources and activities. In practice the integrated model means that all learning contents and activities are organised and pre-built by a teacher in the VLE and all functionalities can be accessed via the VLE. Depending on the platform some external tools chosen by a teacher can also be integrated or linked to the platform, but the VLE is a gateway to all functionalities.

A distributed model is a mash-up, which combines user-selected tools and networks on one administration interface (Syvänen, Muukkonen,

Sihvonen, 2009). A student can build, for example, their own PLE from the tools already used during their leisure time, such as blogs and wiki. The distributed model includes typically more tools than the integrated model. In addition, the final combination of tools varies from one student to the other.

In the WBTEP we are nowadays closer to the distributed model than the integrated model. We have curriculum, assignments, and announcements in the Ning learning environment. In addition to Ning, social media tools are used in collaborative learning, the construction of knowledge and communication, as well as personal and collaborative learning environments. Students have the freedom to choose social media tools to be utilised in their personalised learning paths and in team processes.

The change process from the integrated model towards the distributed model has meant also changes in the teachers' knowledge practices. Currently, a teacher has to be present in several locations in cyberspace, not just in a single VLE. There is a need to re-organise their own working style so that a teacher is aware of what students are doing and their guidance needs. In the distributed model, a teacher continuously follows students' personal and collaborative learning environments during the process of guidance and counsel learning. Also, skills to use several social media tools and absorb new tools quickly are required. The ability to work in the constantly changing environment of cyberspace helps besides one's own eagerness to enhance their own competencies.

Ownerships effects on the learning environment

The transfer from the integrated model to the distributed model changes the ownership of the learning environment. In the integrated model an institution is the owner of a VLE, but in the distributed model students have more power. A student as an owner of a PLE enables access to the learning environment also after graduation. Thus, the solution promotes lifelong learning. Furthermore, this freedom affects the learning process. Lee & McLoughlin (2008) argue that perceived affordances, which are a function of the perceptions and views of individual users or learners, are of central significance, and encourage educators to empower students with the freedom and autonomy to select and personalise the tools and technology available to them, as well as allowing them to determine how best to use the technology to support their learning.

The next table illustrates different owners' effects on the learning environment. When a student is the owner and making the decisions, the distributed model is utilised.

"OWNER" OF LEARNING ENVIRONMENT	SCHOOL, EDUCATIONAL ORGANIZATION	TEACHER	STUDENT
Number of tools	few, limited	several	few - several
Disadvantages	teacher has not the desired tools and functionalities	students can be confused if all teacher use different tools	teacher has to work with several tools and to learn several tools
Examples of tools used in learning	Moodle, Connect Pro	wiki, blog etc.	Google Site, blog etc.
Advantages	all teachers use the same tools	learning environment includes the needed functionalities from the learning point of view	▪ students has access to personal learning environments also after graduation ▪ students have freedom to use tools based on their own desire ▪ supports life-long learning
Access after graduation	no	no	yes
Structure of learning environment	integrated model	integrated or distributed model	distributed model

Table 1. Advantages and disadvantages of different owners of learning environments and tools (adopted from Aarreniemi-Jokipelto, 2011).

Change process example from the integrated model towards the distributed model

During the first four years of the WBTEP, Moodle was utilised as a VLE, but then it was replaced with Ning. Ning was created to serve as a platform for communities, not as a VLE. There are a number of reasons why Moodle was replaced in the WBTEP. Firstly, there had been several technical problems with Moodle and teachers had not embraced its existing and requested functionalities. Secondly, there was a need to create novel, more student-centred models, which were not enabled via Moodle. Thirdly, some students had complained about Moodle. Ning was chosen because it is widely used in an educational context (see e.g. Galasso 2011) and most of the WBTEP teachers had previous experience with it.

In the WBTEP, Ning serves as a place for learning material, assignment instructions, guidance letters and communication. It also includes links to several social media services: i.e. Glogster, Diigo, Knovio and Voicethread. The goal was to replace text-format contents with audio and video and to find new approaches through social media. During the first years of the WBTEP, the guidance letters were text-based messages, but the launched e-zine called Ampiainen (Wasp) also includes audio, charts and pictures. To create the new appearance and form for the e-zine, several social media tools such as Glogster, Knovio, and Voicethread were experimented with. The guidance letter produced with Glogster resembled a poster. Students especially liked the checklist and visual appearance of the guidance letter. Knovio is very easy to use and is liked by teachers. This year Glogster was decided to be used for e-zines, because of its visual appearance, ease of use and positive feedback from students. All these tools are freeware tools.

Guidance and counselling through social media

Online guidance and counselling is extremely important as the WBTAP has only eight contact days. Particular processes have been developed both for personalised and teams' guidance and counselling in the WBTAP. During previous years, the guidance and counselling feedback from students has been very encouraging and even better than in traditional teacher education programmes. Table 2 illustrates how students answered the question if they have been satisfied with guidance and counselling in the WBTEP.

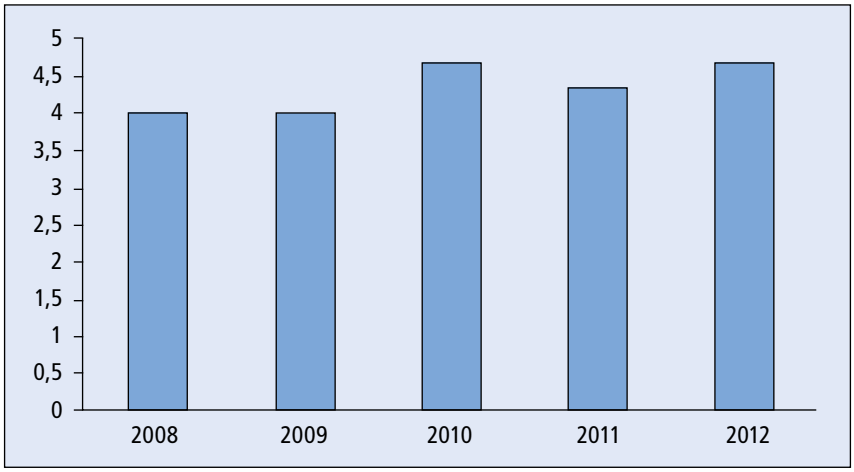

Table 2. Satisfaction of students with guidance and counselling in years 2008-2012.

This chapter presents personalised and collaborative guidance and counselling as utilised in the WBTEP.

Personalised learning environment

In the WBTEP, students create personal learning environments (PLE). Traditionally, a PLE is a repository for all content the individual creates in various learning community activities, or a portal to manage one's own learning activities and projects (Syvänen et al., 2009). In the WBTEP, the PLE is not just a repository, but also a place for the reflection of learning and acts as a learning diary. The PLE is written during the entire study period, which enables visibility of the learning process both during the process and also afterwards.

The personalised learning environment includes following processes such as the personalised learning path, continuous guidance and counselling through learning diaries and feedback on assignments. The processes are described in the following sub-chapters.

Guidance and counselling via personalised learning path

Each student has a personal learning path during his or her studies in the WBTEP. The personalised goals and activities to be achieved are defined in the beginning of the studies and are assessed twice during the learning process. At the commencement of their studies, a student also clarifies personal assessment criteria to be used when assessing one's own learning. The personal learning path is guided and counselled by a

teacher with help of a personalised learning path process. The following figure clarifies this process.

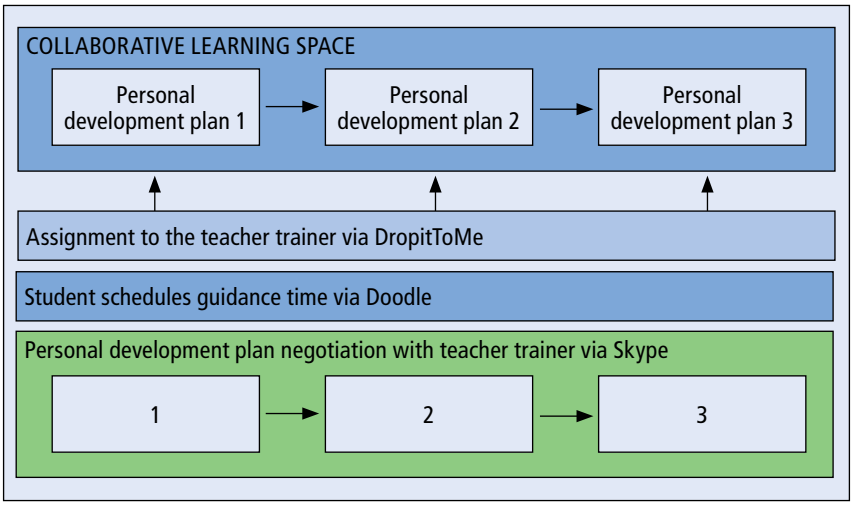

Figure 1. Personal development plan negotiation process (Aarreniemi-Jokipelto 2012b).

A student defines the first version of a personal development plan at the commencement of their studies. The first assignment is sent to a teacher trainer via the DROPitTOme tool and an appointment for negotiation is made via Doodle. The negotiation includes also the process for recognition of the previously acquired knowledge. After a few months a student assesses their personal study plan and makes the required changes. After that there is a second guidance and counselling meeting between a student and the teacher trainer. The third and final guidance and counselling meeting is in the end of the studies, during which the whole learning process is assessed.

Between personal learning plan negotiations guidance and counselling occurs in students' learning diaries, often in the shape of blogs. The teacher trainer is continuously monitoring learning processes and making interventions as required. Continuous monitoring makes it easy to recognise when there are problems and interventions are needed.

Feedback on assignments serves also the guidance and counselling process

Feedback on assignments has a significant role in the guidance counselling process. Students receive feedback after each phase of an assignment. It is important that a teacher has had the possibility to closely follow and guide the process with each student during the whole learning process.

Earlier feedbacks were also in text format, but during recent years there have been experiments with feedback utilising video and audio. Video has been produced with Oovoo and audio with Knovio. Teacher students have liked both forms and have gone on to incorporate them also in their teaching. Because the video size is large when using Oovoo, they are made available for students via DropBox, which allows the storage of large files. Knovio has been very liked by both teachers and students. First one uploads their PowerPoint slides and afterwards records the audio. The combination of slides and audio has been successful from a learning point of view, because one can both see and hear feedback. From the teacher's point of view there is the demand for the preparation of a proper script in both cases to plan what is to be said. Quite often, a feedback recording has demanded several recordings until the final version has been acceptable, due to teachers neglecting to include all pertinent issues, mispronunciation etc.

There have also been social media experiments in text-format feedbacks. We have used Tagxedo and Wordle, tools that turns words into a visual word cloud. The idea is that clouds give greater prominence to words that appear more frequently in the text. These have been very useful in students' reports, because it gives a clear picture what are the most frequently used words. Sometimes words such as 'but', 'and' and 'or', have received greater prominence, not the keywords of a report. Students have felt that the visual word cloud has been a useful tool when checking one's own text. Figure 2 illustrates a word cloud produced with Tagxedo.

Figure 2. Word cloud produced with Tagxedo.

Guidance and counselling of team processes

Students study in teams of three-to-five students in the WBTEP. Assignments are either personal assignments or team assignments. A teacher offers guidance counselling for both individual students and teams. The following sub-chapter describes the team processes used in online guidance and counselling.

Collaborative learning space

Characteristics for learning in the WBTEP are both personalisation and collaboration. The following figure illustrates the guidance and counselling processes and actors in the processes.

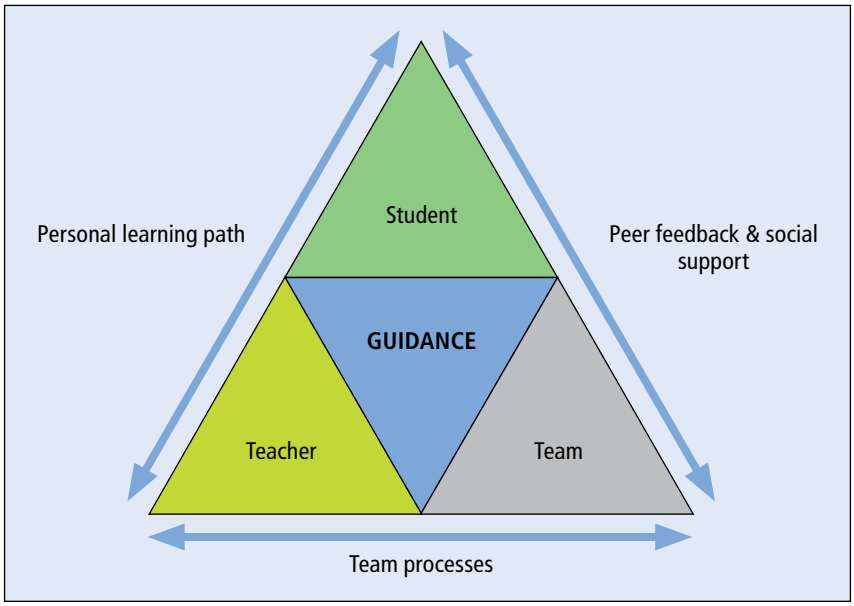

Figure 3. Guidance with online learning.

Each team creates its own collaborative learning space. A collaborative learning space refers to a cyber space, which allows team members to interact, generate ideas, share and create information, provide social support, and give peer assessment. The cyber space consists of several social media tools that enable collaborative work. Each team is the owner of their own collaborative learning space, thus it is organised, customised and created collectively. For that reason the final combination of tools varies from team to team. A team also makes the rules of how to study together and how to use the collaborative learning space. They also decide if the collaborative learning space is open or closed to outsiders.

Team processes in the WBTEP

Each team creates its own team action plan (TAP), which is a binding agreement among team members. It describes the team's goals, interests, responsibilities, rules, working habits and peer support. The process is guided and counselled and assessed three times a year by a teacher trainer. Each of these times the team also updates their TAP if needed.

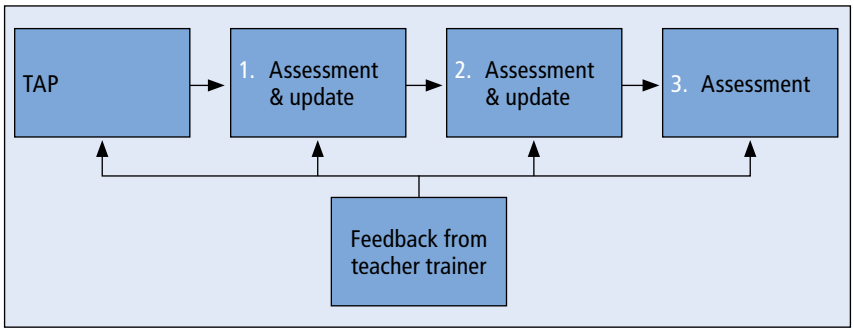

Figure 4. Team process (Aarreniemi-Jokipelto 2012b).

Teams often decide to use Google Docs when they are writing their TAP. The TAP is usually placed in a team's collaborative learning space to remind about the goals and responsibilities. The assessments and updates of the TAP are important, because if they are not required, the TAP loses its role in guidance and counselling. The TAP also serves in a situation when a team member is not working at all, because it is defined in a TAP how a team will deal with these kinds of situations.

Students also have to honour their family and work duties, so studying can be very demanding. According to students, social support from their peers has contributed greatly to their motivation and given them energy for their studies. In many cases students have said that this social support has been the reason that made it possible to continue with their studies, when they have faced problems.

Peer assessment is also an important part of the team process, i.e. in the literature review. Several assignments place the literature review as the first phase of an assignment. During the literature review process, firstly the team defines the goal and research questions for an assignment. Secondly, the team decides who is reading each of the books, and the readers then identify key points of conversation from their book. Thirdly, the team converses about each book via Skype. The conversation is based on the goals and defined research questions. In addition to the information found in the books, also other information and experiences relating to the research questions are shared. Students usually feel that these conversations have been the best part of the literature review process and due to these conversations they have learnt much more than would have been possible to learn by oneself. The final outcome of the literature review is the crystallisation of the research questions and suggestions for the next phase.

Reflective space in assessment

Experiments have been made with how podcasts produced with mobile phones can be utilised for offering reflective space in an assessment context. A reflective space is a space where understandings emerge from often-complex situations during the course of studying (Aarreniemi-Jokipelto & Alanko-Turunen 2011). The student teachers are invited to produce a comprehensive learning story of their learning process during the Organisations and Networks of the Vocational Teacher module, and are encouraged to identify the key features of their learning experiences. In addition, student teachers are invited to examine the emotions related to their learning, and understand how learning has affected them and how they themselves have been affected by their learning.

The process consists of four phases. First, the student teachers are asked to reflect on their individual experiences from the learning process. Second, student teachers present their reflections to their team members. Third, the participants have a reflective dialogue with a set of prepared questions for clarifying understandings and learning outcomes. Fourth, teacher students are invited to produce a comprehensive learning story to be podcasted via Audioboo.

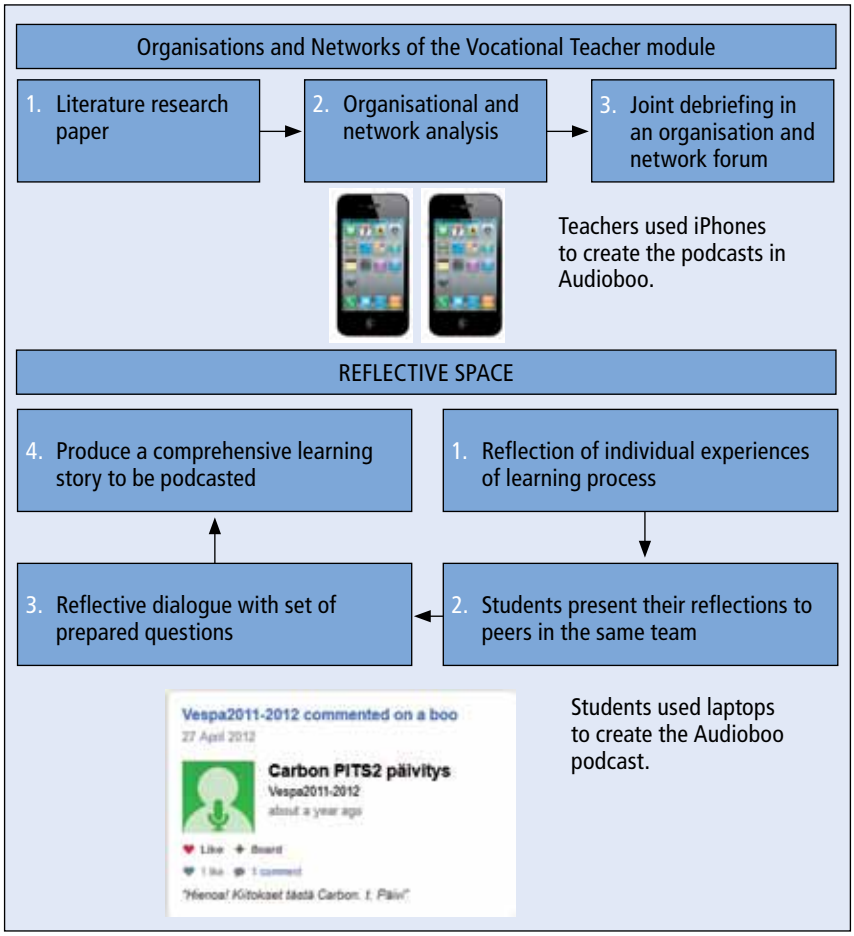

Figure 5. Reflective space in an assessment context (Aarreniemi-Jokipelto & Alanko-Turunen 2011).

According to feedback from students and teachers' experiences, the reflective space concept has been a good solution. It generates information that has not been possible to be acquired otherwise during the learning process. 'Learning story as a novel concept' and 'podcast as a form' have also been liked by students.

Conclusion

The information society is demanding new competencies for its citizens. Governments and researchers are demanding more student-centred pedagogical models for education. We live in an information society with modern technical devices and technologies at our fingertips, but these have not been exploited as much as they could have been. The change

process demands novel knowledge practices in addition to new solutions concerning how schools and institutions should provide online learning. A teacher needs to have the possibility to enhance their competences and be familiar with new technologies and devices. A teacher needs new practices to work and organise work. Also, management's support is important in the change process. The change in knowledge practices is the base for new student-centred methods in online learning.

The National Plan for Educational Use of ICT concluded with how to develop learning environments in future. The WBTEP aimed to create the requested pedagogical models and practices to respond to the suggestions that were raised. The student-centred models of the online personalised learning path and collaborative learning spaces were developed. In addition, novel practices to guidance and counselling with personalised and collaborative team processes online have been created. Also, a model to utilise smartphones in the reflective space concept has been experimented with. Currently the reflective space concept has become a permanent practice when assessing team processes. According to students' feedback, the personalised and collaborative models and practices through social media have supported their learning, giving energy to studies and motivated students even in situations when learning has been difficult in light of family and work duties.

In future, the WBTEP will continue its work with developing student-centred online learning models and practices. Additionally, models and practices to utilise smartphones and tablets both during contact days and with online learning will be boosted.

