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The Pedagogy of Vocational Top Expertise

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ISBN 978-951-784-782-7
ISSN 1795-4231
HAMKin julkaisuja 3/2016

e-julkaisu
ISBN 978-951-784-783-4 (PDF)
ISSN 1795-424X
HAMKin e-julkaisuja 5/2016

PUBLISHER
Häme University of Applied Sciences
PO BOX 230
FI-13101 Hämeenlinna, FINLAND
tel. +358 3 6461
julkaisut@hamk.fi
www.hamk.fi/julkaisut

Design: HAMK Publications

Lay-out: Graafinen Idea and Sara Kaloinen, Häme University of Applied Sciences

Cover Photo: Ville Salminen

Printed in: Kirjapaino Hermes Oy, Tampere

Hämeenlinna, November 2016

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Introduction

This collection of articles, titled The Pedagogy of Vocational Top Expertise, is a sequel to the book Towards Vocational Top Expertise, which was published a few years ago. The earlier work was well received at the time of its publication, but a need soon emerged to look at the development of top expertise specifically from the perspective of pedagogy. This sparked the idea for a new book.

Our collection of articles showcases Finnish pedagogical thinking and practices aimed at developing top expertise, thus it serves as a natural sequel to the work Towards Vocational Top Expertise, which you can find on our website at www.hamk.fi/skills. We hope that this earlier work will also be of interest to you.

All of the authors in the collection The Pedagogy of Vocational Top Expertise are experienced developers of vocational top expertise in Finland. As a point of departure, the articles are based on the education policy, education system, set of values and thinking in Finland with respect to vocational education and training. The articles also draw on international sources. It is our hope that, regardless of what the education systems and cultures may be like in other countries, all readers will find good practices and experiences in our book that will be useful for them as developers of top expertise. The collection is intended for all those who guide young people towards higher levels of vocational competence. It is particularly suitable for coaches and experts involved in vocational skills competition activities and competition organisers. Developing top expertise often is the common goal of companies and educational organisations. We thus hope that the articles will also provide ideas for personnel developers in companies, as we find that the best way of developing vocational top expertise is cooperation between companies and educational institutions where studies and work are interlaced.

The articles are based on both academic research and experiences gained in development projects and practices that we have found useful. The level of the articles is as practical as possible, thus ensuring their relevance for everyday work. The collection can also be used as a textbook: as a matter of fact, it is used in the Pedagogy of Vocational Top Expertise online courses organised by the publisher. A Developer of Vocational Top Expertise Open Badge is awarded to those who complete the course.

The collection is divided into two parts. The first part looks at the development of vocational top expertise from a pedagogical perspective. The second part has a particular focus on vocational skills competitions as a tool for developing the pedagogy of top expertise.

The first part defines what we actually mean by the development of vocational top expertise in this book and why it is essential for companies and educational institutions alike. Other key topics are recognising the strengths of vocational students, supporting professional growth and the methods for developing competence.

The second part focuses on the principles of educational philosophy that underpin vocational skills competitions and the utilisation of competition activities at the level of both the individual and the organisation. The utilisation of competitions is also examined from the perspective of developing the competence of a vocational teacher. Utilising competition activities is a highly topical and central question in many countries. This was a particular consideration when the vision, strategy and measures of WorldSkills 2025 were drafted. All competitors should be able to feel that they receive genuine benefits from participating, and, in this context, participation does not exclusively refer to competition activities. Benefits may be gained in many ways through international networks and WorldSkills materials and services. This idea has the pride of place in the WorldSkills vision, which is built on six focus areas: promoting skills, career building, skills competitions, education and training, international cooperation and development, and research.

The publisher of the work is Häme University of Applied Sciences (HAMK), Finnish Academy for Skills Excellence (FASE). FASE operates as part of the HAMK School of Professional Teacher Education, and its task is to promote the development of top expertise and respond to the competence development needs of teachers and instructors. FASE is a member of the national and international Skills Network. Some of the authors are FASE employees, while others are actors in FASE's cooperation network.

Putting this work together has been professionally challenging, not least because during the writing process, the top expertise specialists in FASE had to formulate a common view and understanding of the pedagogy of vocational top expertise. However, our many discussions and meetings during the process of compiling the collection, which took almost two years, lent excellent support and encouragement for our work. For this reason, the publication above all represents our joint views, and our accomplishment and what we gained through each other's expertise during this journey are thus something we find valuable.

Our publication does not provide, or even seek to provide, an exclusive definition or strict boundaries for the pedagogy of vocational top expertise. We feel, however, that the book now clearly highlights the key elements that the team of authors jointly find essential for it. This will hopefully also lead the readers to consider which pedagogical solutions would optimally help young people and adults to become top experts and members of top teams.

It is our hope that the articles in this collection will provide readers with new ideas and inspiration for guiding and supporting future top experts. Let us join our forces in developing more effective pedagogical solutions.

Enjoy your reading!

Tuomas Eerola and the authors
Finnish Academy for Skills Excellence

Part 1:

Developing top expertise

Our understanding of the pedagogy of vocational top expertise

Tuomas Eerola

In a nutshell, pedagogy means the way in which teaching is arranged, including the ideological principles and practices of education associated with it. Pedagogy may be defined at three levels: at the national level, it means education policy solutions and the education system; at the institutional level, it means the curriculum and the ways in which teaching is arranged; and at the level of an individual teacher, it means the ways of guiding learning and the concept of learning that underpins the guidance. In Finland, pedagogy can be studied at the departments of education of universities and in the professional teacher education units of universities of applied sciences.

In this work, the pedagogy of vocational top expertise is examined at all three levels, however the level of the institution and the individual teacher are particularly emphasised. The Finnish education policy and education system are mainly seen as a frame of reference within which the potential

vocational top experts of the future are instructed. However, this frame of reference is undergoing a powerful transition: at the time of writing this article, a reform of vocational education and training is taking place in Finland, whose links with the pedagogy of vocational top expertise are discussed in the articles of this collection. Individual learning pathways, demonstration of competence and on-the-job learning play key roles both in this reform and in the pedagogy of top expertise. The idea of the reform is that vocational education and training will be based on a training agreement between the workplace, the education provider and the student, the aim of which is to promote the practically oriented training provided in the workplace and improve the student's level of competence – and thus give the student better chances of finding employment. The training agreement will be a flexible instrument. It can be updated as the student's skills improve, and studies covered by the agreement can be redirected as required by the student's individual needs and pathways. The pedagogy of vocational top expertise has similar goals.

The development of vocational top expertise is individually motivated on the one hand, while being workplace driven on the other. We cannot talk about vocational top expertise without it having strong future-oriented workplace relevance. The future competence needs of the workplace and the requirements of global competitiveness set the continuously evolving and changing goals of top expertise. However, a process of individual growth is the only way of developing into a vocational top expert. There is no "patented solution" for a learning pathway leading to the top that would be suitable for everyone. Additionally, the structural solutions at all of the aforementioned levels of pedagogy must enable individual study pathways and the VET provided in close cooperation with employers. The pedagogy of vocational top expertise is underpinned by a constructivist concept of knowledge and learning as well as the pedagogical models that draw on them.

On the one hand, the pedagogy of vocational top expertise consists of developing mental characteristics (Isokorpi 2013, 27). On the other hand, top expertise is only possible once an individual has achieved the overall competences required for a high level of performance. Citing Williams (2002), Ruohotie (2003) defines competence as "an individual characteristic that causally explains efficiency defined by specific criteria, or success in work-related duties and situations." Competences may be motives, characteristics, concepts of self, attitudes, values, knowledge and cognitive and practical skills – any individual properties that can be reliably measured and assessed and that can be proven to clearly distinguish good performers from average ones, or make a difference between effective and ineffective performers. Mulder (2011) describes competence development at five levels, as shown in Figure 1. In Mulder's model, top experts are placed on level 4. Among the top performers, experts of even a higher standard can be found: those with great talent, stars of their own competence area.

Figure 1. Levels of competence development (Mulder 2011).

According to Ruohotie, competence, skill, qualification, ability, capacity, efficiency and skilfulness all refer to mastering a skill: skill of learning something, doing something or achieving a goal. They are also linked to creativity, innovativeness, flexibility, perseverance and accuracy/exactness. A skill is always associated with knowledge and understanding, and applying any knowledge to practice requires skill. Stressing the cognitive aspect related to skills has led to an appreciation of mental abilities, whereas the physical aspect of a skill – including deftness, dexterity or manual skills – has often been overlooked. (Ruohotie, 2003.)

Ruohotie argues that solid vocation-specific knowledge, a skill in applying knowledge to solving practical problems, and metacognitive skills and high-level thinking skills are accentuated in vocational top expertise. Vocation-specific knowledge consists of mastering the complexity of knowledge/knowledge structures, combined with a depth of understanding. As the labour market transformation gathers momentum, thinking skills are increasingly being emphasised. A top expert needs capabilities for critical analysis and ways to creatively use knowledge, the ability to anticipate developments and their consequences, as well as an ability to react proactively to future challenges. A top expert also needs skills in self-regulation and motivational capabilities that support self-regulation, including a belief in his or her own abilities and possibilities. It is vital that vocational studies are organised using pedagogical models that support not only the culmination of vocation-specific knowledge and skills, but also the development of thinking and self-regulation skills. (Ruohotie 2005.)