NAME	WEBSITE	ACTIVITY	FREE/PAID
Audioboo	http://audioboo.fm/	record and share audio	free (basic use)
Diigo	http://www.diigo.com/	online bookmarking	free
Doodle	http://www.doodle.com/	scheduling meetings and appointments	free
DropBox	https://www.dropbox.com/	storing and sharing files	free (basic use)
DROPitTOme	http://dropitto.me/	receiving files to DropBox	free
Facebook	https://www.facebook.com/	social utility that connects people	free
Flickr	http://www.flickr.com/	online photo management and sharing application	free
Glogster	http://www.glogster.com/	online posters	free (basic use)
Knovio	http://www.knovio.com/	online presentations	free (basic use)
LinkedIn	http://www.linkedin.com/	professional network	free (basic use)
Moodle	http://moodle.com/	open-source software to be used for virtual learning environment	free

NAME	WEBSITE	ACTIVITY	FREE/PAID
Ning	http://uk.ning.com/	platform for communities	paid
Oovoo	http://www.oovoo.com/home.aspx	video messaging	free (basic use)
Tagxedo	http://www.tagxedo.com/	word cloud service	free
Twitter	https://twitter.com/	real-time information network	free
Voicethread	http://voicethread.com/	audio	free (basic use)
Wordle	http://www.wordle.net/	word cloud service	free

Table 3. Social media tools.

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Supporting learning in projects – The experiences of an ICT teacher from Laurea University of Applied Sciences

Antonius De Arruda Camara

Abstract

This article describes how the author, a teacher working at Laurea University of Applied Sciences, is applying the pedagogical model of the institution (Learning by Developing – LbD) in ICT study-units of the Business Information Technology Degree Programme. It describes from a guidance perspective the learning environment created around R&D projects, guidance and assessment approaches, and the author's own experiences. The article concludes with a discussion about major challenges, what areas need to be developed in future projects and what appears to be succeeding.

Background

Laurea is a university of applied sciences operating in Espoo and other locations in the Helsinki metropolitan area. It offers bachelor's and master's degree programmes in Business Administration, Security Management, Business Information Technology, Service Innovation and Design and Nursing, among others.

To fulfil the pedagogical, research and regional development tasks assigned to universities of applied sciences in Finland (Polytechnics Act 351/2003), Laurea has developed its own pedagogical model called Learning by Developing (LbD). In the LbD model these three tasks are addressed in an integrated manner where teachers, researchers, industry professionals and students work together on genuine workplace development projects (Laurea Facts 2011-2012).

LbD is rooted in pragmatism as it emphasises experiencing and interaction with real-life situations as the source for learning. LbD incorporates elements of project-based learning as it aims to use working life development-projects as learning environments. It also incorporates elements of progressive inquiry learning, described by Hakkarainen, Lonka and Lipponen (1999) as learning focused on research and development (R&D) projects, with students adopting investigative approaches. Particular to LbD is the fact that it aims to use Laurea's own research as the source for development projects (Raij 2007).

In LbD, students learn by participating and collaborating in genuine development projects, addressing the needs of the world of work having teachers, researchers, and industry professionals as colleagues. Teachers are no longer only providers of knowledge and they can assume other roles such as facilitators, guides and co-workers. In this scenario students are empowered to take larger control of their own learning as they can build learning paths that best suit their individual background and learning goals. Learning in LbD is based on five key elements: authenticity, partnership, experiencing, investigative approach and creativity (Raij 2007).

This article shows how the author has applied Laurea's pedagogical model in project-based studies related to ICT system development, with the main perspective on student guidance and supporting learning. The author has developed and applied the approach described in this article since the spring term of 2011. At the end of this current term, spring 2013, the author will have guided a total of 92 students obtaining approximately a total of 1180 ECTS credits in this approach.

Getting ready for the project

Selecting the project

Selecting a suitable project is of primary importance to ensure that students are motivated and learning outcomes are reached. To help screening and finding suitable projects the teacher should use the following criteria:

1. Projects should have a high potential to realise the authenticity and partnership elements of LbD.
2. Activities and topics in the project should be aligned with the learning outcomes of curricular study-units that will be integrated in the project.

Authenticity and partnership in LbD projects

Authenticity means that students will work and learn in a genuine working life development project and the development areas in the project relate to the competence areas of the students' curriculum. Development work can be addressed to resolve existing problems or to develop new solutions and innovations. Partnership means that work is done collaboratively among students and other project members such as experts, teachers and working life partners. The concept of collaboration extends to learning together, sharing competencies, commonly agreeing on students' roles in the project and students taking responsibility of their own learning (Raij 2007).

Alignment with learning outcomes of curricular study-units

Although this is already implicit in the LbD concept of authenticity, it is worth to have it as a separate criterion. Besides the ultimate goal of learning, students participate in a project with the intent to gain credits from one or more study-units of their curriculum. It is therefore required that the activities and learning occurring in a project match with the learning outcomes of the study-units as set in the curriculum.

The teacher has an important responsibility to screen candidate projects and plan with project stakeholders a scenario that will be compatible with the learning outcomes set in the curriculum.

Defining the role of the teacher

It is not enough just to have a suitable project. Teachers that participate in the project guiding students must also be prepared to understand and take a suitable role in the process.

One critical element of the teacher's role is that they have to be prepared to transfer the learning responsibility to students as much as possible. This means that decisions about students' individual learning objectives, individual roles within the project team and the choice of content to be studied during the project should be left to the students.

Another critical element in the teacher's role relates to student assessment and evaluation. Teachers should be prepared to focus on formative assessment methods. This means that the teacher should create situations and use methods to assess the students throughout the entire duration of the project, from beginning to end. The key objective of formative assessment is to offer students the opportunities to demonstrate their learning progress and also for the teacher to continuously give them feedback on

how they are progressing (Hyppönen 2009). The methods applied by the author are described in a section below.

A third important element of the teacher's role is that they have to be prepared to guide and facilitate the students as they progress with the project. This can mean, for example, helping students finding relevant study resources; planning, organising, or conducting learning workshops when needed; promoting networking among students, other project team members and external specialists; and helping finding the right direction to find answers for unresolved questions and issues.

One final element of the teacher's role relates to teacher's attitude and the dichotomy of trust and control. Teachers must be prepared to trust students instead of controlling them. Transferring the learning responsibility to students may not work if the teacher does not trust the students. Trusting students means that the teacher must give them autonomy to make choices on their individual learning objectives, autonomy to investigate and research the relevant body of knowledge and autonomy to decide on project milestones and deadlines. Trusting, however, is a two-way process. Students must continuously demonstrate that they are entitled to be trusted. Teachers should use suitable assessment methods at the right time to allow students to demonstrate this.

Composing a suitable team for the project

This is also a very important factor affecting the overall success of the project. When considering the structure and composition of the project team, the teacher should aim to compose a team that will have a good potential to function as a self-directed learning community that realises the authenticity and partnership elements of Laurea's LbD.

Realising the authenticity and partnership elements means that the project team must have members representing the actual stakeholders of the project, and that these members are taking meaningful and active roles in the project. Stakeholders can be, for example, existing project or programme organisations within Laurea or work-life organisations. It is not enough that work is done 'for' a stakeholder. It is also necessary that work is done 'with' the stakeholder. In the author's previous experiences, stakeholder representatives have taken the roles of project manager, project director, subject-matter expert and senior specialists.

Functioning as a self-directed learning community means that the project team is able to define common goals and shared motivations. Each team member is able to identify individual learning goals and these goals

are shared within the team. There is a willingness to support each other to learn and work, and reaching the team's common goals is actually dependent on the individual contribution of each member.

From the author's previous experiences, composing a team with good potential to become a self-directed learning community requires firstly that each member is interested in, and motivated by, the project topic. Secondly, each member is assigned clear and meaningful individual responsibilities in the project. And thirdly, there are experienced members in the team that are able to support less experienced members in learning technical skills relevant for the project.

The author has had good experiences with project teams with a mixed composition of students: junior students, senior students, exchange students and foreign students from other institutions participating virtually in the project. Also, as already mentioned, the participation of stakeholder representatives is a critical requirement for the successful functioning of the team.

A final aspect when composing the team is defining the teacher's role in it. The teacher's role should be focused solely on supporting the learning process of the students. The teacher should not have direct responsibility for any of the project tasks. All project tasks should be allocated to students and other project team members. Under the facilitating and guiding role, teachers can support the project team with finding solutions for issues and problems in the project, however the primary responsibility to complete the tasks remains with students and other team members. This approach has been successful as it allows the teacher to focus on the pedagogical aspects of the project and also helps to ensure students operate autonomously and independently within the tasks of the project.

Students can take several roles in the project in accordance with their initial competence levels and the learning outcomes of the study-units from which they will receive credits. A common important factor for all participants is that there should be a development responsibility in each of their roles. Typical roles for students in ICT projects are: system analyst, software developer, system administrator, product manager, project manager, business developer and test manager.

Choosing suitable assessment methods and tools

Suitable assessment methods are ones that allow students to autonomously and independently externalise their individual learning progress and that allow teachers to provide continuous feedback on students' progress.

The first criterion is a delicate one and has to be well understood to avoid teachers inadvertently removing autonomy and learning responsibility from students. Here is one example: in a specific ICT project, students set as one of their goals that they should learn the basics of a new programming language. To assess and evaluate this, teachers decided to give an examination at a certain point of the project that includes several questions covering the basic features of the programming language. This is a difficult situation because the examination could indeed be a straightforward and efficient way for students to demonstrate that they have learned the basics of that programming language. On the other hand, the examination questions represent the teacher's view of what the basic features of the programming language are. By setting the exam, the teachers are therefore removing from students the autonomy and responsibility to externalise and demonstrate their own view and understanding of what the basics of that programming language are and how well they know them.

The second criterion also requires attention from teachers to avoid approaches that would be to too time consuming and therefore not in accordance with the amount of hours resourced for the teacher to guide the students in that project.

The following are the guidance and assessment methods the author has been using:

Face-to-face team guidance meetings (guiding the learning process, not the project work)

Face-to-face guidance meetings are used as a method to discuss with students how they are following the learning process in the project and how they are progressing as learners.

Discussions about the learning process include topics such as how properly the students are applying learned concepts, tools and methods in the project work; how properly the students are using other assessment methods; how well the students are meeting different guidance milestones; what difficulties they are facing to externalise their learning progress, and how to resolve issues related to their learning progress.

During these meetings the teacher should try to ask questions that stimulate reflective thoughts in the students. For example, questions could be of such types as, 'Can you explain why you consider this task difficult for you?', 'Can you explain the reasons that made you take this decision?', 'Can you explain how the tasks you reported relate to the concepts you just learned?' etc…

Note that although during these meetings the teacher can discuss topics directly related to the project activities, the focus is on guiding the learning process, not about guiding work in the project. To discuss about project status and tasks there are additional project meetings conducted by the project manager and the teacher does not necessarily take part in these.

Online learning diaries

Students use the learning diary to describe and reflect on their learning activities and learning experiences during the project. Students are asked to write entries in the diary at least once a week. In these entries, students are asked to describe, for example, what activities they perform that aid in learning new concepts; what resources they are using; how they are applying the learned concepts to the project work; what are new concepts they plan to investigate in future and what are the concepts they are facing difficulties with understanding, and why. Students are encouraged to write concise and brief entries and avoid long texts. The diary is a useful tool for the student to summarise and record his/her learning activities and reflect on them. At the conclusion and also during the project the student can look at past entries to obtain a good view of what and how they have been learning.

Teachers use the learning diary to remotely follow the student's learning activities and learning progress. If needed, the teacher can add comments to the diary asking students to explain more about a certain topic, praise a good entry or ask students to reflect and elaborate more on unclear statements. By following the learning diary the teacher can collect useful background information to discuss during the face-to-face guidance meetings.

The diary has to be available on an online web platform in such a way that students and teachers can have access to it anytime from anywhere (with Internet access).

Note that the learning diary should not be used to record project tasks. Keeping track of project tasks falls under the responsibility of the project manager and he/she can use any project management tool specialised for that type of activity.

Evaluation of artefacts produced during the project

This method is used to assess the quality of an artefact produced by one or more students to gain visibility of how well the students know the processes, methods and techniques used to generate the artefact.

The teacher, project manager or a subject-matter expert can assess the quality of the artefact by evaluating it against a set of predefined

specifications. The assessment can be done offline or in a demonstration session where students present or demonstrate the artefact.

To access how well students know the processes and techniques to generate the artefact, a face-to-face meeting is needed. At this meeting the students first present and demonstrate the artefact. The teacher, project manager or subject-matter expert then puts questions to the students asking how they did something, what tools they have used and what processes and methods they have applied. In the case of software applications, for example, the student can be asked to explain part of the source-code.

Students' demonstration of learned theory

This method can be used as a control mechanism to enforce students to research and study new concepts, tools and technologies up to a certain date during the project. The need for this method became visible after the author realised that the learning diary alone may not be sufficient to provide the teacher with good enough visibility of how deeply the students understand certain topics, and that evaluation of produced artefacts may reveal limitations in students' conceptual understandings only at later stages in the project cycle. Therefore, the author needed a method to assess students' conceptual understandings early enough during the project, so he could provide feedback on time.

In this method students were asked to present in a face-to-face session an overview of the new concepts, tools and technologies they have been learning, as well as summarise and group studied topics and analyse how those topics relate to the project work. Furthermore, they had to explain how they have been using these in their work during the project and indicate the literature and resources they have been using.

The personal assessment chart

The personal assessment chart is a tool the author created to summarise a student's learning process. The chart contains sections outlining the learning outcomes of study-units that are integrated in the project, roles and responsibilities of the student in the project team. The individual learning objectives of the student are also identified, along with the concrete artefacts the student will be contributing to produce and a set of generic competencies the student is expected to develop and demonstrate during the project.

The student is responsible to maintain his/her assessment chart throughout the duration of the project. By documenting the topics listed above him/herself, the student demonstrates they understand in a clear way their role in the project as a developer and as a learner. The personal assessment chart can be considered as the student's 'work and learning' contract.

The personal assessment chart is used by the teacher and student during several guidance situations to make sure the student remains focused and on track in relation to his/her development work and learning process. At the closure stage of the project, the chart is used by the student to reflect on their learning progress and to make their own self-evaluation. The teacher and project manager use the chart to evaluate how well the student met his/her learning and development goals.

Currently, the personal assessment chart is a Excel file with a layout that easily allows students to identify and group the topics listed above. Appendix I shows an example of the chart.

Student's self-evaluation

Despite the term 'self-evaluation' this is not only an evaluation method, but also an important guidance tool. During the closure stage of the project, students are asked to use their personal assessment charts to reflect on their learning progress, their work as developers and how well they achieved their goals. This is done during a face-to-face guidance meeting and the main objective is to have the student themself analysing, evaluating and externalising his/her contributions and learning achievements.

When making the final evaluation of the student, the teacher and project manager will use this information to base a final decision about grades.

The table below summarises the guidance and assessment methods and tools discussed in this chapter.

GUIDANCE AND ASSESSMENT METHODS AND TOOLS	DESCRIPTION
Face-to-face meeting	Open discussion with students to assess and support their learning progress. Discussions should be conducted in a way that stimulates reflective thoughts for students.
Learning diary	Online tool where students write and reflect on their learning journey. Teachers use this tool to remotely follow students' learning progress and activities. Frequency should be of at least one entry per week.
Evaluation of artefacts	Project manager, subject-matter-expert, or teacher evaluate artefacts produced by students and how well they have applied professional methods and tools to generate the artefact. Evaluation can be done offline or during face-to-face meetings with students.
Student's demonstration of learned theory	Control mechanism to enforce students to research and study relevant theory up to certain dates in the project learning cycle. Currently, these are face-to-face sessions where students present and discuss the new concepts, tools and methodologies they have learned.
Personal assessment chart	Tool used by students to summarise their individual learning objectives, roles, and responsibilities in the project. It represents the learning and working "contract" of the student with the project stakeholders. It is a fundamental tool to help students and teachers to keep on track, and also to support the self-assessment and evaluation at the end of the project learning cycle.
Student's self-assessment	Students use this method at the closure phase of the project learning cycle to reflect and evaluate their learning progress. The personal assessment chart is used as a basis for reflection and evaluation.

Table 1. Summary of guidance and assessment methods and tools.

Working and learning during different phases of the project

The previous sections describe the guidance and structural elements that need to be in place for a project to become a successful learning environment. Next, it is described how guidance takes shape in different phases of the project. To simplify the description let's assume that students join a project in the beginning of a semester and work on it during a calendar time of 16 weeks.

The author has observed that learning in the project occurs through four major stages:

1. Start.
2. From beginning to half-way.

3. From half-way to the end.
4. Closure.

These stages form a learning cycle in the project. Students can participate in more than one cycle, for example, if they work on the project for two consecutive semesters. When planning and structuring the activities within these stages the author has used as references learning cycles described in the literature of LbD (Raij 2007), project-based learning, and problem-based learning.

The table below illustrates the different phases in a project and how often different guidance methods are used.

"PROJECT LEARNING CYCLE (16 WEEKS)"	"START (W 1-3)"	"BEGINNING TO HALF-WAY (W 4-8)"	"HALF-WAY TO THE END (W 9-14)"	"CLOSURE (W 15-16)"
Face-to-face meetings	• •	• •	• • •	• •
Learning diary		• • • • •	• • • • • •	•
Evaluation of artefacts		•	• •	•
Dem. of learned theory		•	•	
Personal assessment chart	•	•	•	
Student's self-evaluation				•

Table 2. A 16-week learning cycle in a project and frequency of guidance methods.

Start

During this stage the project team is formally assembled observing the requirements described in the previous chapter. Team members meet each other in more detail and the team-building process starts.

During this stage the team starts to familiarise itself with the project background and objectives. The teacher's guidance is focused on team-building and ensuring that all relevant information needed for a good understanding of the project background and objectives is available for all team members. A workshop or meeting with the project stakeholders should be arranged so all team members can personally meet the stakeholders and discuss the background and goals.

From a learning perspective the teacher encourages students to start identifying relevant theory areas and technologies related to the project.

Towards the end of the start phase students are guided to identify their current levels of competency and skills in regards to the project background and goals, as well as identify their roles and responsibilities in the project and also set their individual learning goals.

Identification of current skills and competencies relevant for the project

This is a pre-requisite to enable students to independently plan and negotiate their individual roles within the project team and also allow them to independently set their learning goals.

Setting individual roles, responsibilities and learning goals

Once students have a high-level understanding of what the project will require from them and what the possible roles are that they can take in the team, they are able to set their individual learning goals.

Setting individual learning goals should be done in alignment with the learning outcomes of the study-units from which they will receive credits.

An important guidance and assessment tool used by the teacher at this stage is the personal assessment chart. At this stage the student should be able to summarise his/her roles, responsibilities and learning goals in a first version of their personal assessment chart.

From beginning to half-way

Learning new concepts, tools and technologies

During this stage students start to climb their learning curves and will be more involved in studying and researching concepts, tools and technologies that are new for them and that will be needed during the development work in the project.

Teacher guidance is therefore focused on support students learning these new concepts. This can be, for example, providing leads to relevant knowledge bases, literature and resources; facilitating student access to ICT laboratories so they can install, test and experience new technologies and organising learning workshops where experts can teach key topics to the students.

Useful assessment methods at this stage are learning diaries, face-to-face meetings and demonstration of learned theory.

Creating a better understanding of individual roles, responsibilities and artefacts

At the same time that students research new concepts they also start to work on the project tasks and therefore will start to create a better understanding of what are their individual responsibilities in the project and what are the artefacts they will help to develop during the project. This information should be used to update their personal assessment charts. At this stage the personal assessment chart should contain a quite

accurate picture of the student roles, responsibilities and learning goals in the project. Some details about artefacts might still be missing but the roles and responsibilities should be clear. At this stage, the personal assessment chart can be considered as a 'work and learning contract' between the student and the project team.

From half-way to the end of the project

Delivering artefacts

At this stage the project team should start delivering the artefacts that will meet the goals set in the beginning of the project. Teacher guidance is therefore focused on supporting students to produce the required artefacts. This support however should not be understood as a direct intervention of the teacher to help students to complete tasks. Instead, it should be understood as indirect and reflective questioning of students' activities to help them to realise themselves what they need to produce, at what quality level and how to achieve it. The personal assessment charts can be used during this stage to make sure the students remain focused on the responsibilities and learning goals set during the first-half of the project. Minor changes can be made at this stage.

Useful assessment methods in this stage are the learning diaries, face-to-face meetings, evaluation of produced artefacts and personal assessment charts.

Closure

Reflecting on the learning process and student's self-evaluation

At this stage students stop working on project tasks and concentrate on summarising what has been produced (the artefacts) and what has been learned. Teacher guidance is focused on supporting students to reflect on their learning processes and produce their own self-evaluations. The personal assessment chart is used here to help students reflect on their achievements and how well they met their individual learning goals.

Final evaluation of students

For the final evaluation of the student, three factors are used:

1. The student's self-evaluation.
2. The project manager's evaluation of the quality and usefulness of the contributions produced by the student, and how well the student fulfilled his/her responsibilities in the project.

3. The teacher's own evaluation of how well the student met the individual learning goals and how well s/he demonstrated the generic competencies listed in the personal assessment chart.

Students' feedback

Feedback collected from students during the year of 2011 and spring term of 2012 reveals how students perceive learning under the approach described in this article.

Numeric feedback on a scale of 1 to 5 indicates that students have had positive experiences in all assessed areas. Overall results exceed the average results provided by students participating in regular study-units.

Assessed areas relate to the overall success of the implementation, how well guidance has supported student's learning, how much students think they can apply learned concepts in the future and how compatible the amount of work and difficulty level of the project was in comparison to the amount of gained credits.

Verbal feedback provided by students provides a more detailed view of student's experiences and opinions.

Positive feedback relates to experiences with teamwork, students' autonomy, flexibility with studies, received guidance, practical work and effectiveness during studies.