Based on research carried out within the context of vocational skills competitions, Nokelainen (2009) defines a vocational top expert as a person who, in addition to possessing vocation-specific skills that have been developed to an autonomous level, has natural talent, favourable environmental factors and a willingness to participate over the long term in goal-oriented

and guided coaching that improves the optimal utilisation of mental resources through knowledge and the regulation of intrapersonal properties.

In other words, the research results of Ruohotie and Nokelainen described above indicate that a top expert is not only someone who completes the work to an outstanding standard, but also someone who continuously develops his or her own work. This view is also supported by the recent structural changes in WorldSkills assessment criteria, which apply to all skills: the assessment is based on WorldSkills standards where, in addition to targets specific for each skill, the organisation of work and time management, communication and interaction skills, innovativeness and creativeness are also assessed.

Within the context of the aforementioned definition Nokelainen, when writing about natural talent, refers to the multiple intelligences theory of Howard Gardner (1993), according to which a person's ability to act intelligently in different situations cannot be explained through a single, general intelligence type as several types of intelligence specialised for different tasks that are, to a great extent, independent from each other come into play. Gardner thus distinguishes between eight distinct intelligences that form an individual's intelligence profile.

Growth towards vocational top expertise begins from individual starting points and progresses as a process of professional growth. Aiming for top expertise should be possible for everyone, regardless of where they start. A key task of a vocational teacher and instructor is, thus, to recognise the strengths and support the needs of each individual studying for a profession. In this respect, guiding vocational top expertise and special needs teaching of students in need of particular support are very closely related. Isokorpi (2013, 27) defines the pedagogy of top expertise as follows: "The pedagogy of top expertise is about bringing out internal motivation and meaningfulness, suggestive learning based on appreciation. The pedagogy of top expertise is about learning to pause for a moment, reinforcing a student's autonomy and pedagogical well-being. The pedagogy of top expertise is about integrative pedagogy."

Developing vocational top expertise is a common challenge for both companies and education providers. The pedagogy of vocational top expertise is, thus, closely related to the pedagogy of developing expertise described by Tynjälä (2010). In addition to actual substance competence, many other generalised skills are required in the workplace, including social skills and an ability to work under pressure. An ability to quickly adapt to a change is required of a top expert – or better still, a top expert is expected to accelerate the change. Integrative pedagogy offers tools for more efficient development of the competences required in today's workplaces than does conventional teaching. Isokorpi (2013, 44–45) describes the link between integrative pedagogy and the pedagogy of vocational top expertise as fol-

lows: “The model of integrative pedagogy consists of the same elements and combinations of elements as vocational expertise. The development of expertise is a comprehensive process in which 1) theory and 2) practice cannot be separated. In the development of education and training and vocational top expertise, theoretical elements are combined with practical problem-solving in authentic situations and simulated environments. An excellent example of the latter are vocational skills competitions.”

The competence needs in different professions and the workplace in general continuously evolve and change. New professions emerge and some old ones disappear. The rate of this transformation is increasing. Anticipating the ever-changing needs and responding to them is only possible by means of close cooperation between employers, research institutes and educational institutions. Preconditions for success in global competition often include the kind of broad-based creativity and innovativeness that can only be achieved in multi-professional teams and networks – individuals with top expertise are not necessarily a guarantee of the success of an organisation. When we talk about vocational top expertise, we should thus pay attention to not only an individual’s professional growth, but also to the top expertise of teams and networks (Ryymin, Eerola & Majuri 2015).

Professor Kai Hakkarainen (2015) places particular emphasis on the significance of collective learning networks. He claims that we are still living in the Middle Ages of intelligent action if we believe that intelligence only lives inside the head of an individual. Hakkarainen argues that we continue to have too many cultural limitations, which are an obstacle to development possibilities, for example for young people who come from difficult circumstances; plenty of potential goes unused when we do not give everyone equal opportunities for developing their competence. “If learning something is difficult, it only means that you do not have contacts with those who know how things should be done”, Hakkarainen sums up. Top expertise includes active participation in social networks and making one’s skills visible.

In other words, professional growth into a top expert is a very individual process that requires timely guidance and support. **In this work, the pedagogy of vocational top expertise is understood as recognising individual strengths and supporting professional growth towards the goals set by workplace competence needs and global competitiveness. In order to be successful and develop, both top experts and organisations need teams consisting of top experts and collective competence networks.** Particular attention is focused on vocational skills competitions as an instrument for developing vocational top expertise. Vocational top expertise also includes making one's skills visible and building a brand, in which the possibilities offered by digital solutions are utilised efficiently. Rather than guiding a few talented individuals to the world's top spots, the pedagogy of vocational top expertise strives

to improve the standard of vocational skills extensively and to offer every student the possibility to climb to higher levels of competence on their individual learning paths. Attention should not only be focused on developing a certain skill to the top level, however, as holistic growth and development should not be overlooked either – mental, physical and social well-being.