The comments below illustrate these aspects.

> Teamwork in the project and atmosphere was great. I felt I was part of the team. It was also nice to do some practical tasks. Tutoring was also done well. I liked the freedom also.

> This approach changes the way of learning. It is based on practical tasks more than theory-based tasks, which makes us enjoy more what we are doing.

> Compared to normal studies this approach is significantly more effective.

> Studying with this approach has been really educational and interesting. Tutors gave good support with all issues and the study structure was clear.

> This study approach is innovative and flexible. Students can choose to study at their own pace. Guidance is available when needed.

Feedback indicating negative experiences and revealing areas that require further development in the model relate to the clarity and meaningfulness of tasks assigned to students, the need for more learning workshops, students not being able to manage time and deadlines properly, and that the approach demands a lot from students.

The comments below illustrate these aspects.

> Some of the tasks should have had more specific instructions. It would also be important to make sure that the tasks match with the objectives of the courses. If in some courses there's a need to learn how to use a particular computer program, teaching should be provided. Learning a computer program by oneself is a bit too time consuming. The amount of work was okay as a whole but because of the slow start everything had to be done at the end.

> Succeeding with this study approach requires a lot from the student, but if the right students are selected for the projects we can really achieve good results.

> There is no specific timeline for the reports hence it may cause 'laziness' in one's mind. In the beginning, I was very confused, and it took quite some time for me to get used to this study method.

Concluding discussion

From a teacher's perspective, applying the guidance approaches described in this article is not an easy task. Transferring control and learning responsibility to students requires from the teacher the ability to deal with uncertainties, persistence to systematically carry-on with all necessary guidance activities, and self-confidence that they will be able to fairly evaluate students against the expected learning outcomes in the complex scenario created around the R&D project.

Among the several challenges faced along the way the author can list, for example, dealing with teamwork and team dynamics issues, keeping students motivated, evaluating if students are really reaching their learning outcomes at an expected level, dealing with the dichotomy of trust and control, dealing with the contradiction of measuring learning or measuring work effort and controlling used time to make sure that resourced hours are not exceeded.

Controlling the amount of time used requires special attention, as guidance is no longer concentrated on pre-defined contact sessions as in regular study-units. Instead, guidance time is scattered along several events throughout the 16-week project cycle, and it is difficult to define in advance how much guidance time will be needed for each project. If the teacher does not monitor and control used time in a real-time manner, there will be a considerable risk that resourced hours are exceeded.

Some of the challenges above will probably always exist as long as we are dealing with students in formal learning setups. Other challenges can be minimised by further developing the described guidance model.

For example, dealing with the contradiction of measuring learning or measuring working effort needs further experiences and further development in the model. As described above, the author observed that the teacher's role should focus on supporting the learning process and should not be mixed with a project manager role. From this point of view, a good direction to move in would be to transfer the responsibility of monitoring worked hours to the project manager. This could be a more natural approach as project managers are the ones that should be monitoring the usage of resources allocated to the project, not the teacher. The project manager is the one that ultimately is accountable for producing results and therefore they should find ways to track how efficiently results are being produced. On the other hand, student effort is not only used to perform project tasks, but there is a good amount of effort dedicated to study and research new concepts, tools and technologies. Following and assessing study efforts should remain under the teacher's responsibility.

Measuring learning is another challenge that needs further development in the described approach. Although the author is opting for approaches that preserve control and autonomy with the students, in some situations these approaches may not be the most effective. Therefore, there is a temptation to use teacher-centric methods such as examinations to measure certain aspects of students' learning. The author hasn't tried teacher-centric methods because it would go against the pedagogical principles we have adopted. Nevertheless, the author feels there is a need to better assess how deeply students are learning new concepts, tools and technologies. At present, the author is trying the method demonstration of learned theory to address this area and he is looking for other student-centric methods as well.

Despite these challenges the author has observed several positive outcomes. The author has observed significant progress in students' abilities to embrace their responsibilities and learn in a self-directed and independent manner. This has a direct link to their motivation levels. When they start operating in a self-directed and independent manner, they become more pro-active and more motivated. They see research and investigation activities as natural tasks of their project work. As a final example of a positive outcome, the author observed that students finally start to realise the benefits of collaboration. They see themselves as valuable individuals in a team where each member is simultaneously a contributor and a consumer of knowledge, and they all depend on one other to successfully reach their objectives.

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Appendix 1. Example of personal assessment chart, with information produced by a student in the 6th week in the project cycle.

TERM AUTUMN 2012				
Learning outcomes stated in curriculum. The student is able to:	**Responsibilities and deliverables of project corresponding to learning objectives**	**Student's self-evaluation**	**Project manager evaluation**	**Teacher evaluation**
Understand basic concepts of project management: project organisation, roles and responsibilities.	Preparing project organisational chart, stakeholders register with roles and responsibilities are listed explicitly.			
	Clearly defining project background, organisational chart, business case, project objectives and aims (both long-term and short-term).			
Follow good project practices and preparations of project management.	Learn and follow good practices when doing the project, such as spending considerable time with project planning...			
	Listing project assumptions and constraints.			
Apply appropriate tools to support the project management process.	Learning and using project management tools such as teamworkPM, and other tools to work in team efficiently, such as making use of email for communication, and DropBox for sharing documents			
Understand and utilise the principles of ICT project management models and methods within the IT/IS environment.	Monitoring the project by: recording hourly report, using Excel to produce a chart of progress progress, producing weekly progress report, and based on these reports, analysing and producing monthly status reviews.			
Control the project work, schedule and finance, and effectively communicate project data while utilising appropriate methodologies and software.	Preparing various deliverables related to scope management and time management.			
	Preparing questions for project meetings and sending the questions to meeting attendees so that they have enough time for preparation.			

TERM AUTUMN 2012				
Understand the importance of management & leadership and monitoring & control as success factors for successful project management.	Acting as a leader in my subproject, applying practices and knowledge for leadership when doing the project, learning to differentiate between project manager and project leader, helping project leaders proactively and contributing to the team's project management knowledge.			
	Monitoring the project closely; reflecting project changes in efficient and timely manner; adjusting the project constraints, especially scope and time constraints according to the changes occuring during the project.			
Recognise project's success factors and possible pitfalls of project management.	Establising clear goals and objectives of the project, clarifying success factor, defining measures for project success, monitoring the project, finalising project by preparing final project report and presentation, lesson-learned report.			
	Brainstorming and listing some risks related to the project, and planning in advance some ways to mitigate the risks.			
Understand how management accounting can support the strategy of an organisation.	Modeling the core, sub and supporting processes of the customer's business.			
	Drawing a process flow chart for parts of business operations or core process.			
Analyse the profitability, liquidity and capital structure of an organisation.	Getting familiar with customer's logistics operations, describing in detail about inbound and outbound logistics of whole order-delivery process.			
	Describing the whole order-delivery process in a flow chart which covers the whole chain from end customers to manufactureres/ suppliers.			
Analyse financial statements and calculate key figures of business operations.	Investigating customer's bookkeeping, invoicing, software and finance systems.			

TERM AUTUMN 2012				
Create plans and forecasts for an organisation.	Describing customer's operations and processes.			
	Finding what phases there are in customer's supply chain.			
Discuss budgeting and its role in planning, control and decision making.	Determining which logistics performance and KPI for logistics flows in customer's operations.			
	Suggesting how often suggested KPI be measured and reported.			
Analyse the profitability of investments.				
Competence	**Includes**	**Student's**	**PM**	**Teacher**
Learning competence	Self-directedness, self-initiative, collaborative learning, sharing knowledge.			
Ethical competence	Taking responsibility for one's own actions and its consequences. Working according to ethical principles.			
Working community competence	Pro-active communication and interaction with the work community. Regular participation with scheduled events. Committing to project's tasks. Meeting deadlines. Decision making in unpredicted situations. Ability to supervise tasks and apply principles of organisational management.			
Innovation competence	Ability to conduct research and development activities applying existing knowledge and methods of the field. Creative problem solving. Development of working methods.			
Internationalisation competence	Ability to operate in a multicultural environment. Communicative skills in international and multicultural environments.			

Development of entrepreneurship education in vocational teacher education – Case the HAAGA-HELIA School of Vocational Teacher Education

Heli Potinkara and Heli Viirola

Introduction

The world of work is changing constantly. Global competition, the increased use of information technology, productivity growth and the readjustment of human and social values are factors driving this change. Fundamental changes in the organisation of work and in the structure and age profile of workforces are taking place. Fewer workers are permanently employed, which calls for flexibility and adaptability.

This continuous change introduces uncertainty and complexity. At the same time new alternatives, interesting and greater opportunities and new career paths and choices emerge for those in the labour market. Besides professional knowledge and skills, a sense of initiative and responsibility, pro-activity, life management skills as well as the ability to seize career opportunities are becoming more and more vital competences in the dynamic labour market. Furthermore, creativeness as well as team working and problem solving skills are emphasised in modern work environments. All of this gives good arguments to suggest that an entrepreneurial mindset and behaviour are required at all levels.

The European Commission has specifically linked the development of entrepreneurial attitudes and behaviours to education and training. Entrepreneurship education can promote an entrepreneurial and innovative culture in Europe by changing mindsets and providing the necessary skills. Vocational education and training as well as vocational competence play a key role in promoting Europe's economic competitiveness and prosperity. Therefore, the development of entrepreneurship in vocational education is vital in Europe's response to its challenges of global com-

petition. Vocational teachers and vocational teacher education are key actors in this development process, which aims to facilitate the learner's future operation in the labour market, either as an entrepreneur or in the employment of others.

This article focuses on the development of entrepreneurship education in vocational teacher education. A model of Entrepreneurship Education Programme created and implemented in the HAAGA-HELIA School of Vocational Teacher Education is presented. This programme was developed in collaboration with Omnia, the joint authority of education offering wide-ranging vocational education. The partnership concept elaborated between these two educational institutions is also discussed. At the beginning of this article key point strategies and guidelines in entrepreneurship and entrepreneurship education in the EU and in Finland as well as the concept of entrepreneurship education are reviewed to give background to the main topic of this article.

Entrepreneurship and entrepreneurship education on the EU agenda

At present entrepreneurship, entrepreneurship education and teacher education in entrepreneurship have been considered key factors in facing the challenges of the European economy and have been addressed by several strategies and initiatives on the EU level in recent years.

Entrepreneurship in EU strategies

At the end of last century the European Union faced economic prosperity. However, the globalisation and new knowledge-driven economies were becoming an increasing threat and there was a need for transformation in economy and society. To meet these challenges the Lisbon Strategy was launched at the European Council in 2000 in Lisbon, where a ten-year programme was adopted aimed at revitalising growth and sustainable development across the EU. The Union set itself a new strategic goal for the next decade, "to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion". (Lisbon European Council 23 and 24 March 2000 Presidency Conclusions.) The Lisbon Strategy was relaunched in 2005 after initially moderate results and became refocused on the twin objectives of growth and job creation.

This relaunch made enterprise and industry policy one of the priorities in Europe. (European Council Brussels 22 and 23 March 2005 Presidency Conclusions.)

The Europe 2020 Strategy aims at opening opportunities for business and to create growth and jobs in today's difficult economic climate (Europe 2020). The Entrepreneurship 2020 action plan, recently published by the European Commission, sets out a renewed vision and a number of actions to be taken at both EU and Member States' level to support entrepreneurship in Europe (Entrepreneurship 2020 action plan).

Entrepreneurship education on the EU agenda

The European Commission has specifically linked the development of entrepreneurial attitudes and behaviours to education and training and is committed to promoting education for entrepreneurship at all educational levels. The objective of the Commission Green Paper of January 2003 on Entrepreneurship in Europe was to initiate a discussion on the role played by the spirit of enterprise and how it can be reinforced (Green Paper Entrepreneurship in Europe). According to this document education and training should contribute to encouraging entrepreneurship, by fostering the right mindset, awareness of career opportunities as an entrepreneur and skills.

The development of a sense of initiative and entrepreneurship is one of the eight key competences recognised at EU level in the Key Competences Reference Framework (Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning). These key competences are determined as those that all individuals need for their personal fulfilment and development, active citizenship, social inclusion and employment. A sense of initiative and entrepreneurship has been defined by the European Parliament and the Council as:

"... an individual's ability to turn ideas into action. It includes creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. This supports individuals, not only in their everyday lives at home and in society, but also in the workplace, in being aware of the context of their work and being able to seize opportunities, and is a foundation for more specific skills and knowledge needed by those establishing or contributing to social or commercial activity. This should include awareness of ethical values and promote good governance."

(Recommendation of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning.)

According to the European Commission website (Education & Training for Entrepreneurship) the importance of the entrepreneurship education has been recognised in most EU member states and the implementation is going on across Europe. However, it is stated that there is a need for promoting various programmes and activities more systematically. Information on projects, collections of good practice, policy documents, reports and studies launched by the Commission are published on the above-mentioned website.

Teacher education in entrepreneurship education on the EU agenda

Teachers have a central role in the development and promotion of entrepreneurship education together with other stakeholders such as regional and local authorities as well as the private and non-profit sector. According to recent definitions entrepreneurship education is about 'life-wide' as well as 'lifelong' competence development. The objective is to develop the ability to act in an entrepreneurial manner. Therefore, emphasis is given to attitude and behaviours instead of knowledge about how to run a business. It is vital to create learning processes and environments that enable students to turn ideas into action. This calls for active, learner-centred pedagogies as well as learning activities and experiences in the real world. A fundamental shift away from traditional approaches is necessary and teachers have to adapt to the new role of a learning facilitator. As a result, changes in the way teachers themselves are educated are required. (Entrepreneurship Education: Enabling Teachers as a Critical Success Factor.) The need for increased support for teachers and educators in several key areas has been outlined in the Oslo Agenda (The Oslo Agenda for Entrepreneurship Education in Europe). The agenda provides concrete proposals for various stakeholders.

More recently two high level EU Symposia were organised in Budapest and Istanbul to determine how to develop effective teacher education systems for entrepreneurship. As a result the Budapest Agenda was created (The Budapest Agenda: Enabling Teachers for Entrepreneurship Education). The aim of this agenda is to provide a catalogue of measures to take forward the development of teacher education in entrepreneurship. One of the measures proposed is to make entrepreneurship modules compulsory for student teachers. It is also suggested that in teacher education the same practical methods should be used that teachers will use with

their students. Other proposals include the development of sustainable and systematic partnerships with different stakeholders, the development of assessment, curricula and strategies for entrepreneurship education, as well as the development of communities of entrepreneurship educators.

Entrepreneurship education in Finland

In Finland one of the objectives of the Ministry of Education and Culture is to promote an entrepreneurial spirit among Finns and make entrepreneurship a more attractive career choice. Entrepreneurship education is considered important on all educational levels. (Ministry of Education 2009.)

To secure economic growth and employment in Finland, the objectives of the policy programme in the parliamentary term 2007–2011 focused on the preconditions for entrepreneurial activities, on fostering willingness to become an entrepreneur and on increasing growth entrepreneurship. It was considered crucial that also in the context of future policy measures, particular attention should be paid to the above-mentioned objectives. (Policy programmes Parliamentary term 2007–2011.)

The guidelines for entrepreneurship education elaborated by the Ministry of Education and Culture in Finland are in line with the recent definitions of entrepreneurship education on the EU agenda. According to these guidelines:

”Entrepreneurship education is considered a much broader concept than entrepreneurship as a practice of trade. As a concept, it also encompasses training for entrepreneurship. Its components are an active individual with initiative, an entrepreneurial learning environment, education and training, and active and enterprise-promoting policy in society.”

(Ministry of Education 2009.)

Entrepreneurship education is part of lifelong learning. Different levels of education have different priorities regarding entrepreneurship education. In general education, the positive attitudes, basic entrepreneurial knowledge and skills as well as an entrepreneurial way of operation are supported and developed. At the secondary level and in higher education, the knowledge and skills are developed further, including competencies relating to entrepreneurship. (Ministry of Education 2009.)

Vocational education and training offers a practically oriented path to entrepreneurship. Apart from gaining knowledge about entrepreneurship, vocational students also develop entrepreneurial skills in practice at a workplace. In adult vocational education and training the required

knowledge and skills are mainly demonstrated in authentic work situations. The core curricula include entrepreneurship either as a compulsory or elective component. It is considered important to develop ongoing vocational training for the purposes of competence building in entrepreneurship and to promote regional co-operation between different stakeholders. (Ministry of Education 2009.)

Higher education has multiple ways of promoting entrepreneurship. The most important are promoting entrepreneurial attitudes, creating embryonic innovations and, once entrepreneurship has been stimulated during studies by knowledge and innovations, enabling consequent activity to materialise. The role of higher education relates also to promoting growth-oriented business. (Ministry of Education 2009.)

The guidelines for entrepreneurship education emphasise the role of networks of different stakeholders in the development of the objectives and content of education, learning environments and an action culture, which enhance the learner's entrepreneurial skills and life management (Ministry of Education 2009).

How is the concept of entrepreneurship education defined?

As was discussed in previous chapters entrepreneurship is seen as a competition factor in Europe as well as in Finland. There is a need to create new entrepreneurship and new innovations so that Europe can succeed in the global market. One of the main questions is, 'Which factors influence entrepreneurship and its growth at the individual and communal levels?' It is important that enterprises have good conditions, markets and opportunities to operate in society. It was thought earlier that entrepreneurs possess permanent and special characteristics, which cannot be learned. At present it is believed that entrepreneurial characteristics can be learned, in favourable circumstances. In this situation educational institutions on all levels have an important role to strengthen individuals' beliefs in their own abilities to employ themself as an entrepreneur. There is a need to develop new entrepreneurship learning environments at schools, in vocational colleges, in universities of applied sciences and in universities. Creativity and acting innovatively, as well as the ability to risk-take and passion for learning are important factors in entrepreneurial learning and pedagogy. There is a need to create new services, new products and new

kinds of performance models in working places. Furthermore, there is a need for new approaches to enhance quality and productivity.

It is understood that entrepreneurship can be learned and one can grow into it. Different kinds of learning solutions, which strengthen students 'as well as teachers' entrepreneurship and entrepreneurial spirit and mindset, have been developed at many schools, in vocational colleges, universities and universities of applied sciences. There are different kinds of aims for entrepreneurship learning. Roughly these aims can be divided into two categories: internal and external entrepreneurship (Kyrö 2005). Internal entrepreneurship refers to personal habits and abilities to act and take a responsibility for one's own life as well as in one's studies and work. External entrepreneurship is referring to those actions in learning where the aim is to start a real business. In learning this students are then developing their business plans and are learning how to run a business. According to Kyrö (2005) there is also the third concept, an organisational entrepreneurship, which refers to organisations' entrepreneurial spirit and collective behaviour.

There are many negative attitudes towards entrepreneurship and entrepreneurship education in educational organisations, especially among teachers. It has been thought that entrepreneurship education is integrating the hard business ideologies into education practices. The question is ethical by nature for many educators. In Finland there have been discussions about the term 'entrepreneurship education' among entrepreneurship education's developers. The content of the concept is not clear and many meanings are connected to it. It is proposed that instead of the term 'entrepreneurship education', the term 'civic education' should be used, which refers to a person who is active and responsible participant in society. However, civic education refers to an internal entrepreneurship and is too narrow to describe all of the actions that educational institutions are conducting, especially in the vocational sector in Finland today.

In the most recent discussions the main topic has been how to learn entrepreneurship and the entrepreneurial spirit. Conclusions have shown that there is a conflict between educational organisations' culture and entrepreneurial learning. The structures of educational organisations have been considered too rigid to easily integrate entrepreneurial learning into educational practice. Also, tight schedules and the teachers' collective agreement are factors that prevent integration (Gustafsson and Pesonen 2012). Teachers are accustomed to traditional classroom teaching, to working solo and being an expert in their own field. During entrepreneurship education there is a need for creativeness, curiosity, team working, problem solving, real working life assignment projects and communal work and

networking. Learning by doing is the main learning method. Traditionally, the teacher is setting learning objectives; in entrepreneurial learning, learning objectives cannot be set beforehand. The learning process and its guidance and coaching are important. What students have been taught and what kind of competences they have accumulated, can be assessed at the end of the learning process (Rae 2011).

In entrepreneurship education there are different kinds of aims and steps to achieve in order to become an entrepreneur: the first step is to learn to understand entrepreneurship, the second is to learn to become entrepreneurial and the third one is to learn to become an entrepreneur (Hytti and O'Gorman 2004). All these steps can be learned separately, but also simultaneously through students own company or co-operative (Hägg 2010).

The entrepreneurial way to act in teaching and learning means to enhance students' abilities to take risks in their learning, to solve problems, to act in teams and groups, to be creative and innovative, to search for opportunities and to be proactive. According to Heinonen, Hytti and Stenholm (2011), individual creativity hasn't a direct effect on individuals' ability to create new business ideas. Creativity has an effect on the use of creative strategies in searching for business opportunities as well as strategies based on knowledge acquisition. Both creative strategies and knowledge acquisition have a positive effect on business idea creation.

In entrepreneurship education models the teacher is a guidance counsellor or a coach. S/he refrains from giving lectures or suggest how to solve problems or what is the right way to proceed in the learning processes. To give feedback in the form of 'feed forward', to ask questions and to guide group-processes, are the teachers' main tools. New teaching and learning methods require student-centred thinking instead of teacher-led teaching. In vocational education the main pedagogical solutions are practice-based projects in co-operation with working life. Also Living Lab-models are used to develop new services, products and models for working life especially in universities of applied sciences.