At the national level, the pedagogy of vocational top expertise includes education policy solutions that give everyone equal opportunities to develop their skills from their own personal starting points – and taking the principles of lifelong learning into consideration, also to maintain their skills in a world that is changing more and more rapidly. At the regional level, the strategies of educational institutions should support the pedagogy of vocational top expertise: individual and flexible study paths, principles of lifelong learning, close cooperation with employers and international networking, developing personnel competence, support and guidance being offered to potential top experts, and using vocational skills competitions as an instrument of pedagogical development. At the level of individual teachers and instructors, the pedagogy of vocational top expertise means having the competence to recognise their students' different strengths and support needs, skills in guiding and encouraging different learners in their study paths, and skills in applying coaching methods that take into consideration a student's physical, psychological, social, intellectual and emotional development. It also means having the ability to build learning communities that support the development of top expertise, a willingness to continuously maintain and develop one's workplace-related and pedagogical competence, and national and international networking.

References

Gardner, H. (1993). *Multiple Intelligences: The Theory in Practice*. New York: Basic Books.

Hakkarainen, K. (2015). *Numerot eivät kerro mitään oppimiskyvystä*. Video recording, retrieved 30 August 2016 from http://www.hs.fi/elama/a1443581259819

Isokorpi, T. (2013). *Huippuosaamisen pedagogiikka. Näkökulmia oman ammatillisen huippuosaamisen saavuttamiseksi.* HAMK e-publications 19/2013. http://www.theseus.fi/handle/10024/67052

Mulder, M. (2011). *The Concept of Competence: Blessing or Curse?* Article in Torniainen, I., Mahlamäki-Kultanen, S., Nokelainen, P. & Ilsley, P. (eds.) Innovations for Competence Management. Conference Proceedings. Series C Articles, reports and other current publications, part 84. Lahti University of Applied Sciences. 11–24.

Nokelainen, P. (2009). Mistä on ammatilliset huippuosaajat tehty? *Ammattikasvatuksen aikakauskirja* 12(2), 4–12.

Ruohotie, P. (2003). Mitä on ammatillinen huippuosaaminen? *Ammattikasvatuksen aikakauskirja,* 5(1), 4–11.

Ruohotie, P. (2005). Metakognitiiviset taidot ja käsitteellinen oppiminen. *Ammattikasvatuksen aikakauskirja,* 7(1), 4–11.

Ryymin, E., Eerola, T. & Majuri, M. (2015). *Ammatillisen huippuosaamisen tutkimuksesta ja ammattitaitokilpailuista näkökulmia tulevaisuuden työelämän osaamisten kehittämiseen*. Special issue of Ammattikasvatuksen aikakauskirja. Helsinki: OKKA Foundation.

Tynjälä, P. (2010). *Asiantuntijuuden kehittämisen pedagogiikka*. In: Collin, K., Paloniemi, S., Rasku-Puttonen, H. & Tynjälä, P. (eds.) Luovuus, oppiminen ja asiantuntijuus. Helsinki: WSOYpro, 79–95.

Williams, R. S. (2002). *Managing Employee Performance.* London: Thomson Learning.

The pedagogy of vocational top expertise responds to future competence needs

Tuomas Eerola and Martti Majuri

Introduction

Top expertise comes in numerous different categories. This book is interested in vocational top expertise that is relevant to the labour market of the future. The pedagogy of vocational top expertise can be defined as recognising individual strengths and supporting professional growth towards the goals set by workplace competence needs and global competitiveness. In order to be successful and develop, both top experts and organisations need teams consisting of top experts and collective competence networks. While professional growth into a top expert is an individual process, the goals of top expertise are set by the workplaces and the top-level competence needs of each profession. Every young person pursuing vocational studies does not necessarily achieve the very top level, but each student can improve his or her competence level with respect to personal top expertise. Developing ever more closely to the top level increases students' beliefs in their own abilities and possibilities; research results indicate that this is

one of the most important factors explaining success in the workplace (cf. Ruohotie 2005).

From the perspective of economic competitiveness, competence is a key factor. Competence is needed for both starting new companies and maintaining the competitiveness of existing businesses. As global competition gets tougher, increasing requirements are placed on competence. Ordinary competence is not enough, and top expertise is thus required. And top expertise can no longer be regarded as something that only concerns highly educated employees, because methods and practices for developing top expertise are needed in all sectors of industrial life and at every level.

Preconditions for future competitiveness include continuous renewal, pioneering and top expertise. The operating models, technologies and rate of renewal in the workplaces set challenges for education and training. Conventional career thinking and traditional "from bottom to top" career models no longer work. In addition to vertical movement, horizontal career development and turbulence are also possible. An example of this in vocational education and training is the fact that students of different ages, from different backgrounds and with different strengths meet in the same groups. New methods are needed for developing and demonstrating competence. Competence will be crucial in the future, more so than qualifications. Vocational skills competitions should thus not be placed behind general development and become mere stages for sectors of the past. Networking, digitality, collective intelligence and competence development in social networks set challenges for both the competitions and vocational education and training.