When the aim is to start a new enterprise the focus of learning is on business idea generation and different business processes like customer relationship management, services and selling, financial management, as well as leadership and management. In vocational education there are many kinds of learning environments such as start-ups, incubators, co-operatives and Young Entrepreneur group training. A student, or a group of students, are doing their studies in their own enterprise where they learn entrepreneurship, entrepreneurial spirit and business processes as well as communication, team working and other social skills and methods. At

the same time students learn vocational content. When entrepreneurship education is implemented into an educational organisation's culture, teachers have the main and most significant role. It is necessary to take into account teachers' entrepreneurial competencies, his or her way to act and teach as well as how organisations make it possible to implement entrepreneurship education into practice. Today it is well known that theoretical, teacher-led lessons are not the best way to learn entrepreneurship. There is a need to create an organisation's entrepreneurial culture and new pedagogical solutions, as well as to develop new innovative learning environments.

Development of the Entrepreneurship Education Programme

The development process of the Entrepreneurship Education Programme at the HAAGA-HELIA School of Vocational Teacher Education (HH SVTE) is described in this chapter. The curriculum of HH SVTE is competence-based and the competence areas for the vocational teacher are guidance and counselling, work community and networking, as well as research and development.

The basic operating principles at HH SVTE are a research and development-oriented approach to work and learning connected to work environments and contexts, interaction, collaboration and networking. The Personal Development Plan (PDP) forms the starting framework of studies and guides the study process as well as provides the tools for competence assessment. The PDP process brings together the principles and competence areas of vocational teacher education, the teacher student's own study path, as well as the perspectives of their team, the work and their work community and working life. In the beginning of the studies, teacher students form teams of three-to-six persons in which they study, complete and share joint assignments. The Team Action Plan (TAP) supports teacher student's development. (Curriculum of the HAAGA-HELIA School of Vocational Teacher Education 2012–2013.)

During their studies teacher students are encouraged to develop and put into practice new pedagogical solutions and new processes to solve challenges in their work environments. This requires entrepreneurial attitude and skills like creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives. However, a few years ago there was a need to express more clearly the importance

of entrepreneurship education as well as integrate it into the curriculum of HH SVTE in line with EU strategies and national guidelines of entrepreneurship education discussed in previous chapters. It was considered vital to offer teacher students the possibility to develop knowledge and skills as well as new pedagogical solutions they need to guide their students' growth into entrepreneurship. Teacher students have shown the need to improve their competence in entrepreneurship education based on the survey that was carried out in spring 2011 and 2012 at HH SVTE.

Furthermore, it was considered important to create new forms of co-operation with Omnia, the joint authority of education offering wide-ranging vocational training. At the same time as these co-operation intentions between HH SVTE and Omnia, a broad national YVI-project was launched. The main aims of this three-year project are to develop the pedagogical skills of teachers in entrepreneurship education, to strengthen the network of entrepreneurship education developers and to integrate entrepreneurship education as a part of the curriculum and strategy in general and vocational teacher education. Also, the Virtual Learning Environment (www.yvi.fi) and the Measurement Tool for Entrepreneurship Education (http://developmentcentre.lut.fi) have been developed for those working in the field of entrepreneurship education. The YVI project offered a good opportunity for the development of entrepreneurship education for both organisations and consequently HH SVTE and Omnia joined the project together.

At the beginning of the co-operation Omnia was building a new entrepreneurship-learning environment, InnoOmnia, which offered many opportunities for a new kind of co-operation. At present InnoOmnia is a special learning environment as it brings working life into Omnia. InnoOmnia is a centre of expertise that brings together students, staff and entrepreneurs. It offers business space and an inspiring coaching programme for start-up businesses mainly in the service sector. Students work on projects together with entrepreneurs who act as positive role models. (www.innoomnia.fi; www.innoomnia.fi/node/60.)

Partnership between two different organisations is at the same time very enriching and challenging. Partnership in based on common knowledge creation and requires common vision and objectives. Individuals involved in the partnership have to have ability to communicate and act together. It is essential to build confidence between partners and therefore there is a need to know each other also on personal level. (Laferrière et al. 2010; Lee 2010; Ståhle and Laento 2000.)

The collaboration between HH SVTE and Omnia can be divided into four phases through which the partnership was created during the

first year of the project. These phases were: get to know each other, to discover a common objective, to model the form of collaboration and to stabilise collaboration. The most important phase was to discover a common objective in which respective partners' different competence areas and operations would complement and reinforce each other, resulting in a win-win situation. This objective materialised in the development of the model of the Entrepreneurship Education Programme for teacher students where both institutions have an active role.

This partnership consists of collaboration, assessments and development as well as coaching and communal work. The objective of this partnership is to produce collaboratively new entrepreneurship pedagogical solutions and new learning environments for entrepreneurship education. HH SVTE focuses on the development and testing of various collaboration models for the vocational teacher training programmes. It provides pedagogical competence in guidance and counselling, in work community and networking as well as in research and development. Omnia focuses on building and developing entrepreneurship routes for Omnia's various units. It provides pedagogical competence in entrepreneurship, which materialises in Omnia's entrepreneurship strategy policy, in authentic and creative learning environments as well as in coaching of students and entrepreneurs.

In the second year of the project the Entrepreneurship Education Programme was implemented in practice. In this pilot year about 20 teacher students participated in the programme. Feedback was collected during the year from teacher students, their teacher trainers and the teachers of Omnia, which gave valuable and important information for the development of the Programme. The project team also undertook regular self-evaluation discussions. According to the feedback received, more information about the Programme should be given at the beginning. The most positive experiences were linked to the inspirational learning environments offered by Omnia. Teacher students received new pedagogical ideas to be implemented in entrepreneurship education in their own institutions. Furthermore, it was also learned that in partnerships consisting of many actors it is important to define each actor's role and tasks, as well as make clear what each participant's responsibilities and rights are.

During the writing process of this article, the Entrepreneurship Education Programme is being piloted for the second time. The implementation of the Programme has been developed according to the feedback received from the first pilot but there is still a need to clarify processes. There is also a strong willingness to continue the collaboration between HH SVTE and Omnia after the project.

Entrepreneurship Education Programme in practice

The Entrepreneurship Education Programme in the curriculum of the HH SVTE is illustrated in Figure 1.

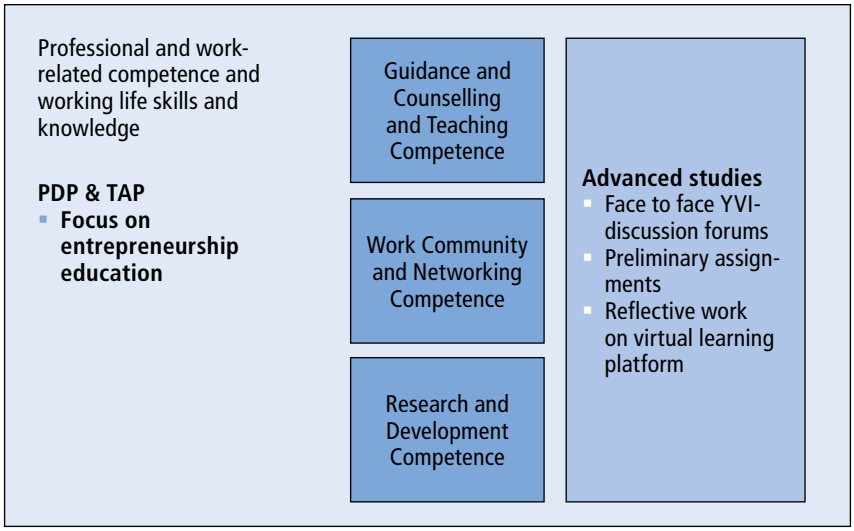

Figure 1. Entrepreneurship Education Programme in the curriculum of HH SVTE.

Teacher students who take part in the Entrepreneurship Education Programme have the opportunity to focus on the entrepreneurship education in all three-competence areas of the curriculum as well as in their advanced studies. They perform all or part of their studies in various authentic and creative learning environments offered by Omnia; the operational model of which consists of activities, learning processes and pedagogical approaches based on entrepreneurship education.

The model of collaboration between HH SVTE and Omnia, as well as the link to the YVI-project, is depicted in Figure 2. This concept brings together teacher trainers and teacher students from HH SVTE and teachers, education coaches and students from Omnia.

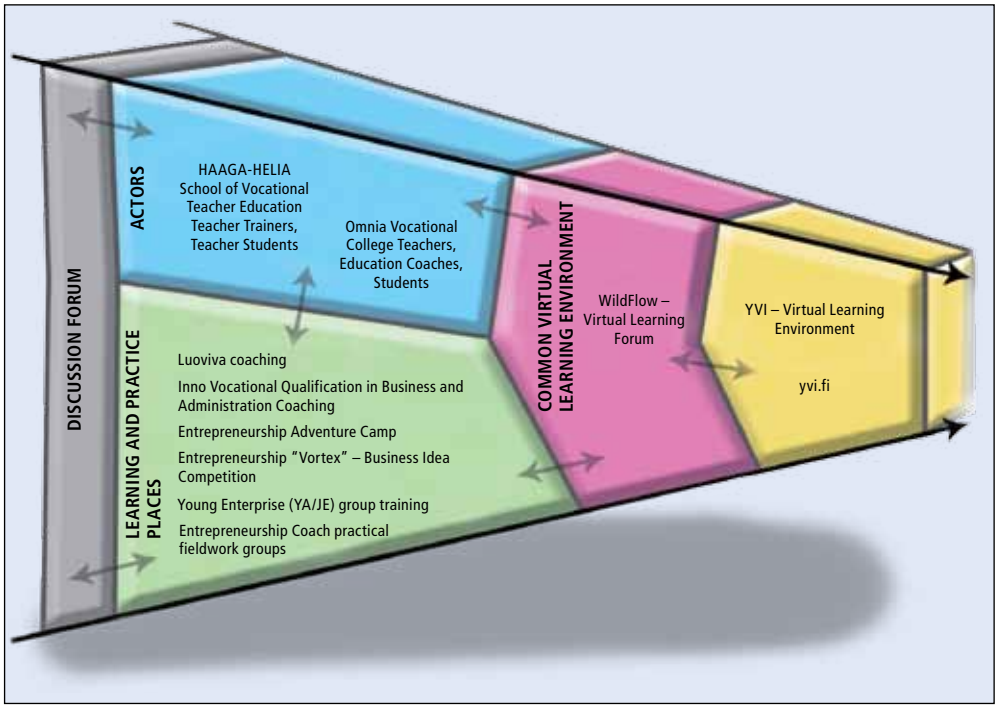

Figure 2. The model of collaboration between HH SVTE and Omnia (HH SVTE: Heli Potinkara and Heli Viirola; Omnia: Maria Korpi and Sini Nykänen).

Learning and practice places provided by Omnia for teacher students of HH SVTE are the following:

- *LUOVIVA Coaching* includes various different coaching sessions and is offered for those working in local SMEs and for those in the phase of creating their own business.
- Business economics and administration studies can be completed in authentic learning environments in co-operation with local entrepreneurs (*Inno Vocational Qualification in Business and Administration Coaching*).
- In *Entrepreneurship Adventure Camps* students form multidisciplinary teams to create business ideas. In the end of each camp teams represent their ideas to each other. Team working, interaction as well as innovation skills are learned in action.
- *Entrepreneurship"Vortex"- Business Idea Competition* is open to each student of Omnia and the objective of this competition is to produce new product and service innovations. Coaching of the competing teams focuses on presentation skills and on business plan creation.
- In *Young Enterprise (YA/JE) group training* students learn in one year how to take a business idea from concept to reality. They form

their own real enterprise and discover firsthand how a company functions.

- *Entrepreneurship Coach Practical fieldwork groups* plan and co-ordinate entrepreneurship weeks organised in Omnia and support and develop the entrepreneurship education studies of teachers in Omnia.

Teacher students of HH SVTE can take part in the planning and implementation of different coaching sessions in the above mentioned learning and practice places as part of their Teaching Practice study module. Furthermore, the performance of the other study modules, Teacher Activity in Communities and Networks, as well as Research and Development of Learning and the Work of Teachers, can also be integrated in the learning environments provided by Omnia.

In the Entrepreneurship Education Programme Advanced studies (Figure 1) include face-to-face discussion forums, preliminary assignments for each forum as well as reflective work on a virtual learning platform after each discussion forum. Discussion forums are thematic activity-based workshops where different learning experiences from Omnia learning and practice places are shared, reflected and assessed. Furthermore, the objective of these forums is to produce new ideas, pedagogical solutions and learning environments for entrepreneurship education.

Conclusion

Entrepreneurship education has been developed in HH SVTE in line with European and Finnish national strategies and guidelines. This development work contributes to the objectives of the Finnish national YVI-project.

The collaboration between HH SVTE and Omnia has been rewarding for both institutions. It has been an enriching experience and has enabled the development of entrepreneurship education in real learning environments of vocational education. The YVI-project has offered an excellent context for this collaboration, has given it national visibility and a forum to share experiences and compare the development work of different project partners.

The benefits obtained from the YVI-project and from the development process of the entrepreneurship education programme can be evaluated from the perspective of different stakeholders: teacher trainers at HH SVTE, teacher students taking part in the programme, project partners as well as actors of Omnia.

Entrepreneurship education has been in focus in HH SVTE during the development of the present curriculum, practices of teaching as well as the competence of teacher trainers. Their knowledge of entrepreneurship education as well as of its objectives and meaning has been promoted during the project. Also, tools for teacher education have been elaborated. The Entrepreneurship Education Programme has offered teacher students various learning environments, where they have been able to develop their competence in entrepreneurship education according to their personal learning objectives.

The YVI-project and the Entrepreneurship Education Programme have offered various benefits for those working in the project. First of all networks of entrepreneurship education have been created at different levels, the broadest being the network including all project partners. Smaller networks consist of partners working in various development groups. One of these is the network of vocational teacher education institutions, which has provided a profitable forum for discussion and peer assessment. This network will continue its activity also after the project has ended. Also the network formed as a result of the collaboration with Omnia has promoted the understanding and competence of partnership creation of project members.

In this article the results of the YVI-project are examined from the point of view of HH SVTE. Firstly, the Entrepreneurship Education Programme, which is based on a model of collaboration between two educational institutions, has been created and implemented in practice. Secondly, entrepreneurship education has been integrated in the curriculum and strategies of HH SVTE. The common outcome of the YVI-project is the Virtual Learning Environment and the Measurement Tool for Entrepreneurship Education, which can be benefited from in vocational teacher education.

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Versatile students in vocational education

Inquiry-based learning at HAAGA-HELIA Porvoo Campus depicted through curricular development work and student stories

Annica Isacsson

Abstract

A constitutive educational consideration that upper secondary vocational schools and universities of applied sciences in Finland constantly face is how to make sure that schools and the outside world are not separated, but integrated. The challenge is how to keep the vocational contents and methods in tune with the rapidly changing world and life, and make sure that students gain appropriate working life skills and competences, i.e. how to incorporate appropriate working life skills and competences with theoretical knowledge and know-how are of high interest in the field of vocational education and training in Finland at the current moment.

The constant changes that society and working life undergo advocate work integrated-learning concepts and environments in which companies and vocational educational institutes collaborate more and better. Hence, many universities of applied sciences and vocational business schools in Finland are in the process of developing tools and models for integrating working life skills better into education by identifying means to co-operate more closely with companies, for example.

The aim of this article is to reflect upon vocational working life integration development by presenting the inquiry-based model, architecture and curricula that HAAGA-HELIA University of Applied Sciences Porvoo Campus has adopted in order to support learning and to meet future challenges and demands.

Three student stories will shed light on the campus concept through their subjective experiences.

Key words: inquiry-based learning, student stories, Porvoo Campus

Introduction

Many universities of applied sciences and vocational schools in the Nordic and Baltic countries are in a process of developing tools and models for integrating working life skills better into education. Integrated learning opportunities between companies and educational institutes stress that the inquiry based, action-centric and experimental elements in learning are being developed with consideration to the changes in society and working life.

This ongoing change takes place in order to avoid situations in which the school produces knowledge that cannot be used outside the school context.

Two solutions to the problem of school learning have been put forward as recognised by Reijo Miettinen and Seppo Peisa (2002). The first is an attempt to break the individuality of learning by conceptualising the classroom as a community of learners in which the interaction and collaboration between students is essential. The classroom community is hence organised to simulate knowledge-producing expert communities (Bereiter, 1994). The second solution attempts to create a learning environment in which computers and electronic networks are utilised to access knowledge outside of school and to induce collaboration between students (Salomon 1996; Sinko & Lehtinen 1999).

Knowledge building, as argued by Scardamalia & Bereiter in 2006, represents an attempt to refashion education in a fundamental way, so that it becomes a coherent effort to initiate students into a knowledge creating culture. Accordingly, it involves students not only in the developing of knowledge-building competencies, but also in seeing themselves and their work as participators of the civilisation-wide effort to advance knowledge frontiers.

The assumption that learning does not occur in a vacuum, and that knowledge competencies should prepare students for life, is thus currently at the fore at many Finnish vocational secondary and tertiary institutions. However, creating communities of learners and experts, or introducing access to the environment through computers, is not enough if students are not integrated in authentic working life implementations and projects as proposed by Porvoo Campus. These new learning principles, processes and campuses are striving to create collaborative environments enabling learning cultures and knowledge acquirement and production that integrates with companies and organisations, thus enhancing real-life project-based education and problem-based solutions.

Moreover, in order to stimulate wellbeing, networking and innovation, today's schools must create spaces that attract people, rather than viewing the space as being purely functional (Bunting 2004). Desirable designs in schools include having 'friendly and agreeable' entrance areas, supervised private places for students, as well as public spaces that foster a sense of community, with particular attention to the colour used (Fisher 2000). Or, as Earthman (2004, 18) puts it: "There is sufficient research to state without equivocation that the building in which students spend a good deal of their time learning does in fact influence how well they learn".

A consideration during the creation of HAAGA-HELIA (HH) Porvoo Campus entailed its relation to its surrounding environment, involving both technology and the idea of introducing real life authentic projects to each semester implementation and learning modules. During the curricula process the HH Campus inquiry-based learning pedagogy and concept was shaped from the point of view of future students' working life skills, and above all of making sure that school and the outside world are not separated, but integrated. Other considerations were related to the wellbeing of staff and students, in order to stimulate, activate and enhance senses of community.

Furthermore, learning was also viewed as an interactive process of participating in various cultural practices and shared learning activities that structure and shape cognitive activity in many ways, rather than something that happens inside individuals' minds (see e.g. Brown et al. 1989; Lave & Wenger 1990). Accordingly, learning was seen as a process of becoming a member of a community and acquiring the skills to communicate and act according to its socially negotiated norms.

According to the inquiry-based approach as interpreted by Paula Sincero (2006), students learn best when they are at the centre of their own learning, hence indicating an active owner and experiences-related knowledge creation process. Inquiry-based learning is, according to Sincero, a learning process in which questions are generated from students' interests, curiosities and perspectives, as well as experiences of the learner. Sincero's theory proposes that when knowledge creation and learning grow from students' own questions, curiosities, and experiences, learning becomes an organic and motivating process that is intrinsically enjoyable.

If the question, inquiry and outcome(s) are truly meaningful to the learner, he or she will apply this newly-acquired knowledge to his or her own life by sharing knowledge and by taking concrete action in the world. Sincero's theory is informed by experiences in both formal and informal learning communities. It is this process that compels us to transmit

knowledge, understand and be compassionate in relation to others, or to push the boundaries of scientific knowledge and discovery (Sincero 2006).

The inquiry-based learning model was launched in Finland in 1999 by Hakkarainen et al., emphasising collaboration, teamwork and shared knowledge construction that is also stressed in the Porvoo HH Campus model (see figures 2 and 3).

Pedagogical considerations at HH Porvoo Campus

HH University of Applied Sciences Porvoo Campus is located approximately 50 km east of Helsinki, at the West Bank, close to the city centre of Porvoo, opposite the Art Factory. With a panoramic view over the Old Town and river, the campus is shared with another Finnish university of applied sciences and a branch of the City Office.

The HH campus offers bachelor level business and tourism education in three languages. The 1000 students studying at HH Porvoo Campus hence aspire to earn a Bachelor of Hospitality Management and/or Bachelor of International Business degree.

The new campus was opened in December 2010 as a result of a Living Lab approach involving a vast amount of collaboration with stakeholders, such as the City of Porvoo, development organisations, advisory board, architects, companies, staffs and students. The planning of the building and of the pedagogical model (curricula) was a parallel process that lasted throughout the construction process, roughly over a period of three years (2007–2010). The curricula and development work changed in the process, hence implying a constructivist approach.

50 companies were interviewed as a part of the campus development process. The working life competences that stemmed out of interview data involved project, research and development, coaching and creative skills.

The campus is open daily to the public and offers a cosy restaurant, a large professional library and a vast open entrance area that is considered the heart of the building, as well as a wide range of meeting places, hence advocating the sense of community as Fisher proposes (2000).

HH Porvoo Campus can be described as open, post-modern, transparent, innovative, well-equipped and filled with natural light, with spaces for teamwork, learning and embedded technology. The materials used in its construction were glass, steel and wood.