Workplace of the future and anticipation of competence needs

The strengths of Finnish workplaces include the possibilities for on-the-job learning and development, reasonable opportunities for exerting influence and social and trust capital. However, economic renewal through the utilisation of new technologies is needed in order to improve productivity and competitiveness. This is also essential from the perspective of creating new companies and jobs. Digitalisation is transforming sectors and professions as well as the entire global operating environment. If the economy cannot renew itself sufficiently through the use of digital technologies, we cannot improve our competitiveness. (Ministry of Economic Affairs and Employment 2020 strategy.)

Some conventional tasks will disappear, and some will be replaced by digitalisation. Though other jobs will be created in their place, the contents and character of work will change. Work will become fragmented, and employment relationships will become more diverse. Customers and their networks will become increasingly important. Project-like and entrepreneurial working methods will become more common. The education sys-

tem should be updated, especially by attaching more importance to practical competence and its development. (Hartikainen 2014, Mäenpää 2016.)

The Institute for the Future of Phoenix University has described future work skills as follows (Puranen 2015):

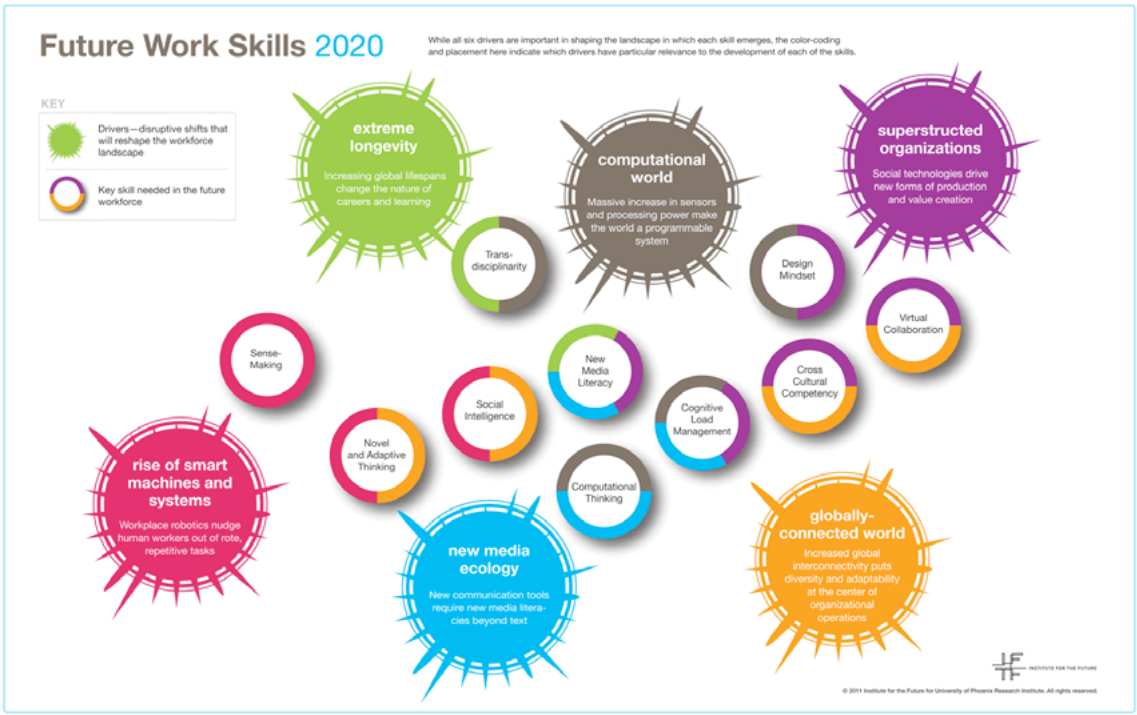

Figure 2. Future work skills. Institute for the Future, University of Phoenix.
http://www.iftf.org/fileadmin/user_upload/images/whatwedo/IFTF_FutureWorkSkillsSummary.gif

Social intelligence

In the future, our colleagues will frequently be located in different countries, and we will use technological devices to keep in touch with them. In this situation, the ability to adapt to different practices and to interpret correctly the reactions and motives of others will be particularly important.

Media literacy

It will be important to keep up to date on new ways of producing content and using it in communication. Social media and digitality are part of life for almost all employees already, and as technology evolves further, they will be tools used by more and more workers.

Computational thinking

Increasing quantities of different types of statistics and data will be available. Competence in interpreting and using them should be on the list of skills to be studied for the future.

Virtual collaboration

As our colleagues are spread around the globe, mastering work in virtual teams will be essential. Conventional meetings will more and more often be replaced by video calls and chats. Your supervisor may also be based in a different country, which will further underscore the importance of adequate communication.

Sense-making

The volume of information on the web will grow exponentially, which will make skills in filtering information and an ability to evaluate sources critically valuable in the future.

Novel and adaptive thinking

The world is changing rapidly, and each one of us should be able to keep an eye on these changes and show initiative in adapting our skills to them in order to remain competitive in the labour market.

Innovativeness and resilience as preconditions for global competitiveness

Companies can succeed in competition by launching new products and services or by updating their current products – in other words, innovations. Innovations are often based on multidisciplinary competence. Innovations boost companies' success in their business dealings, push up their productivity and thus improve their competitiveness. Innovations improve the productivity of our national economy and enable a high standard of living and well-being.

Innovativeness requires an ability to apply your knowledge and skills to new tasks and situations, to transfer knowledge to specific new areas. According to Ruohotie (2005), sufficiently strong vocation-specific competence is, however, always a precondition for application. The new era of entrepreneurship will bring significant opportunities for those who can develop, implement and commercialise new and innovative ideas (Lehto 2011).

According to Professor Vesa Harmaakorpi (2013), only 4% of innovations are produced by science and research, while the majority, 96%, are created in the course of practical work. Harmaakorpi thus distinguishes between two modes in innovation activities:

- Mode 1 – Science, technology, innovation (STI). The knowledge production process of mode 1 is based on developments within a single branch

of science. It is described by a homogeneous and cognitive knowledge interest.

- Mode 2 – Doing, using, interacting (DUI). The knowledge production process of mode 2, on the other hand, is heterogeneous and multidisciplinary, and it often takes place in practical situations and ordinary social and economic contexts. Harmaakorpi goes on to divide mode 2 into modes 2A and 2B.
    - 2A is based on future knowledge and intellectual cross-pollination in innovation networks. Universities of applied sciences and universities are key research and education environments.
    - 2B is based on tacit knowledge. The innovation environment comprises the workplace and forums for workplace development. Harmaakorpi regards universities of applied sciences, secondary level educational institutions and adult education organisations as the most important research and education environments of mode 2B.

Characteristics of innovativeness include not only producing something new, but also learning, recognising an idea or a value, and the sharing of such a value (Korpelainen 2009). Quantitatively, a significant share of innovations are based on practically oriented, tacit knowledge, and it is thus vital that obstacles to innovativeness are removed in all areas. It is important to promote innovation capability both in workplaces and at educational institutions: learning is part of the job, and teams and networks come up with ideas, develop them further and share competence. Top experts of the future already gather experiences from innovation activities during their studies as part of their career paths. Workplace supervisors, teachers and students can come together as multi-professional teams that develop products, services or operating models together. Study guidance should be replaced by career guidance that takes into account lifelong learning and its key skills. Key competences for lifelong learning are needed for continuous learning, coming to terms with the future and new situations, and coping with the changing conditions of the workplace. They build the vocational knowledge and civic skills needed in all sectors and help students keep up with changes in society and the labour market and operate in changing conditions. They also have great importance in terms of an individual's quality of life and personality development. The eight key competences for lifelong learning are as follows:

1) communication in the mother tongue;

2) communication in foreign languages;

3) mathematical competence and basic competences in science and technology;

4) digital competence;

5) learning to learn;

6) social and civic competences;

7) sense of initiative and entrepreneurship; and

8) cultural awareness and expression.

This list of key competences for lifelong learning is based on the Recommendation of the European Parliament and of the Council 2006/962/EC of 18 December 2006 (OJEU L 394, 30 December 2006).

In recent times, the concept of resilience has come up in discussions about changes in vocational education and training. In psychology, it has traditionally referred to an ability to cope with adversity, but today it is also often used to mean the ability of an individual or an organisation to cope with changes and threats, and to describe how, regardless of setbacks, the best possible end result can be reached. Another viewpoint is related to how we as teachers support the development of resilience in our students. In this sense, resilience contains at least four important areas of development: social relationships, recognising your own strengths, self-efficacy and positive emotions. All of these development areas are also essential to developing top expertise.

How the pedagogy of top expertise responds to future competence needs

Close cooperation with employers and vocational education and training is part of the pedagogy of top expertise. The education and training should be planned, delivered and evaluated in cooperation with employers. Development of top expertise requires work and education in turns. In addition to other environments, learning also takes place in the workplace. It is important that a person studying for a profession gains experiences in not only performing work in the workplace, but also in continuous development of the work, networking and making his or her competence visible while still a student. Both workplaces and educational institutions need competence to recognise and support top expertise – to develop potential talent. Studies indicate that young people's attitudes towards work have also changed: work no longer is the main purpose of their lives. Young people select employers, and they commit to meaningful work rather than to a company or an organisation (Pantzar & Halava 2010, Lehto 2011).