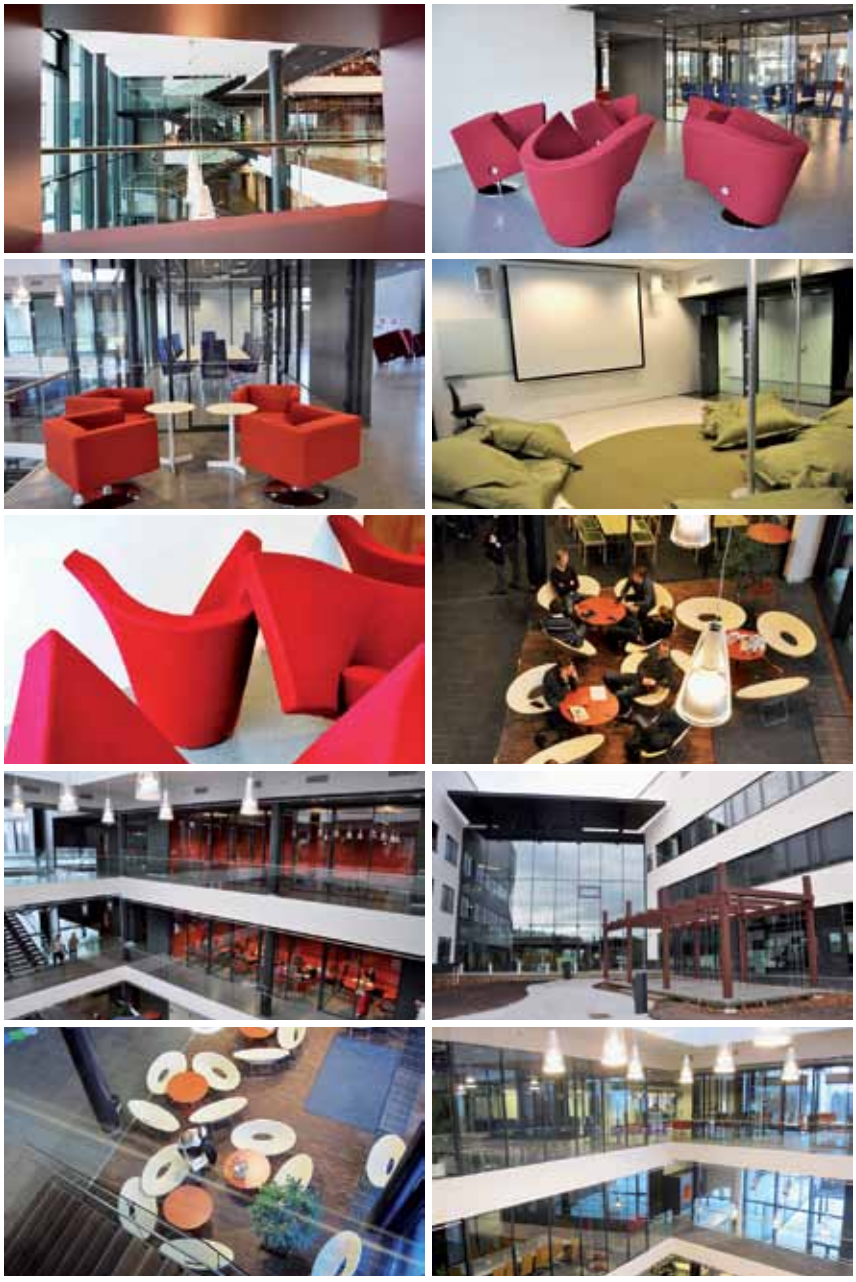

Figure 1. HAAGA-HELIA Porvoo Campus.

The future educational challenges during the HH Porvoo Campus project were considered to be lifelong learning, individuals with numerous identities, masses of global information and online collaboration. It was

stated in the planning stage that Finland can remain competitive only by being creative, using technology, offering vast educational possibilities and enhancing social and linguistic skills, as the future working environment is anticipated to be considerably different, i.e. global, digital and individual. The world is perceived to be changing through conversation, collaboration, communities and connections. Innovative companies need people who can network, solve problems, adjust and be part of change, in addition to being versatile, curious and open. Graduates with these qualities will have the greatest chance of obtaining employment and have the best opportunities to be successful in their respective careers. Learning at Campus is hence about collective knowledge acquirement, about participation in a culture and becoming its member (Porvoo Campus learning enhancement plan 2010).

The pedagogical competences agreed upon during the curricula process were related to trust, collaboration and participation.

The inquiry-based model at HH Porvoo Campus

The campus architecture and learning is hence inquiry-based, building upon a knowledge construction and knowledge acquirement culture as advocated, for example, by Scardamalia & Bereitner (2006). Futhermore, it supports Bunting's (2004) ideas that learning spaces should not only be functional, but also friendly and agreable.

The HH Porvoo Campus learning method thus advocates an active, student-centred learning approach, in addition to supporting the becoming of a member in a commmunity of knowledge construction. It builds its assumption on the idea that learning can be inquiry-based as well, thus enhancing a participatory knowledge building culture.

The implementations and curricula are also based on an assumption that students are curious and eager to learn, yet are in the need of structure, facilitation, courage and support. The students are seen as actors who take responsibility for their own learning. Students are hence treated as subjects, not as objects. They are viewed as being capable and innovative. Teachers, on the other hand, are the facilitators of students' learning and counsellors who support the knowledge creation and learning processes, in addition to the motivational and development processes. Learning occurs mostly in work-based projects, in authentic collaboration with working life.

The campus offers teamwork facilities and stimulates a spirit of activity, joy, freedom, experimentation, trial and error, learning and an agreeabil-

ity. Students receive their individual laptops on loan upon registration at the campus and much learning occurs in teams. They engage themselves actively in research projects development and innovation-work. It means that students are active players in teams and in real working life projects. Every semester has its own working life-based theme-related project. Both teachers and students work in teams. The role of the lecturer has thus changed in the process. Teachers have become facilitators and counsellors who support individual learning processes instead of providing formal knowledge. The idea is that teachers integrate theory with practice and build understanding and knowledge together with students and working life (see e.g. Eteläpelto 2007).

The inquiry-based model and HH campus curricula imply teamwork and collaborative skills in addition to creativity. The campus environment and learning spaces were planned to encourage and support teamwork as well as innovation. During the semester, working life-based projects were implemented, integrating learning with genuine interaction and with true inquiry with the outside world. Wellbeing was considered to be found in relaxing rooms such as the sack room as Bunting (2004) advocates. According to the campus' architect Jukka Sirén and his team, the transparent walls have a calming effect and stimulate learning, as learning is made visible and transparent, open and versatile.

As a part of, and during, the HH Porvoo Campus inquiry-based process, the students, working life representatives and teachers go through a process involving six steps:

1. Identification of development task (problem).
2. Adjusting task with the implementation module in question and with subject content and learning.
3. Agreeing upon working theory.
4. Acquiring knowledge.
5. Reflection.
6. Sharing of knowledge.

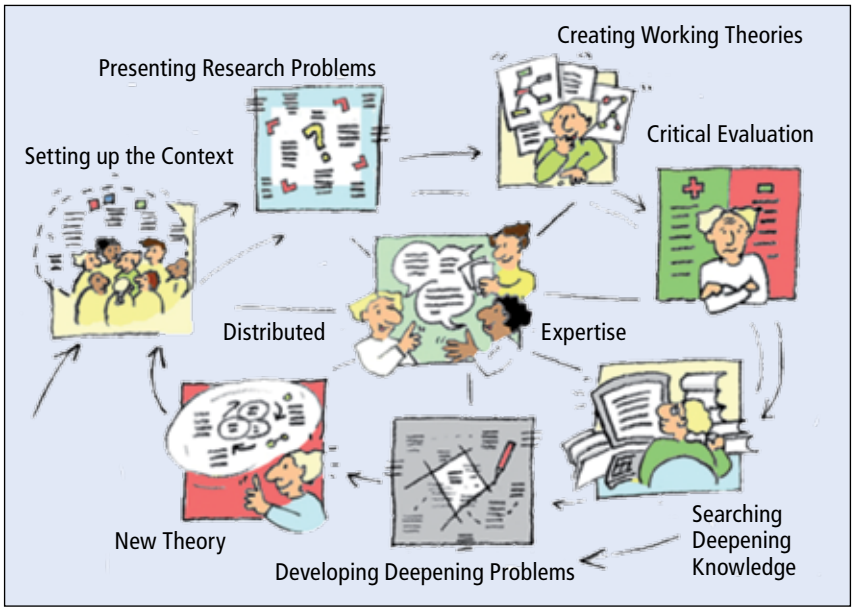

Figure 2. Inquiry-based Model (Hakkarainen, Lonka, Lipponen & Raami, 1999).

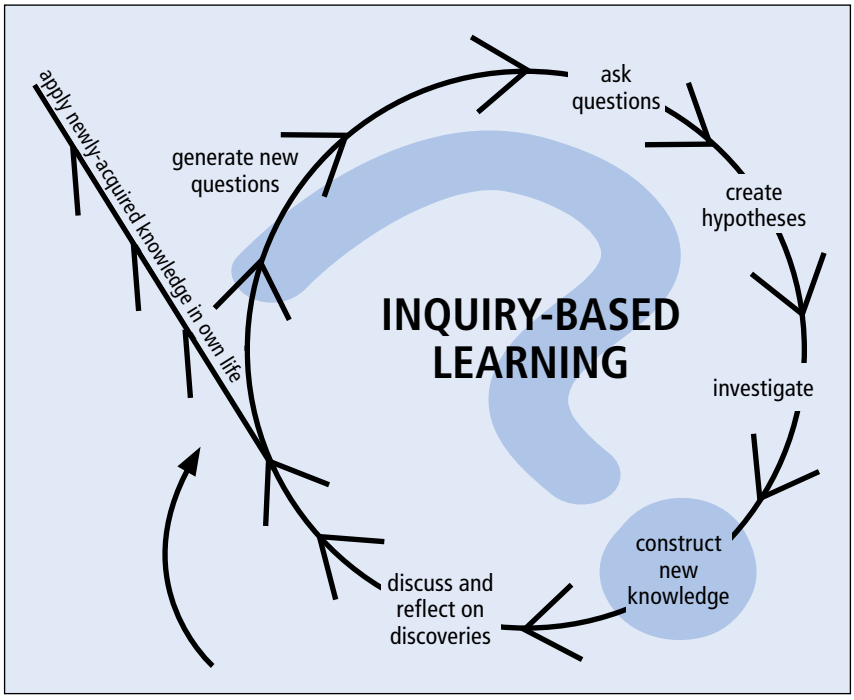

Figure 3. Paula Sincero's model of inquiry-based learning (2006).

If we compare Porvoo Campus' pedagogical inquiry-based model with the Hakkarainen et al (1999) model, the creation of context is missing from

the campus model, as are the critical and deepening elements, but both models advocate knowledge sharing and teamwork. The campus model was developed for students with the specific aim of collaborating with working life in authentic real-life projects, thus carefully considering the integration of course modules with subject theory and the development task and project at hand. Both Sincero's and Hakkarainen's models imply that the inquiry-based model outcome is new theory and knowledge, whereas the campus model is more focused on the active approach of acquiring knowledge without promising that new theory or knowledge will be the outcome. Sharing, learning and reflection are emphasised in the campus model.

Relating the campus model to Sincero's (2006), the first phase can be understood as the phase in which questions are asked in order to comprehend and identify the problem and task. The second phase is not about creating a hypothesis for testing any pre-determined views or theories, but rather the campus' inquiry-based model focuses on substance, learning and development aims (phase 2), and agreeing on working theory (phase 3) knowledge construction as indicated in Sincero's model (phase 4). Discussions and reflection on discoveries (phase 5), in addition to the sharing of knowledge (phase 6), thus generate new questions and development ideas.

Questions based on students' own knowledge, individual experiences, working life development and learning tasks form the base of the Porvoo Campus curricula. The curricula aim to stimulate activity and arouse curiosity, in addition to linking theory with working life. Learning with working life-based projects are assumed to stimulate activity and are created in order to avoid knowledge that cannot be used outside of school.

Learning is viewed as an interactive and iterative process of participating in various cultural practices and shared learning activities that structure and shape cognitive activity in many ways.

Accordingly, learning is seen as a process of becoming a member of a community and acquiring the skills to communicate and act according to its socially negotiated norms in which interaction and collaboration between the students is essential, as Brown & Campione (1994) and Rogoff (1994) suggest, and in which the students together build knowledge objects, texts and artefacts as Scardamalia & Bereiter (1994) indicate. The view is that students are considered to be unique, curious and capable, but also vulnerable, hence in the need of support, guidance and counselling. In HH Porvoo Campus curricula knowledge is assumed to be relative, but also objective.

The aim of this article was to reflect upon vocational working life integration by presenting the inquiry-based model, architecture and curricula that HH University of Applied Sciences Porvoo Campus has adopted in order to meet future challenges and demands.

Student stories

Six students were asked to write about their study experiences at Porvoo Campus. All students were third year tourism students, out of which two had recently returned from their exchange-year abroad. Three students replied to the request and their subjective stories can be found below.

Student story number one

I began my studies in HH University of Applied Sciences Degree Programme in Tourism in January 2010. It was the first time I had ever attended a college or a university so my expectations were based on what I had heard from other people and seen in the media. I had heard mostly positive things about HH, so my expectations were high.

Right from the beginning I noticed that HH emphasises independent work a lot in the studies. Group work also plays a major role. This was a positive surprise coming from a vocational institute where I studied business, seeing as the studies were not very independent and the instructors were closely involved in all projects from start to finish. I noticed that at HH the instructors are there to help you, but they try to make you find the solutions first by yourself, before turning to them to help you make progress with the projects.

As my studies progressed emphasis on independent work grew even more. You were the one responsible on keeping up with the course work. There have been points when I have felt maybe a little more guidance in the studies would not have hurt, even though I understand it is a good thing to make students feel responsible for their own progress.

At times I have also been a little confused as to what courses I should be taking and what exactly is required in order for me to graduate on time. Staying on track has been especially difficult during the times when I have been away for a while, like in the fall of 2011 when I was doing my exchange program, and this fall, 2012, when I was doing my international work placement abroad. Coming back and getting into the right courses after the periods abroad has been quite challenging.

Teaching methods at HH differ a lot from the teaching methods I experienced while doing my exchange period abroad at San Diego State University in America. San Diego State University (and as far as I know most universities in the US) focused a lot more on lectures and independent work at home, either by yourself or in groups. HH has lectures as well, but the emphasis is more on the actual work rather than on lectures. I see this as a positive thing; it is easier to learn things by doing them by yourself, rather than hearing how someone else has done it. Lectures are a good thing in the beginning of courses to give you the essential information you need to know of what is to come, and after that you can focus on the actual work. I believe HH has found a good balance with lectures and actual work.

The studies have included a lot of reports as well and students are required to reflect on their own experiences every now and then in the form of personal reports. This sometimes felt a little silly at first, but I do see the reasoning behind it. It is good to reflect on your own experiences and see how certain ways of doing things have worked personally for you and how certain things may have not. It is also good that the teachers at HH are interested in what the students have to say and are willing to make improvements if something is seen as being in need of it.

Overall I have been quite satisfied with the teaching methods used at HH University of Applied Sciences. It has been quite like what I expected when I first started my studies, and though it has been very different from the previous studying experiences I have had it has been a pleasant surprise. The balance between independent work, group work and the help you get from the instructors is what I see as the most important thing when it comes to making the studies feel useful and pleasant.

Student story number two

The study method of searching and developing is the main idea of HH Porvoo Campus and that is why studies include a lot of projects. The projects' mission is to create the bond between studying and working life so there are different affiliates, for example, small companies, who we, the students, work with. This is how we gain valuable knowledge on how to work in projects, how to first search for information and then use it and develop the issues and how to be innovative, for instance. All the skills gained are appreciated in working life. I have been part of three projects during my studies and all of them have taught me something. Mostly the projects have been creating and implementing some kind of event.

Seriously, when we have a project, we plan and do *everything* by ourselves. I have had various tasks: cook, waitress, programme planner… I try to get the tasks that are diverse from one another. This is how I learn.

Learning has always been easy for me. I actually do not have any specific learning styles. I feel that this campus' 'learning by doing' is my cup of tea. It has developed my working skills, courage, self-esteem and ability to adapt to different situations. I have always been pretty good at paperwork (for example, writing essays) but the ability to apply those skills to real life has been, and still sometime is, a challenge. Luckily, I learn quite fast.

Working as a group is one important way to work at HH and this method has, of course, both pros and cons. The positive sides are that together there will be more ideas and ways to think, for example. There are different personalities in a group, so diverse opinions can cause fights. Despite the possible differences of opinion, I see working in a group as fresh and stimulating.

In addition, the new Porvoo Campus is the centre of studying, working and co-operation. The learning spaces are open, so there is not the traditional hierarchy between the students and teachers. The aim is that learning together and sharing knowledge is easier. At first I felt that the campus is too clinical and I missed the old school. But, after couple of months I noticed that the open and comfortable classes are actually quite inspiring.

HH also provides a laptop for all students. The purposes are to support sustainable development and offer a modern tool for learning. In my opinion the laptop has helped to create certain assignments. It has also improved my technical skills, such as how to use different programs, Microsoft Office, for instance. And because the Internet is an endless source of information, it has been easier to filter information because I use the laptop and Internet practically everyday. In addition, I do not have papers and handouts all over the place. Of course, some students can have problems with concentration because of the laptop, since the Internet offers funnier distractions to learning. I personally believe that at a university of applied sciences, learning is everyone's own responsibility. If someone browses the Internet during lessons, that is okay by me. But then there is no need to cry if they do not pass the course.

All the spaces have modern equipment such as projectors. Some include also so-called smart boards. I think that technological devices can be helpful and in future their role as a learning tool will grow. But still, at the same time, it is important to handle the basics, for example, how to search information from books.

I will graduate in three years even if the duration of my degree programme is three-and-a-half years. I am motivated to graduate fast since I want to study more in the future. Probably it will be something else than what I am studying now, I am not sure yet.

All in all, for me the learning methods of university of applied sciences and HH fit. I personally believe that learning by doing is suitable for me because I practically learn what and how to do. Maybe someday I will try to apply to university but right now this is the right way for me.

Student story number 3

I have been studying Hospitality Management for two-and-a-half years now, of which I have completed one-and-a-half years at Porvoo Campus. I spent one year in England as an exchange student studying at the University of Lincoln.

First of all, thus far the whole Porvoo experience that I have gotten has been outstanding. I currently live in Porvoo once again after living one year abroad. I am from Helsinki and many of my friends drive from there to Porvoo for their studies almost everyday, but I moved here because of not wanting to spend time driving back and forth. The main reason, however, was that the last time I lived here for one-and-a-half years I liked it very much. I spent time on campus because of its atmosphere and I really liked to spend my leisure time there as well. Nowadays, when I am close to graduation I do not have that many classes on campus. Although having a nice warm lunch is a considerable reason itself for going to the campus, seeing my fellow students is a good motivation to visit also.

The ways of learning and study methods have been excellent for me. Sitting in the lecture listening to a lecturer for one-and-a-half hours and writing an essay about it is not my cup of tea. Instead of listening and learning, by doing something with my own hands and knowing the goal where to aim towards is a much more pleasant method of learning and studying. The transparent glass walls and doors of the classrooms allow the light in differently everywhere and give the feeling of having more open space around the inside of the campus, which is very nice. Having the tiny ski-resort almost in the backyard brings a marvellous and a unique asset to my satisfaction with campus. Computer rooms are available at all times to students and printing is free of charge, which contributes to being able then to study at home.

However, everything has its negative sides. In my experience what I have gotten this far is that teacher and/or professor are almost always

occupied by some meeting, working trip, having a class or other reason not to be available for the needs of students and help with his/her studies. Usually problems are solved by emails between the student and the teacher. The study advisor/student counsellor is always unavailable for assisting the students, if not agreed way in advance for the 15 min assistance. Sometimes I wonder myself why there are not two study advisors because I am, for instance, still one of the people who really needs personal assistance and guidance rather than sorting things out virtually.

Analysis and reflection

Currently of high interest in the field of vocational education and training in Finland is how to keep the vocational contents and methods in tune with the rapidly changing world and life. Furthermore, so is how to make sure that students gain appropriate working life skills and competences, i.e. how to incorporate appropriate working life skills and competences with theoretical knowledge and know-how.

When analysing the HH Porvoo Campus concept through student stories I have tried to understand if the concept and inquiry-based learning model supports individual and shared learning and knowledge construction, i.e. how working life skills and competences have been incorporated with theoretical knowledge and know-how into the concept from a student point of view.

The elements found in the stories that assumingly enhance and support working life integration development are presented in the table below.

TECHNOLOGY	LEARNING	GUIDANCE	ENVIRONMENT	OUTCOME
student laptops	learning by doing	not enough	light	working skills
computer rooms	goal-oriented	more support	ski resort in the backyard	adaptation to different situations
projectors	practically-based	guidance needed	atmosphere	self esteem
smart boards	learning is everyone's own responsibility	to know what is required in order to graduate	no hierarchy between students and teachers	development skills
printing is free of charge	working in groups	when having been on exchange	transparency	search for information
	search for answers	counsellors always busy, travelling	many seating areas	how to use information
	independence	virtually given	different learning spaces	project skills
	combination of lectures and work	lack of face to face meetings	for studying, working and	

TECHNOLOGY	LEARNING	GUIDANCE	ENVIRONMENT	OUTCOME
co-operation	creativity			
	reflection		leisure time	gain knowledge
	reports		warm lunch	
	studying, working and co-operation		meeting up with co-students	bond between working life and studies
	teachers show willingness to improve approach		open space	different roles
	searching and developing		rooms are available at all times for students	technical skills
	projects			

Table 1. Campus concept as expressed by students.