In the pedagogy of vocational top expertise, a purposeful effort is made to combine learning that takes place at an educational institution with on-the job learning – or formal and informal learning. Experience gained in

the workplace is comprehensively taken into account in the curriculum as a whole. The aim is at providing integrated support for both conceptual learning and the learning of skills needed in different work environments. For this reason, the students apply theoretical knowledge in practice and reflect on their work experience in light of theoretical knowledge. This connective model (Tynjälä 2006, 111, Tynjälä, Häkkinen & Hämäläinen 2014; Tynjälä & Newton 2014) highlights a combination of learning in different learning environments that stems from the curriculum level, as well as cooperation between the educational institution and workplaces. A potential top expert needs the support of a top-level learning environment and top-level instructors. The connective learning concept is also manifested in the pedagogy of vocational top expertise where certain features related to learning are highlighted: social skills, the ability to work under pressure, continuous learning, change management in addition to strong substance competence, and responding to the needs of different customers.

Digitality as well as combining formal and informal learning set completely new requirements for the expertise of a vocational teacher and instructor compared to the conventional view of a teacher's competence related to planning and implementing learning situations (cf. Juntunen 2014). According to the conventional view, a teacher's expertise is individual: in practice, the teacher's job is to deliver instruction following a curriculum handed down to him or her where applicable. Today, a teacher's expertise is understood as a collective characteristic. Hakkarainen and Paavola (2006) argue that through collective expertise, it is possible to reach achievements that are essentially more demanding than what an individual could manage alone. The following intellectual systems are manifestations of collective expertise: a transactive memory, a collective mind, a decentralised cognitive system, a regime and a learning network (Hakkarainen & Paavola 2006, 236–243). Similarly to a potential top expert, a teacher and an instructor should look after developing their own competence by participating in cooperation networks and various development projects that are relevant to workplace practices. A teacher also needs guidance and mentoring to develop his or her competence.

The reform of vocational education and training that is currently under way in Finland (MinEdu 2016), and the training agreements that are a part of it, will provide plenty of opportunities for common goal-setting, the delivery of education and training and continuous development between a company and an educational institution. In the following section, two examples of cooperation aiming at top expertise between an educational institution and companies are discussed, where common goals have been set and joint operating models have been developed.

Skanska Talonrakennus Oy, a construction company and WinNova, a provider of vocational upper secondary education, have joined forces to develop a flexible study and career path for potential top experts in the construction sector. WinNova's values are safety and people orientation. On

the other hand, Skanska has a five zeros vision: 0 loss-making projects, 0 environment incidents, 0 accidents, 0 ethical breaches, 0 defects. These visions are the foundation for training cooperation between Skanska and WinNova, the forms of which include:

- Membership in a working life committee
- On-the-job learning on construction sites that require and develop top expertise
- Participation in national vocational skills competitions, Taitaja competition semifinals
- Roll Out the Talent project
- Anticipation Chamber for Construction