The HH Porvoo Campus pedagogical model forms a blend of learning in which technology, inquiry-based teamwork, working life projects, individual and shared knowledge, in addition to knowledge acquirement construction and the facilitating spaces, shape learning. The campus-adapted inquiry-based learning model as experienced by students involves action, taking responsibility, combinations of lecturers and work, bonds between working life and studies, working life skills, technical skills, goal orientation, practicality, independence, collaboration and self-esteem, as well as the acquirement of knowledge. Independence is stated to have its pros and cons.

Inquiry seems to stand not only for individual student-centric processes, but also for team efforts, i.e. the creation and sharing of knowledge, thus fostering participation in both individual and shared knowledge creation processes and cultures. Individual experiences, previous knowledge and know-how are shared in teams. The campus' pedagogical model is thus learning-centric in which learning and knowledge acquirement, individual and shared processes are as essential as the quality of the project outcome. The campus area is experienced as an attractive environment that stands for student collaboration, warm lunch, friendship and social networking.

According to student interpretation transparency seems to lower hierarchy, thus stimulating collaboration between students and teachers, subsequently adding to the building of knowledge. The spaces seem to support the collaborative aspect of the curricula and pedagogical concept.

Transparent areas and learning spaces thus seem to stimulate learning even if the individual guidance, counselling and support appear insufficient. Hence, much effort should be put into this area when consider-

ing the reform of curricula. Individual processes need to be supported better, or as student story number one outlines: "The balance between independent work, group work and the help you get from the instructors is what I see as the most important thing when it comes to making the studies feel useful and pleasant".

Increased support, guidance and counselling, structure and co-ordination in the HH Porvoo Campus model is proposed for it to be effective, truly working life connected and operationally viable.

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Students in vocational education

Henna Heinilä

Abstract

This article is a review of the system of students' wellbeing in the field of Finnish vocational education and training. The article describes innovative perspectives to probable, possible and preferred futures of students' wellbeing. The article contains four parts. Firstly, the current systems and the culture of students' social and health care services are described. Secondly, there is a review of trends, which might conceivably come about if nurtured. Thirdly, the reconstructed vision of students' wellbeing will emerge. Finally, there are conclusions and some discussion prompts. The focus of the article is that organising multifaceted social and welfare services for students takes effort to promote and maintain good learning, good physical and mental health and social welfare, all together. There is also a need for preventative acts in relation to social and educational marginalisation of students. Connection between wellbeing and human good is also revealed.

Students' wellbeing

Future researchers often work with three types of futures: the predictable, the possible and the preferred. The focus of this book is future-oriented and, following this guideline, the aim of this article is to share innovative perspectives for probable, possible and preferred futures of students' wellbeing in Finnish vocational education and training.

This article contains four parts. Firstly, the current systems and the culture of students' social and health care services are described. This description helps to understand the probable future of students' wellbeing; the future that is likely to occur if present trends continue. Secondly, there is a review of trends that might conceivably come about if nurtured. These trends are not bound by current, inexorable trends or paradigms. These trends may only exist as an embryo but they remain possible futures. Thirdly, the reconstructed vision of students' wellbeing will emerge. This

reconstruction is introduced as the preferred future and may challenge current trends, values and priorities. Finally, conclusions and discussion prompts are presented.

Current context and challenges of students' welfare services – an insight into the probable future

Finland is known as a Nordic welfare state and civil rights are detailed in the Constitution of Finland. According to this fundamental law, parity and social security, including equal rights to social and health care, must be guaranteed for every Finnish citizen. All students at universities, vocational educational institutions, polytechnics and upper secondary schools are guaranteed social welfare services to support their physical, mental and social wellbeing and capacity to study. Chiefly the state is responsible for designing the framework of welfare services. Implementation, planning and realisation is devolved to the local authorities, municipal officials and councillors. Legislation always forms the basis and guideline for the development, realisation and application of students' welfare services in the context of vocational education and training (The Vocational Education Act 630/1998).

During the 21st century, the Finnish legislation for social and health care has undergone revision. Specifications and clampdowns of regulations have been made. The intention of this reshaping has been to put emphasis on preventative action, and nurturing a holistic point of view over reliance solely on the health care system. The concept '*student* health care', for example, was replaced with the concept '*study* health care'. The focus of the law shifted from individual welfare to that of society and the welfare of the study environment as a whole. In 2012, the Finnish Ministry of Social Affairs and Health published the results of an inquiry dealing with the state of 'study health care' in Finnish municipalities and federations of municipalities. The results revealed that social and health welfare services for students were, altogether, rather well organised according to legislation. There was some regional diversity, which caused minor inequality for students. For example, several health nurses and doctors had excessive amounts of students to attend to, which cause difficulties for students to make an appointment. Also adult students encountered difficulties on occasion to find the suitable supply of welfare services (Opiskeluterveydenhuollon selvitys 2012).

Organising multifaceted social and welfare services for students takes efforts to promote and maintain good learning, good physical and mental health and social welfare. There also is a need for preventative acts in relation to the social and educational marginalisation of students. Social and educational marginalisation is an increasing problem, both for vocational educators and trainers, and for students themselves. Two rather wide-ranging joint research and development projects have been performed recently in the context of Finnish education and training: the prevention of marginalisation at universities of applied sciences (CDS 2009-2011) and the prevention of educational exclusion of university students (Campus Conexus 2009-2013). The ultimate target in both of these projects is to promote the engagement of students within the study community and support studying. The projects also developed patterns to assist students in completing their studies.

Six critical problems of this area were revealed in the research and development activity of the projects:

1. One of these problems seems to be the culture that intertwines the discourse of development with development clichés. Educators, trainers, officials and researchers easily fall into jargon, which is far from the everyday reality of student life.
2. Another problem is dealing with encounter. Students' affairs are, in many cases, considered in political cabinets or different projects, meanwhile, the students themselves are excluded. There is barely room to promote, practically, the holistic and dialogical encounter of students and teachers on a daily basis. Study and social and health care guidance activities are fragmented around the web of professionals and the supply of services. The student remains an object, or target, in this 'drama'. He or she has to navigate 'the sea of services' with his/her need to be seen and heard.
3. The service paths for students are unclear, or there are none. The model of the supply of services is splintered. This is, in many cases, a consequence of high professional specialisation and the lack of its integration. As seen in Figure 1 there is plenty of expertise available but the situation can be confused from the student's point of view.
4. The world economy today is volatile and difficult to predict. The public sector, as well as industry and commerce, must economise and cut down expenses to promote a sustainable and stable economy. This generates problems in the field of education

and training, too. The development of preventative services, for example, is hindered by the uncertainty of financing.

5. There is an increasing amount of mental illness and different kinds of social disorder, which decrease students' engagement with their studies.
6. There seems to be a long way to go until the culture of social inclusion – the culture which truly and practically respects human dignity and differences among them – will have realistic possibilities to reveal and take root in the everyday life of vocational education and training.

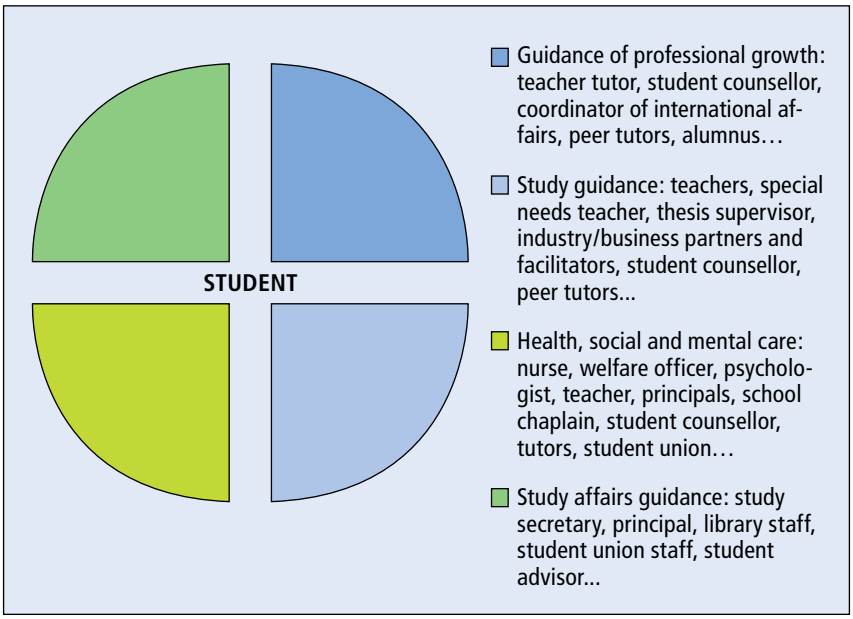

Figure 1. An example of supply of services for vocational students.

These six critical problems give a hint as to what kind of probable futures are likely to happen if present trends, and the interplay among them, continue. The web of wellbeing services is highly developed and runs through the entire field of vocational education and training. Services are of high quality and are functional if found and used. The crucial question is, 'Are they found and used well enough?' If not, the student remains lost in the supply of services, and 'is starved of being assisted in front of the army of assistants'. Is there something that could be possibly done otherwise?

New paths emerging from current trends – an insight into possible futures

As mentioned in the beginning of this article, the revision of legislation changed the emphasis of students' wellbeing from remedial action to preventative action, and tried to nurture the holistic point of view over the systems of welfare and health care. The tendency is to see the student as an active participant in his/her study environment. Nevertheless, the tendency conflicts with some crucial hindrance. Although the strong will of serving the human being as a whole exists, the current structure of the services favour a splintering of these efforts. Highly qualified professionals in social and health care and education services remain underutilised if students cannot find services they need. And, what is worse, the student may not be assisted and taken care of but analysed and diagnosed until overcome with exhaustion.

One possible way out of this dead-end is to change the whole point of view of the student as an object and user of services, to a human in ownership of his/her own wellbeing. The student needs to become emancipated in this regard. This is a question of values, point of view and human dignity; a question of student-originated perspective. Some paths of student-originated perspective were revealed and even created in the Campus Conexus and CDS projects. There were two pervasive principal ideas: first, to promote students' involvement in his/her study environment and study activity with pedagogical tools; and second, to offer life and study management courses as a part of the degree programmes with the purpose of producing empowerment, emancipation and engagement with the study. Promoting one's life and study management skills should no longer be an option, but a natural part of the student's professional growth. That is why these courses are also defined in credit points and are included in the course offering. The following text will shortly introduce two pedagogical tools as examples: the involvement-supporting pedagogy and the concept of peer-tutoring. These tools were created in CDS and Campus Conexus and are examples of how to nurture student-originated perspectives and students' emancipation.

The involvement-supporting pedagogy claims to promote graduation. The involvement-supporting pedagogy points out that the student can be successfully engaged by the dialogical action of learning. Within the dialogical mode of operation students are able to start creating their own pedagogical atmosphere and infrastructure, and become emancipated actors also (Stenlund 2011). The question, 'What do I, as a teacher, have to offer to my students?' turns into, 'What do you, as a student, need

and want to learn, how are you going to perform it and how am I able to facilitate you?' The elements of involvement-supporting pedagogy were investigated in research performed at TAMK, Tampere University of Applied Sciences, in 2010-2011, and ten influential categories were found. The study points out that 'the feeling of community and involvement' is the driving force of learning and therefore it was named as core category. Other nine categories were identified as sub-categories, which reflect and support the core factor. These are:

1. A team or a learning group is a fundamental unit for learning and learners.
2. The group-forming process should begin at the point of student selection with the purpose of supporting well-functioning learning group formation.
3. Clear and announced values should form the basis for learning and co-operation.
4. Co-operative and participatory learning is achieved via producing common artefacts.
5. Co-operative and participatory learning models are also used with the purpose of supporting personal choices.
6. Evaluation of the learning process and learning outcomes should be reflective, qualitative and co-operative.
7. A teacher is a coach and a facilitator responsible for students and study communities.
8. To promote a co-operative learning process requires partnership with industry, commerce and other working environments.
9. An understanding about qualifications is co-operatively reconstructed with students, teachers, and partners.

The common line throughout entire themes is involvement, participation and co-operation. The line conducts the student selection, is the driving force of learning and finally crystallises in learning groups and in communities of practice that are formed. One meaningful conclusion in this study is that student-originated action is in fact a matter of negotiation. Involvement-supporting pedagogy intertwines the action of an individual and community, and, instead of individual freedom, prefers collective freedom and the right to plan and organise both co-operative and individual learning. Freedom includes responsibility. After the student has entered into this domain of collective freedom and responsibility he/she receives all the support that the learning group and teachers can

provide. The fundamental elements of involvement-supporting pedagogy are relationships and partnerships among students and teachers, which are long-lasting and shared learning processes. These elements prevent abandonment and social and educational marginalisation.

Another example of a student-orientated perspective and a concrete outcome of it, as well, is a new form of peer-tutoring. Peer-tutoring, which in this particular case is called 'callidus-tutoring', is launched in the field of higher education. For example HAAGA-HELIA's student union HELGA organises callidus-tutoring and defines it as follows:

> "Callidus-tutors are students who help other students to understand some particular subject or a special field of expertise. A callidus-tutor helps the student face-to-face or organises a study circle for several students. Callidus-tutors can ask help from HAAGA-HELIA teachers when needed. You can turn to callidus-tutors when you feel you need help in some subject. Remember that the callidus-tutor is not a professional teacher, but knows his or her subject matter well enough to help you to learn." (HELGA website)

Callidus-tutoring is based on peer-to-peer action. Helping and coaching is voluntary and organised by the student union. However, this tutoring is not limited solely to leisure time activities but involves areas of professional growth and learning, as well. Peer-tutoring is part of the official agenda of the educational institution and takes its place among all of the other pedagogies performing in the same dialogical field.

Involvement-supporting pedagogy and peer tutoring could be fruitful modes for promoting the possible future of students' wellbeing. These represent good examples of the student-originated perspective and are trends that are noticeable and well-tried, but are yet to become prevailing practice. Although an animated theoretical and administrative conversation about student-originated perspective and its manifestation is constantly ongoing in the field of education and training there is still a lack of holistic and practical views on daily activities of this kind. Student-originated practices are not a regular occurrence, but, unfortunately, an exception. The change from the splintered model of study wellbeing services to the holistic, student-centred one might conceivably come about if nurtured.

From 'study wellbeing' to the 'human good' – an insight into the preferred future

When considering an insight into the preferred future it is worth looking in the rear-view mirror and applying former wisdom to current service. To begin, let us take a few steps backward to the '70s. In 1976 the Finnish sociologist Erik Allard introduced three extensions of wellbeing: having,

loving and being. 'Having' refers to material and non-personal basic needs such as income, wealth, work, health and education. 'Loving' refers to the human needs for relations and identity. 'Being' refers to the need to be integrated within society and environment (Allardt 1976). All of these extensions are crucial when talking about wellbeing. Allardt argued that subjective and objective living conditions should always be considered together: having is incomplete without loving. Interpretations about good and bad, or wellbeing and malaise are, in the end, made by individuals themselves, thus well-being is subjective by nature. External instruments for well-being evaluation, solely used, are one-sided tools and thus incomplete.

Another Finnish scientist, philosopher Georg Henrik von Wright, argued in the '60s in his book *The Varieties of Goodness*, that 'human good' is the core concept within the vast question of good and bad. Although wellbeing is often integrated with external indicators, mostly with physical and mental health, which can be easily measured with external instruments, von Wright points out that happiness brings extra meaning to the concept of wellbeing. He even includes happiness as a subcategory to the concept of wellbeing. According to von Wright wellbeing is crucially dependent on certain goods, matters, services and actions, which produce causality to the structure of welfare. Happiness is essentially different from this. Happiness cannot be explained according to causal matters. Happiness is situation-orientated and can emerge and disappear several times in the course of a day, week, year or entire life (von Wright 1963). On the one hand, there is a causal element within wellbeing that makes it possible to predict and anticipate how to construct a good life and human good. On the other hand, there is an unpredictable element of feelings and emotions intertwined into the happiness, which makes it difficult to predict and anticipate how wellbeing will reveal itself during lived experience. Regarding of this, wellbeing is strongly both in the subjective and objective domains. Thus, wellbeing includes both external and internal, and subjective and objective extensions.

Both Allardt and von Wright draw a theoretical connection between wellbeing and human good. Widely viewed, they settle arguments for the philosophy of unity. Unity refers to the ontological elements of being-in-the-world as a whole entity, bodily being – not primarily as a reflecting mind including the dualistic idea of the body *and* the mind. Allardt and von Wright illuminate the picture of the human being as a reversible creature. Reversibility means an ontological possibility to manifest oneself both as a subject and an object, a perceiver and an observer, but not at the very same moment. Being a perceiver within the lived experience escapes the mode of being the observer and the reflector of the experience.

This means existing between the inner and the outer, made concrete, for example, in one's reflexive consciousness of hope for a house of his/her own and the house as the object of hope (van Manen 2007).

This kind of theoretical consideration is worth noting when students' wellbeing is reconstructed. The whole field of students' wellbeing needs to be framed with ontological and epistemological knowing. There is a need for knowledge about the goods, matters, services and actions affecting the construction of welfare services and individual level wellbeing. There is also a need for facts that improve the ontological understanding of the human being as an experiential and perceptive creature.

In this regard actions following the idea of unity are in progress. The National Institute for Health and Welfare has organised the longitudinal study of Finnish School Health Promotion. The aim of the study is to gather information both from an institutional and individual point of view and to strengthen understanding about students' wellbeing. While the National Institute for Health and Welfare takes care of the data collection and reporting, the responsibility for the interpretation and practical use of data lies with municipalities and schools. The main emphasis is on the rapid processing and reporting of data and further encouraging the municipalities and schools to actively use the knowledge based on the collected data for the purposes of planning and evaluating health promotion.

Another example of the holistic understanding of students' wellbeing is the study ability model published by the Finnish Student Health Service (Kunttu 2009). The model is based on the idea that study ability reflects general life management ability: low study ability indicates difficulties in other life management areas and vice versa. The model illustrates that study ability is the result of the interplay between several different factors: personal and non-personal, inner and outer. The factors that influence and strengthen study ability are personal resources, study skills, teaching and study environment (Figure 2). Personal resources include personality, identity, life management, social relations, physical and mental health, and behaviours. Study skills include study orientation and techniques, study styles and habits, critical thinking, problem-solving skills, social skills, study planning and time planning. Teaching includes teaching and guidance, pedagogical competence and tutoring. Study environment includes the physical, psychological and social environments, and formal and informal study communities. Students' wellbeing must be considered and evaluated through all of these factors if both the subjective and objective extensions and the holistic point of view are to be captured.

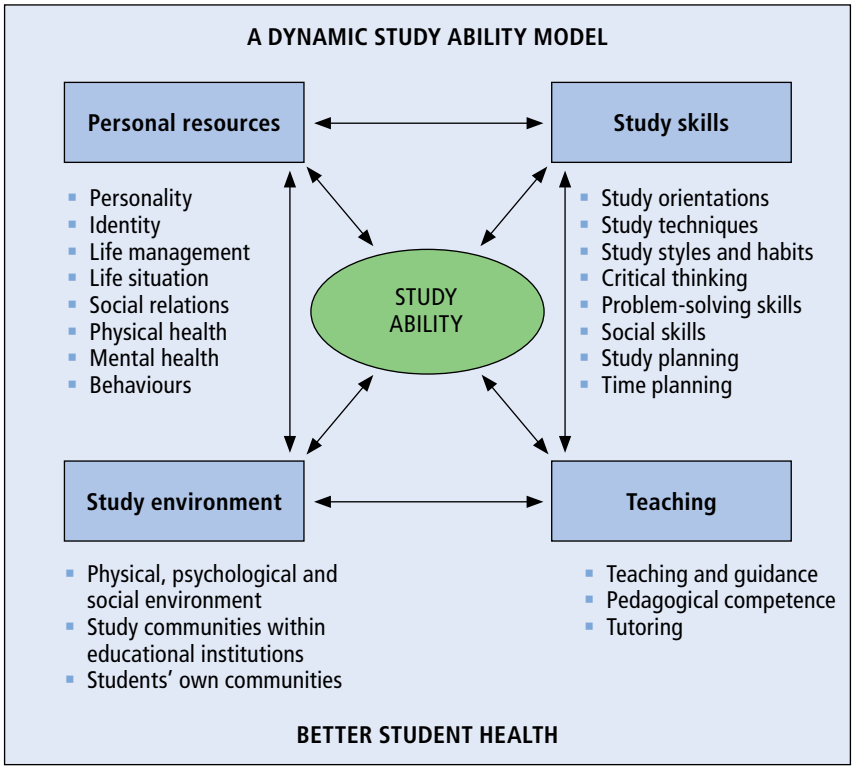

Figure 2. Finnish student health service: A Dynamic study ability model (Kunttu 2012).

The model takes account both personal and non-personal extensions of study ability and has connections to the philosophy of unity. This can be seen as a preferred way of thinking and acting in the future of students' wellbeing. Parallel conclusions were made in the CDS project, also. Student's wellbeing was announced as the interplay between students' own ability, competence and material and immaterial resources, and the actors, services and structure of the study communities within educational institutions (CDS 2009-2011).

What does the consideration above tell us about the future we would like to eventually have? What would be the preferred course of action? The conclusion drawn is that students' wellbeing is a double-sided phenomenon. This means that promoting wellbeing is always dialogical and is a matter of negotiation and true encounter. The student is a full member in the process of welfare services and must have ownership of his/her study and whole life. If the daily life of the student is drifting s/he needs to be guided with concrete factors like timing, daily schedule, sleeping rhythms and study techniques. These are non-personal factors, which, on the one hand, promote personal empowerment, and, on the other hand, strengthen

this personal empowerment as an element of general life management skills. The ultimate target is empowerment, although the primary need is for strict guidance and normative tools. One can also conclude that the emotional extension of each human being is crucial in regards to wellbeing. For example, a concrete and successful learning experience promotes faith in one's own abilities: a feeling of success will emerge. After that, the feeling of success and faith in one's abilities promotes study wellbeing. A circle of welfare is obvious. Wellbeing feeds on itself and thus falling off the welfare circle is highly detrimental to one's wellbeing.

The phenomenon of the welfare circle is common to the idea of social capital. If the human being remains out of the social network and has a lack of social relationships s/he is likely to be marginalised. The problem is how to prevent marginalisation, and how to return one that has 'dropped-out' to the network of social interaction? What would be the possible way to include the study process as an organic part of the lives of the students, or vice versa, so that they can keep moving in the circle of welfare? According to this article the best way to keep the cycle of welfare in rotation and students involved in it is to guarantee, on the one hand, a proper amount of responsibility to all actors, and, on the other hand, dialogical learning context for students so that they can empower and feel that they have ownership of their own learning. Furthermore, there should emerge an atmosphere of involvement within the educational institutions, both pedagogically and practically.

Conclusions

This article is a brief review of the wellbeing system of students in the field of Finnish vocational education and training. Summing up the essential content of the article, one could say that Finnish students' welfare services are legitimated and professionally planned, organised and evaluated. The supply of services is diverse and sufficient, which, on the other hand, promotes an impression of serving and problem solving being splintered. In spite of this splintering, or because of it, the idea of inclusion is strengthened also in the context of welfare services. The idea of inclusion with welfare services is parallel with the concept of social inclusion. Social inclusion means that all people must have the opportunity to feel valued. It also means that people's differences are respected, and their basic needs are met so they can live with dignity. The aim is to increase social inclusion in the context of welfare services, to change the point of

view from promoting services to promoting a co-operative and involving study atmosphere and, most of all, to promote encounter.

The idea of inclusion is the preferred path when considering the future of students' wellbeing in the field of vocational education. Ensuring preferred futures often involves challenging current worldviews, values and priorities. This surely is worth being done. The long history of professionalisation and expertise exists in the educational and social and health care sectors. History reflects the high quality of the professionals as a value in itself. But it also creates an overwhelmingly splintered picture for the student. To complete the picture and to put the expertise to proper use there is a need for inclusion and consideration of moments of encounter as being grounds for students to manifest themselves as a true owner of his/her own life.

The core message of this article can be summarised in two discussion prompts:

- An atmosphere of involvement and the student-originated perspective are the means to promote an active performance of the students and the realisation of the ownership of one's own wellbeing,
- The pedagogical means are an essential element in promoting students' wellbeing.

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Challenges of cultural diversity in vocational education and training

Marianne Teräs

Abstract

This article examines challenges that vocational teachers and trainers face when teaching students with multilingual and multicultural backgrounds. The situation in Finland is presented along with approaches to teaching and learning with diverse student populations, such as multicultural and intercultural education and training. Some critical remarks of these approaches are included. Empirical examples of challenges are given based on a change laboratory intervention with vocational teachers in a health and social care college. While these challenges cover a range of areas, four specific areas are discussed: instructing students at workplaces, teaching students with diverse cultural and lingual backgrounds, sharing knowledge and competence about intercultural issues at school and facing cultural differences. Furthermore a new model called a strand-model is introduced. Teachers and trainers need to reflect different cultural practices with students as well as with their colleagues.

Introduction

Internalisation and globalisation, on the one hand, mobility and migration, on the other, make people move and travel as well as study and work outside their native countries (cf. Teräs & Lasonen 2012; Weber & Hofmuth 2012). This increases cultural and linguistic diversity at vocational colleges and workplaces, and thus creates new types of challenges for vocational education and training (VET), which is one of the main re-education channels for immigrants to gain employment. The biggest immigrant groups to Finland come from Russia, Estonia and Somalia and 4.8 percent of students in VET in 2008 spoke a language other than Swedish or Finnish as their mother tongue (Kumpulainen 2010). As in other countries, newcomers are attracted to cities, and especially to the Helsinki metropolitan region. In 2011 the mother tongue of approximately

11 percent of the population of Helsinki was a language other than Finnish or Swedish (Helsinki Urban Facts 2011).

Learning and development are seen as cultural phenomena, and are important to anyone commencing life in a new country and in a new cultural environment. Learning is not a homogeneous or one-dimensional process. Furthermore, it happens on both the individual and the collective levels – in organisations, communities, schools and workplaces. It involves development, transformation and change. It is also locally and historically formed, and thus takes different forms and modes in various schools, communities and countries. It produces diverse methods and conceptions about how people learn, what they learn and why (Säljö 2001; Engeström 2001; Teräs 2007; 2012).

In this article I explore the challenges teachers and trainers face when interacting with newcomers at schools and workplaces. Vocational teachers prepare their students for work in organisations that may not be used to having immigrants or people with multicultural and multilingual backgrounds in their workforce. In Finland, workplaces, educational institutions and private enterprises alike seem reluctant to recognise competences acquired in foreign countries (Lasonen, Teräs & et al 2011).

First I introduce vocational immigrant training in Finland. Then I present different approaches when educating diverse student populations, such as multicultural and intercultural diversity and cultural sensitivity in teaching and learning. After that I offer a new model for multicultural teaching in vocational colleges called a strand-model that was created during the OPCE-project.[1] Finally some concluding remarks are made.

Immigrants' vocational education and training in Finland

When considering immigrant-training policies in Finland Matinheikko-Kokko and Pitkänen (2002) identified three waves: refugee education, foreigners' education and immigrant education and training. This also reflects changes in the conceptualisation of newcomers; that is, from refugees and foreigners to immigrants. 'Immigrant' refers in the Finnish context to a person who was born in another country and is now living in Finland on a permanent basis (cf. Martikainen & Haikkola 2010). The reason for immigration is, for example, work, studying or attaining

[1] OPCE (Opening Pathways to Competence and Employment) project is funded by the Academy of Finland and led by professor Johanna Lasonen.

refugee status. This already indicates that we are dealing with a highly heterogeneous group of people. In educational statistics, the term 'foreign-language speaker' (vieraskielinen in Finnish) is frequently used. There already exist both old and new ethnic, religious, cultural and linguistic communities in Finland such as Jewish, Finland-Swedish and Russian. In this article I mainly refer to adult immigrants that are persons who were born outside of Finland and are now living in Finland.

The provision of VET is linked to the dialogue with the world of work, in quest of a balance to satisfy all stakeholders from the viewpoints of society, the education provider and the individual. Forsander and Ekholm (2001) found that social and cultural competencies and good language skills are easily highlighted at the workplace, which may categorically exclude immigrants in the labour market. An immigrant's position in the labour market can be considered to be resulting from the interplay of personal and structural factors. According to Forsander and Ekholm, personal factors include education, work experience, the country where these were obtained, the time spent in Finland, language skills, personality, country of origin and social networks. Structural factors comprise issues of prejudice, such as discrimination on the grounds of gender, ethnic group or age, and also normative aspects (e.g. work permit) and ultimately changes in the world of work (ibid). This kind of labour market scene may serve as a frame of reference when we look at vocational qualifications and VET for immigrants as examples of the learning paths available in the Finnish context. These results have been strengthened by numerous studies in previous years (cf. Ahmad 2005; Wrede & Nordberg 2010). The recent studies by Lasonen and her colleagues (cf. Lasonen & Teräs 2011) show that the pathway to employment goes often through networks, however, recognition of immigrants' previous competences tends to be difficult. As a result of this they need to acquire education in Finland (Teräs, Nuottokari & et al n.d.).

According to the Finnish Board of Education, NBE (Opetushallitus 2011), the aim of immigrant education is to offer "competencies to act as equal members in Finnish society and participate in education at different levels". Education and training provided for immigrants is divided into four sectors:

1. Preparatory instruction for basic education.
2. Preparatory training for basic vocational education.
3. Primary and general secondary education.
4. Adult education offered by regular VET or as labour market training.

(Finnish National Board of Education 2011)

The preparatory instruction for basic education is organised within comprehensive school for those children who have moved to Finland with their parents. Preparatory training for basic vocational education has been organised by different agencies since 1999. It is aimed at those students who wish to continue their studies in regular VET but whose study and language skills are not yet sufficient enough for VET. It typically takes one year. This type of preparatory training can be called transitional or bridging training. Regular VET (both for the young and adults) colleges sometimes offer special courses for immigrants, but the trend is to integrate newcomers into mainstream VET and offer, for example, language support within it. Furthermore, so-called integration training is offered for adult newcomers and typically involves Finnish language training and knowledge about Finnish society. Those immigrants who wish to can study vocational teacher education programmes in both Finnish and English, such as what is offered in HAAGA-HELIA (Manninen 2009).

Approaches to teaching and learning with diverse student populations

Teachers and trainers can use different approaches when teaching diverse student populations. To briefly outline these approaches, they include intercultural and multicultural training, diversity and culturally sensitive training, along with global citizenship education offered in comprehensive schools (cf. Andreotti & de Souza 2012). All these approaches have slightly different emphases, are used in different contexts and have different historical paths. For example, multicultural education and training has its roots in citizenship education in the USA. Banks (2002), one of the founders of multicultural education, argues that it is at least three things: an idea or concept, an educational reform movement and a process. The core idea is that all students, regardless of their backgrounds, have an equal opportunity to learn at school (ipid, 3). This ideology of equality and equity is also found in diversity education and training, which expands its scope from cultural differences to ethnic, sexual, religious, class and gender differences. It is used within school and also in working life. Verma (1999, 14) writes that teachers need to celebrate human diversity by being conscious of the ethnically and culturally diverse nature of the society they are working in, being prepared to act as change agents capable of recognising their own prejudices and by being able to identify discrimination and racism.

Intercultural education and training emphasises interaction and reciprocity between different people and cultures. It has been used frequently within intercultural communication and intercultural training at schools and workplaces (cf. Landis, Bennett & et al 2004; Deardorff 2009). UNESCO guidelines on intercultural education emphasises intercultural dialogue between people, religions and cultures by learning to know, learning to do, learning to live together and learning to be. Culturally sensitive teaching and training leans on studies that show that culturally diverse groups achieve more at school if schools and teachers ensure that both instruction and classroom management are sensitive to the students' cultural backgrounds, as Akkari and Loomis (2012, 140) write.

The above refer to approaches that emphasise students' right to equal opportunities for education and training in educational institutions and in working life. Furthermore, they suggest that teachers and trainers should look at their practices from other than dominant or mainstream viewpoints. However, these approaches have their critics too. First, they tend to essentialise and categorise cultures and make stereotypical assumptions assuming that there is 'one culture' typically associated with the nation-state. Second, they tend to forget intracultural variation and difference highlighting intercultural variation and difference (cf. Gutierréz & Rogoff 2003). Third, these approaches have been mainly used in comprehensive schools or in working life, but not so much in VET, which is the main focus in this article.

It has been said that intercultural competence is one of the core competences in the 21st century (cf. Deardorff 2009; Teräs & Lasonen 2012). Typically it is defined as different components such as knowledge, skills and attitudes, or as processes such as learning to act in new cultural environments (cf. Lasonen & Halonen 2009). However, we need to remember that intercultural competence is a complex concept and that it has historical and contextual roots in the activities people are engaged in (Teräs & Lasonen 2012, Lasonen & Teräs 2012). That is, business people need a different type of intercultural competence than health care workers or construction workers. Nevertheless, intercultural competence is needed in VET as well as in workplaces. Next I introduce a new model for multicultural VET created in a social and health care college during the OPCE-project.

Forming a 'strand' model for multicultural VET

In 2010-2011 a special intervention, called a change laboratory, was conducted with ten vocational teachers and two researchers to reflect the challenges of multicultural VET in a social and health care college.

The change laboratory method was developed to seek answers to the needs of modern workplaces facing the challenges of constant change. It is based on cultural-historical activity theory and developmental work research (Leontjev 1978; Engeström 2005). The change laboratory is implemented within a workplace. It consists of eight-to-ten meetings, and the practitioners and researchers collect data and bring it to the laboratory meetings. The data consists of so-called mirror data which is collected prior to meetings and involves interviews with practitioners and their clients, videos of practices, different types of documents and so on. The purpose of it is to gather a picture with multiple perspectives on the present situation of work. Mirror data is used in the laboratory sessions to identify contradictions and tensions at work. Solutions to existing problems are sought and created by analysing, modelling and experimenting. These new solutions are tested and used in actual work practices and then brought back to the laboratory for monitoring. The meetings usually follow the cycle of expansive learning: analysing the present situation, analysing contradictions and history, modelling new activity and tools, implementing and testing the model, and consolidating the new model and practices (Virkkunen, Engeström & et al 1997; Engeström 1998).

The aim of the change laboratory, discussed here, was to develop immigrants' vocational education and training both at school and at workplaces. Interviews with teachers and students were conducted and classes were videotaped to collect the mirror data. In the interviews the students brought up language skills difficulties and differences in cultural practices of teaching and studying. The teachers drew attention to attitudes and discrimination issues as well as language skills and cultural difficulties they recognised in teaching. The videos brought to light critical incidents during lessons, such as what to do when a student confronted ethnic stereotypes.

There were seven two-to-three hour sessions followed by one evaluation session that was held seven months after the initial session, altogether 17 hours, which were audio and video recorded. The sessions took place in a meeting room or in regular classrooms. During the meetings the teachers identified four areas in which they found challenges: working life, teaching work (including Finnish language learning), school community and cultural issues. I will give examples of each of the four areas

and will provide excerpts from the discussions. However, one needs to keep in mind that all areas cover a range of issues, and different perspectives were discussed in the meetings. I use experts as examples of each area (see Table 1. that shows main themes of discussions in the laboratory).

SESSION	MAIN THEMES
1	Introduction of participants; overview of change laboratory working: introducing the working tools and models; participants' expectations and questions.
2	Analysis of the current practice with the help of the mirror material: identifying four types of tension areas that were teaching work, cultural issues, working life and school community.
3	Historical analysis and analysis of current practice: changes in teaching work; tools of immigrant training, e.g. different glossaries.
4	Starting to create the new model and emergence of the collective experiment (=a web based information bank).
5	Going back to the experiment and planning of it: teachers' surveys to students, potentials and obstacles of the experiment.
6	Working on the experiment.
7	Working on the experiment and testing the new model.
8	Evaluation of the change laboratory process: current practices and trajectory of the process; planning the new project.

Table 1. Main themes discussed in the change laboratory.

In Finland teachers visit students at workplaces and discuss with them and their trainers about their workplace learning. This area covered issues such as how the students have learnt new learning practices simultaneously with a new vocation, and what the division of labour was between teachers at the college and trainers at workplaces. The next excerpt shows this tension when the teacher ponders whose role and power it is to decide about a day off.

Excerpt 1:

> Teacher 7[2]: (…) For example, the id-celebration [a Muslim celebration after the Ramadan] is sort of an exciting practice, in that what is our stand on it as teachers and what is the stand at the workplace? Can you get one day, two days, three days off? (…) We should have a common rule at the college or how do we then negotiate it with the workplace? Can we say that if you're at school the college grants one day, or whatever it grants, or then if you're at the workplace is it then so that the employer decides so that we cannot intervene in it? (…) What might be the right way to address this? It is terribly difficult.

[2] Numbers indicate different speakers. (…) Indicates that words have been omitted from the speaking turn to clarify the speaking turn, the original idea of the speaker is respected.

In this excerpt the teacher is pondering rules and practices of the school and workplaces, and that it is not easy to combine them and to know what to do. The teachers also told that it was challenging for the trainers who were pondering what kinds of working life skills need to be learned during workplace learning.

Teaching work covered issues such as students learning Finnish language and professional subjects. This became the main area of concern to teachers: how to combine these two and how to learn the language simultaneously with a vocation. The participants also reflected on teachers' prejudicial attitude towards students and how to handle these attitudes. The next excerpt highlights difficulties in language teaching and learning.

Excerpt 2:

> Teacher 5: (….) There are so many subject matters, and one proceeds so quickly, that I start to think that it would be important to notice all students. It is so easy that those who are quiet remain in margins. When I ask, 'Did you understand?' they always answer 'Yes'. But they haven't. I don't even realise this during my lesson, what their language level is, until the exam comes. Then I see and oh boy!

The teacher's comment shows how difficult it is for professional subject teachers to evaluate the language level of students. The participants also reflected different teaching and learning practices between students' previous and current schools, for example, teacher-centred vs. student-centred practices. One of the challenges is to make 'invisible' practices visible. That is to discuss those practices that are taken for granted, for example, how to write an essay or how to do group work.

The school community covered issues such as implementing the school's strategy, and how to share knowledge in a school community or financial resource, as the next excerpt shows.

Excerpt 3:

> Teacher 3: There is the question of resources; at least in adult education that is business-based, how much support services are included. Many times it feels that they are very insufficient. For example, there is only little or not at all Finnish being taught as a second language.

This area inspired a lot of talk in the meetings about how to share experiences and knowledge at the college. The teachers began to gather information and to create an Internet-based databank about immigration and multicultural issues for all teachers and students. It also brings organisational learning and collective level learning into the picture. Frequently

teachers go to further training sessions, and their new competence remains at an individual level. But in this case, the participants took it beyond individual learning and worked to enhance the competence of the staff and students at the college.

Cultural issues were those when the participants talked about different cultural backgrounds and learning practices, including practices of the mainstream cultures and practices of minority cultures (tolerance/acceptance of dissimilarity), or adjusting to the mainstream cultures and maintaining the minority cultures. This next example was used as a mirror material in the meetings and reflects the differences of learning practices.

Excerpt 4:

> Student: Of course I have [a home country], and sometimes I wish that this were like it is in my home country. (laughs)
>
> Researcher: (laughs) What, for example, is different here, apart from the language – the learning culture?
>
> Student: The learning culture, yes. I mean, how people study. Well, actually I am happy, my knowledge is growing here when we have a lot of discussions and project work. Knowledge comes by doing these, and it is not stressful. It is not like that you must know 'this, this and this from this page' and now a test and now we shall write. It's not like that. I noticed that my knowledge is growing when I was in my home country in the summer and talked with a friend of mine, who is a teacher of the mother tongue there. She wanted to know what kind of education system there is in Finland and I told her. I myself noticed that I have gotten so much knowledge and it was such a non-stressful system, because we got to write assignments, share opinions or tell about this or that, or a project work, group work or homework, or things like that. My knowledge is growing for sure.

In this excerpt the student presented their ideas how learning cultures differed: for example, more discussions, assignments and group work in the current one than the previous one. This type of reflection of different cultural practices is an important skill in a multicultural group.

In the fourth meeting the teachers reflected the challenges further and the researcher introduced a four-filed model of vocational learning (Figure 1). In the model, vertical axis presents tension between learning and performing. This reflects teachers' conception of students' orientation towards their studies: some students wanted to achieve study points by performing the tasks and some aimed at learning more broadly new issues. Horizontal axis reflects tension within learning: was it aimed at individual professional subjects such as psychology, social sciences and nursing or at a more comprehensive view of vocational practices. The

different fields in the model show examples of these tensions that the participants talked about.

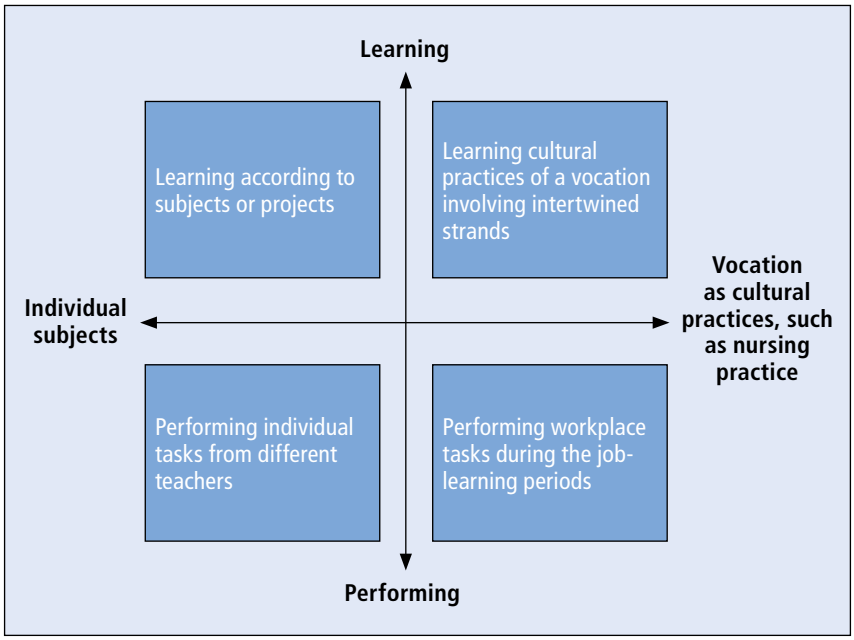

Figure 1. Learning a vocation.

Based on this figure a new object and model, called a strand-model, for multicultural VET stated to emerge. That is, instead of aiming to learn individual professional subjects, the cultural practices of a vocation became the object of learning. This means that in multicultural VET different strands are intertwined such as professional subjects, Finnish language, and cultural practices of teaching and learning. We can separate these strands as individual subjects and analyse them, however the aim needs to be common and also intertwined practices of learning should be used. The model combines those issues that were implicitly present in the cultural practices of the college, and offers a shared object for teaching activity. It also raised a fruitful dialogue, although the term 'strand' never took root in teachers' talk, while they were considering more and more broadly the position of mainstream and immigrant students in education. The participants discussed about the differences between student groups and how individual teachers at the college approach, perceive and face students with an immigrant background.

Conclusions

In this article I have reflected on the challenges and approaches VET teachers and trainers face when teaching multicultural and multilingual students. Teachers and trainers have different instruments at their disposal and the main thing seems to be respect and a reciprocal dialogue, or 'polylogue' of multiple voices between people and cultures (cf. UNESCO). The empirical part of the article outlined that teachers face issues in four areas: instructing students at workplaces, teaching students with diverse cultural and lingual backgrounds, sharing knowledge and competence about intercultural issues at school and facing cultural differences. This means that teachers and trainers need to acknowledge and confront these issues in their daily practices of instructing and teaching at individual level. However, this is not enough and also at the school and workplace collective level this needs to be done.

Three issues can be concluded. First, special emphasis needs to be put on how to combine learning of a new language and a new vocation. At the college the teachers suggested integrative practices of teaching. That is, co-operation between language and professional teachers as well as workplace trainers. This would help the tension between learning practices of language and vocation. Second, the suggestion was made to set up a shared Internet data bank about intercultural issues for teachers and students and the teachers started to implement this suggestion. This would help to share knowledge, experiences and practices at the college. Third the new strand-model helped teachers to conceptualise complexities of multicultural VET and expand the aim of learning from individual professional subjects to cultural practices of vocations. This would also enhance students' understanding of what it means to study and work in a new cultural and linguistic environment.

Teachers and trainers working in VET need also a new type of competence: intercultural competence in encountering diverse student populations. Intercultural competence is historical and contextual and needs to be understood within the activities people are engaged in (cf. Lasonen & Halonen 2009; Teräs & Lasonen 2012).

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An overview of vocational special education and training in Finland

Eija Honkanen and Leena Nuutila

Introduction

Vocational special needs education has been influenced by general education as well as the development of social and health care in our society. Initially, care for the disabled was dependent on the charity work of individuals until legislation obligated churches and society to take care of them. In Finland, vocational special needs education has been carried out in schools from the early 1900s onwards. Initially, special education relied on classification, medicine and isolation. This meant that special needs students were isolated in specific educational institutions of their own. (Tuunanen & Nevala 1989.) Later, an approach with multidisciplinary co-operation and everyday pedagogical solutions in teaching was introduced. Following this, there was a transformation to integration where vocational education and training was carried out in such a way that special needs students were primarily integrated in the same groups with other students. Still, there were and still are vocational special education institutions, which will be described later. (Honkanen, Kaikkonen & Kotila 2008.) In Finland, vocational special needs education and training must be organised in such a way that, as far as possible, students will gain the same qualifications as their peers in other vocational education and training (Laki ammatillisesta koulutuksesta 1998).

The goal is to develop accessible vocational education and training that promotes equality and allows special needs learners to take individual study paths according to lifelong learning principles. The aim is that the study paths can be realised in versatile learning environments that are accessible to all, and where timely and necessary support services contribute to the realisation of individual learning paths in an inclusive learning environment. Vocational education and training is diversified in such a way that also individuals who need special assistance can participate in training that corresponds to the demands of modern working life. The implementation of vocational special education and training relies on the

high quality of operations, effectiveness and profitability. (Honkanen, Kaikkonen & Kotila 2008.) The education of the most severely disabled individuals is still primarily arranged by vocational special schools, which also serve as special educational development and service centres in their regions. In other words, they provide expert support and advice to vocational training institutions regionally and thereby support the inclusive implementation of vocational special education and training. (Ammatillisten perustutkintojen perusteet 2010; Koulutus ja tutkimus vuosina 2011–2016.)

Special education during vocational education and training

In Finland, a wide range of special needs students are studying in vocational education and training in its various realisations: counselling and preparatory instruction and guidance, vocational upper secondary education and training, vocational adult education and training, and polytechnics. A wide range here means that at one end of the spectrum the learner may have some minor difficulty with concentration or dyslexia, whereas at the other end there are students with severe disabilities. Young people who need special assistance mainly select a vocational institution rather than high school. The reasoning is that neither the objectives of the high school nor the matriculation examination can be changed. However, in vocational education and training, it is possible to make adjustments in the evaluation, objectives and learning environment, among others. Special needs education in vocational education refers to all the practical activities and pedagogical solutions used in supporting the students with special needs. (Honkanen 2006.)

Vocational upper secondary education and training is mainly provided by vocational institutions and vocational special education institutions. Vocational special education institutions are still providing education for the most severely disabled. They are focused on offering advanced special support in multi-professional co-operation with the individual during the vocational education and training. Usually, the staff in vocational special education needs to apply wider multi-professional skills when compared with general vocational institutions. In addition to special needs teachers, counsellors and advisers, staff may also include other specialists, such as occupational therapists or physical therapists. (Honkanen 2006; Miettinen 2008; Honkanen & Suomala 2009.)

Vocational adult education and training in Finland refers to vocational qualifications that are independent of how they have been acquired. There are competence tests demonstrating vocational upper secondary qualifications, and further vocational qualifications and specialist vocational qualifications, as well as related preparatory education and other vocational further education and training. Adult education refers to training that is specifically designed and organised for adults (Opetushallitus 2011). Education can be voluntary training, apprenticeship training, staff training or labour policy training. In adult education, legislation does not have any reference to special education; rather, education is based on personalisation. Any special support the student may need is realised through personalisation – also the need for special support. It is, therefore, implemented individually. Also, in adult education there are a large number of learners who need special assistance with their studies. In Finnish adult education and polytechnics, there is still the need for developing the principals of special support during studies. It is one of the key development objectives of vocational education and training. (Koulutus ja tutkimus vuosille 2011–2016.)

Attracted by the orientation to work life and the hands-on way of working, more and more young people select vocational education and training after basic education. These include talented young people who have come to study vocational skills and are highly motivated. Furthermore, vocational education and training is also available to those with severe disabilities. Young people whose needs for special support and adjustments related to learning environments, teaching methods, objectives and evaluation, often choose vocational education and training. There are various ways of arranging special education. These may include learning by doing, practical implementation of the theory, pair work, social interaction, individual objectives and assessment methods, clear teaching and learning materials, and even a solution where two teachers are teaching the same group at the same time. In Finland, a student can be awarded a vocational degree in natural resources, technology, communications and transport, business and commerce, tourism, catering and domestic services, health care and social services and culture, as well as physical education. The implementation of special vocational education varies by discipline and degree. In principle, students are free to choose their field of study. However, specific requirements, such as regarding the health of students for certain vocations, may cause restrictions in certain areas, such as social services and health care. Most special needs students in Finland are studying in the field of technology, communications and transport, tourism, catering and domestic services, or natural resources

and the environment. When considering the number of students, the highest percentage of students with special needs are studying in general vocational institutions. (Honkanen 2006; Miettinen 2008.)

In recent years, there has been a shift to inclusive vocational education and training that is common to all. In principle, the student has the right to learn at the nearest school with the aim of active participation, good life, and further studies or employment. Because each student is learning actively and individually, individual counselling is needed. Accordingly, an individual should be taught and counselled. The goals and expertise of the learners themselves form the basis for learning. Learners are not distinguished on the basis of whether they need support in their studies, and what kind of support they may need. There are regional multidisciplinary teams who support students in their studies and employment opportunities near their homes and relatives. Educational policy decisions support the development of inclusive vocational education. (Koulutus ja tutkimus vuosina 2011–2016.)

The implementation of vocational education and training in vocational upper secondary qualification is directed by the Finnish National Board of Education. The direction is based on the law, decree, stipulation, guidelines and recommendations. The education provider decides how vocational education and training is carried out and prepares the school-specific curriculum and qualifications based on the national curriculum in co-operation with employers in the region. Vocational education and training and work life are jointly responsible for the training of young professionals with their professional growth. Education providers may in part determine to what extent and in which form special education is carried out. (Ammatillisten perustutkintojen perusteet 2010.)

The basic tasks of a teacher are teaching and counselling. This means, for example, that they need to take care of each student's learning process and professional growth. Teaching and counselling rely on identifying the learner's skills and objectives, as well as employment opportunities. These form the basis for designing a personal study plan (PSP) for all students. The PSP is the development plan of the student. It describes the learner's skills, abilities and strengths, as well as subject selections, evaluation and the objectives of the studies. The PSP can be complemented by plans for on-the-job learning and vocational skills demonstration, among others. The PSP is drawn up in co-operation with the learner and the teacher, and is updated throughout the duration of the studies. (Ammatillisten perustutkintojen perusteet 2010.)

If a student has learning difficulties or other problems that affect learning significantly, the teacher's pedagogical expertise and co-operation

skills are of great importance. Co-operation is needed when identifying the difficulties the student may have in learning, in defining and implementing the needed support. Students who need special support in their studies will have an individual educational plan (IEP). The law and regulations of vocational education and training state that special education can be given when learners need long-term support in their studies. Thus, there is no need to have a medical diagnosis when determining the need for special support for students. However, the definition is still often based on a diagnosis, even though the focus during vocational education and training should be on maintaining the ability to study and work. The needed support is often related to social interaction throughout the studies where temporary short-term remedial teaching is not enough. There are more and more learners participating in vocational education and training with mental health problems or complex combinations of problems. Therefore, they have a number of criteria calling for support during their studies. (Laki ammatillisesta koulutuksesta 1998; Ammatillisten perustutkintojen perusteet 2010.)

For each student with special needs, an IEP is drawn up, serving to describe the student's individual support and guidance needs during the studies. The IEP is drawn up together with the learner. If the student is under 18 years of age, the IEP is drawn up together with the learner and his guardian. If necessary, other experts may participate. The IEP is used to document the reason for special education, degree, individual study plan, student support services related to education, student welfare services, as well as other personal service and support during the studies. An IEP is a key document and follow-up tool for the learner as well as for the multi-professional team during the training. It is used in planning the needed support individually and monitoring progress on a regular basis. The aim is to support the learner's strengths. (Laki ammatillisesta koulutuksesta 1998; Ammatillisten perustutkintojen perusteet 2010.)

Who is a special needs student?

Every one of us is a different learner as we do not learn or absorb information in the same way. Sometimes the difference helps one to learn; sometimes it is a handicap and may slow down the learning process. Therefore, it is important that the teacher, workplace instructor and students themselves are able to identify learning difficulties and are aware of their impact on learning and on vocational skills demonstration.

In general, it can be said that learning difficulties are not necessarily an obstacle to learning; rather, learning-related challenges can often be overcome with suitable support measures. Often the concept 'general learning disability' is used. This means that the student may have difficulty in one or more areas. Learning difficulties may be related to reading, writing, foreign languages, deduction, mathematics or concentration. Different types of problems with life skills are also fairly common with students in vocational institutions.

Learning difficulties often also affect the self-esteem and motivation of students (Kunttu 2004). The vicious circle of failure can easily affect the desire, passion and the will to learn. The fear of failure keeps increasing and the belief in one's own abilities keeps decreasing. If the difficulties and problems are not faced openly, psychological and social problems may arise: co-operation with others, for example, suffers if one uses all of their strength to try and hide their weaknesses and refuse to take on tasks in which they might be exposed. Accordingly, challenging behaviour and truancy may be just ways of disguising learning difficulties.

People with learning difficulties are otherwise quite normal in their abilities and skills. They are not 'lazier or less intelligent' than the average student. They have, nonetheless, difficulties in learning. Learning difficulties usually manifest themselves in each person in a slightly different way.

In order to be able to support the students, it is important to:

- Identify the student's strengths.
- Identify the specific learning difficulties the student has.
- Be aware of how learning disabilities can affect their studies.
- Use a variety of alternative methods to support and counsel the student.

It is not enough to identify the difficulties; it is just as important *to identify the strengths*. Each student is also good at many things, and they may even have special talents in some specific areas. The student's strengths should be harnessed because they support both learning and self-esteem and can compensate for weaker areas.

In each student group, there is often also a student with learning difficulties. Teachers must take this into account in their counselling and teaching, vocational skills demonstration and on-the-job learning. Workplace instructors must also be aware of issues related to learning difficulties in connection with vocational skills demonstration and on-the-job learning. Only if these are covered well can the students be supported and counselled in ways best fit for them.

Some of the students with special needs are known well before the vocational education starts, some of them become apparent at the beginning of the vocational education or later during the studies. Educational institutions must have proper identification and mapping practices in order to be able to support students in good time in the right way. The most common identification methods used in vocational institutions are interviews, dyslexia tests or ability tests in mathematics and languages. Some institutions have also experimented with vocational mappings. An interesting and important challenge in future is how the data from these mappings is used in planning, implementing and assessing the vocational skills demonstration.

The best results in learning can be achieved when students' individuality is taken into account and their different ways of learning are identified. When diverse multi-channel teaching methods are applied, students receive counselling and instruction that best supports their own style. Learning difficulties must be taken into consideration in everyday class work as well as in the preparation and assessment of tasks. The guiding principle is to give students a wide range of opportunities to demonstrate their skills and competencies. Institutions are responsible for organising the needed support and counselling for students. Support and counselling services may vary from one institution to the other.

The special education plan in a vocational institution is a part of the school-specific curriculum. It gives the principles for organising special education support and counselling services in the educational institutions. The task of educational institutions is to assess whether learning difficulties call for identifying somebody as a special needs student, and whether the learning difficulties are treatable with other supportive measures. A student can be identified as a special needs student if the support needed in teaching cannot be arranged in any other way, for example, as remedial instruction. Students with special needs must have an IEP. Whether we are dealing with special education or remedial instruction depends on the severity or the temporary nature of difficulties.

Adequate support and counselling services must be organised for all those who need them. Institutions should be able to identify the special needs of these students and support them in their learning as a whole. Otherwise, they are at risk of failure, underachievement or the discontinuation of studies.

When planning the supporting measures, students should always have the main role. They should be encouraged to take an active role as the experts of their own learning.

How to support students with special needs?

Studies can be thought to begin already at the stage when the student selects and applies for the future learning scheme. Therefore, it is important that there is enough co-operation during the transition point so that the right field of study is found. Furthermore, positive interaction between teachers and other staff members serves to provide a solid basis for the studies. In particular, it is important to develop the dynamics of the student groups to create a positive atmosphere and supportive learning environment.

During the studies, a relatively common support can be offered by the student welfare services. This may include services provided by a guidance counsellor, school social worker, psychologist, nurse and physician. Lately, vocational institutions have also recruited other staff to support counselling and instruction. They may, for example, employ a counsellor in a specific vocational field, youth worker, school assistant or interpreter. In addition, various external inter-disciplinary experts such as municipal social welfare and health care experts, police officers, youth services, church or a variety of other organisations also participate. Parents have also been becoming more involved in school activities in recent years.

Learning and teaching can also be supported by the use of part-time or full-time teaching in small groups. This gives the teacher more time to effectively counsel individual students. If concurrent teaching is used, students are counselled by the teacher and another worker, such as a special needs teacher, counsellor, assistant or youth worker. New teaching methods, such as structured teaching, methods for practicing learning skills, or programmes to develop thinking skills, have become more widely used in counselling and teaching activities. They serve to develop counselling and instruction as well as student-driven learning in inspiring learning environments.

The most important support method for counselling and instruction is, however, the interaction between the student and the teacher where the learning methods and objectives have been selected to enable experiences of success. Some students with special needs require learning aids such as personalised learning materials and differentiation when setting goals.

In vocational institutions, student counselling makes use of a PSP and, in the case of special students, an IEP. These provide students with the opportunity for individual study paths, taking into account their special needs and, above all, individual interaction with people counselling the learning.

Individual counselling – many ways to learn

In the past few years, it has been seen more clearly that wellbeing in work communities helps with getting better results. In line with this, vocational institutions make use of multi-professional student service groups with the aim to promote the ability to learn, the development of methods and improvement of accessibility. The adapted learning environment refers to the physical, mental and social environment in which everyone can interact on equal basis. Student service working groups can better achieve their goals if they are backed up by the school management and good co-operation between other similar services in the area (Erola 2004).

In order to be successful in one's studies, it is important to set targets. If the students cannot accept the general targets as their own, any disturbances from their environment may adversely affect their studies. Therefore, in order to reach the targets, it is important that the teacher guides the students' learning process.

Successful usage of a counselling method requires that there is certain similarity in the communication, teaching and learning styles of instructors and students. Similarity can be applied, for example, through dialogue. Dialogue is a special way of visualising thinking in a safe environment. Dialogic interaction in counselling is guided by the counsellor. The processing of emotions is an important aspect in all counselling. There must also be room for applying tacit knowledge and intuitive thinking (Ojanen 2000).

People tend to use their senses in a personalised way in learning (and in teaching). It has been shown that individual learning styles are linked to learning difficulties (Prashnig 2000, 115). If we take a look at a couple of learning styles such as rational, metaphorical and empirical, certain differences in acquiring knowledge can be seen. Rational students and teachers acquire knowledge primarily through thinking, whereas metaphorical students and teachers rely on their own feelings. Empirical students and teachers acquire information mainly through their senses. When examining learning styles one should bear in mind that the styles have not been shown to have any connection to human intelligence as such. It is important to note that, even if all three styles can be found in all of us, one style is usually dominant in most situations (Repo & Nuutinen 2002).

The learning environment should be arranged in such a way that it provides an opportunity to receive counselling that is fitting with the student's own knowledge and progress in learning. The teacher's role is to support the students in their thinking and learning when their own skills are not sufficient for independent performance. The teacher's pedagogical expertise and understanding of possibilities helps in setting the objectives and

contents of learning. Counselling discussions should pay more and more attention to the students' awareness of their own strengths and development needs in relation to the learning objectives (Nuutila 2009). The counsellor's view is always useful when assessing the need for support. However, the personal views of the students need to be taken into account as well.

It is important to train all of the teaching staff to identify and support students with special needs. Co-operation between the tutor and the special needs teacher, for example, enables versatile and efficient student support. Responsibility of the support should not be left to one person only; rather, there should be an attitude that the entire teaching staff is there to support the student.

Challenges in counselling and employment

The profile of a special needs student in vocational education and training can vary a lot. Students may have specific learning difficulties or extensive problems in managing their lives. Because the organisation providing education plays a key role when considering the success of the education, the organisation must also be able to develop itself.

How to make educational institutions and communities interesting and challenging learning environments where students and teachers alike will have the courage to grow as human beings, as well as to commit to interaction and continuous improvement? Trust is the key. For example, trust based on shared experiences can help in getting people to co-operate. It can be said that co-operation (listening, equal participation and mutual appreciation) serves to build trust between the parties (Mönkkönen 2001).

A fruitful counselling relationship is always based on the existing situation and realities. The purpose of the counselling is to find the most suitable way forward for each student. The students have the possibility to influence everything in their studies. All that works well will be taken into use also in future. If something does not work, small changes are applied and the way forward is found step by step (Helander 2000).

There is no one common model applied by people working in vocational education and training because new ways of working and new expertise in counselling can be expressed in various ways in different counselling situations and learning environments. The general trend in counselling calls for more and more creative professionals with a determined mindset to provide independent solution-oriented ways of working as members of a multi-disciplinary team.

From the counselling viewpoint, it is important that the teaching and counselling staff can apply diversified knowledge that can be shared with everyone in the community. In addition, because the demands and requirements of working life keep changing, there needs to be an interactive process between education and working life where the pedagogical contents are formulated. It is important that the teacher can create an atmosphere where students want to learn so that their motivation can be developed also in the long term if needed (Nuutila 2012).

Students with special needs often need strong support also in the transition from school to work. Therefore, in supporting special needs students, also the challenges related to the on-the-job learning need to be part of the overall strategy of the educational institution. Support measures could include counselling by the teacher, specific teaching solutions, student welfare and the actual special education.

The key principle in the implementation of on-the-job learning in vocational education is that students have the chance to demonstrate their competences, not their incompetence. This means that the preparation and counselling related to the on-the-job learning has to be sufficient so that the student has already gained some degree of certainty. Finally, special attention needs to be paid to individual and supportive counselling during on-the-job learning, as well as self-assessment.

Conclusions

Learning difficulties may be related to reading, writing, mathematics, foreign languages, reasoning, perception and concentration, for example. Learning difficulties are often associated with self-esteem, motivation, or behavioural problems resulting in failure with studies. It is therefore important to see the students as individuals with their own strengths and resources (Nuutila 2010).

The teacher should also understand that the period of training or learning is only one part of the student's life process. The members of the team should constantly ask themselves whose goals are more important: those of the student or those of the organisation.

In successful and fruitful teaching and counselling, one must constantly make choices and create new ways of working. Large educational structures tend to bring with them a new kind of uncertainty and new challenges. It is, therefore, important to actively search for new solutions to the new situations brought about by the changes (Heinilä et al. 2012).

The aim should be to find the most effective and flexible solutions for a wide range of students. The institution is a support system enabling studying and learning. Partnership and co-operation usually require common commitments and agreements, which show the responsibilities of the parties as well as the objectives of the co-operation (Engeström 2006).

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