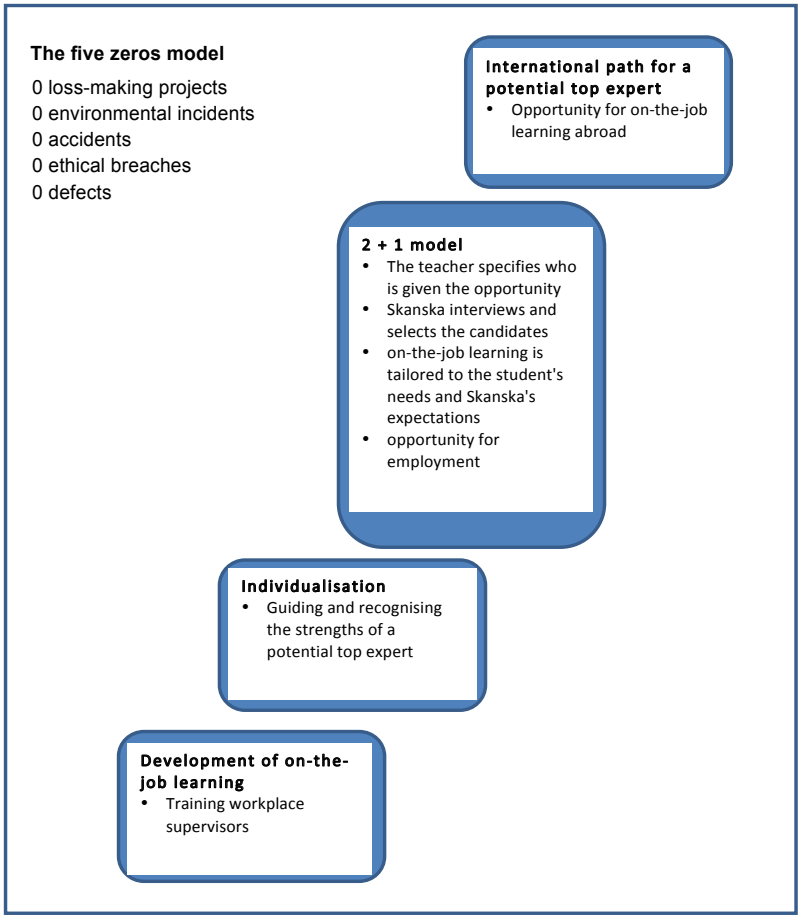

Figure 3. Skanska Talonrakennus Oy and WinNova strive together to achieve the vision of five zeros in the Roll Out the Talent project (Eerola, Tuominen, Hakkarainen, Laurikainen & Mero 2014, 36–37).

Another good example is the Guild schools (Kiltakoulut) operating model. In this model, digitality, social media and gameful learning are used both to activate students and for them to acquire strong vocational skills and workplace capabilities. An entrepreneurial attitude towards learning and being ready for action take the students toward vocational top expertise.

The guild schools consciously develop learning-to-learn skills, teamwork skills and work-guidance skills. The skills of observing, documenting and reflecting on tasks acquired during vocational studies will continue to support the growth of vocational skills during their working career. For more details on the pedagogical methods of the Surface Treatment Guild, visit: http://pintakilta.wikispaces.com/Surface+treatment+guild. (Välkkynen 2012.)

Vocational skills competitions intended for young people are an effective tool for developing top vocational expertise. They offer potential top experts of the future an opportunity to test and compare their skills. At the same time, young people gain experience in developing their competence to the top level and their own ability to work under pressure while still students. Competition activities further promote cooperation between educational institutions and workplaces. A vocational student can be sure that the education and training offer him or her competence that responds to workplace needs. This is apt to boost their self-esteem and professional pride. By working together with educational institutions, companies can ensure that competent experts who are able to meet the company's needs will also be available in the future. Operating models used for coaching top experts that aim for success in competitions can be used both at educational institutions and in the workplaces. Competition activities offer a path for competence development not only for young people studying for a profession but also for teachers and workplace personnel. At the same time, they will brighten the corporate images of both the company and the educational institution.

References

Eerola, T. & Tuominen, P. & Hakkarainen, R-L. & Laurikainen, M. & Mero, N. (2014). *Roll out the talent, Final project report*. Hämeenlinna: Häme University of Applied Sciences

European Parliament (2006). Recommendation of the European Parliament and of the Council 2006/962/EC, of 18 December 2006 on key competences for lifelong learning (OJEU L 394, 30.12.2006).

Hakkarainen, K. & Paavola, S. (2006). Kollektiivisen asiantuntijuuden mahdollisuuksia ja rajoituksia – kognitiotieteellinen näkökulma. In Parviainen, J. (ed.). *Kollektiivinen asiantuntijuus*. Tampere: Tampere University Press, 214–272.

Harmaakorpi, V. (2013). *Innovaatiotoiminnan moodit*. Retrieved 30 August 2016 from http://www.slideshare.net/VesaHarmaakorpi/innovaatiotoiminan-moodit.

Hartikainen, E. (2014). Tulevaisuuden trendit. *Sitra*. Retrieved 30 August 2016 from http://www.slideshare.net/fullscreen/SitraFund/sitran-trendilista-20142015/13.

Juntunen, J. (2014). Oppimisen tulevaisuus – digitaaliset oppijat muuttuvassa työelämässä. ePooki. Retrieved 30 August 2016 from http://www.oamk.fi/epooki/index.php?cID=540.

Korpelainen, K. (2009). In Search of an Innovative Vocational Institute. In K. Korpelainen, R. Liivik & H. Paju (Eds.) *Vocational Pedagogy for Teachers and Students*. Tallinn: Tallinn University

Lehto, A-M. (2011). Arvoa nuorten työvoimalle. *Tieto ja trendit,* 1/2011. Retrieved 30 August 2016 from http://tilastokeskus.fi/tup/tietotrendit/tt_01_11.html?_ga=1.243247809.232270961.1479128234.

MinEdu (2016). *Ministry of Education and Culture in Finland*. Government's key projects to reform competencies and education. Retrieved 30 August 2016 from http://www.minedu.fi/osaaminenjakoulutus/?lang=en.

Ministry of Economic Affairs and Employment (2016). *Ministry of Economic Affairs and Employment 2020 strategy*. National Working Life Development Strategy to 2020. Retrieved 30 August 2016 from http://tem.fi/documents/1410877/232942/tyoelaman_kehittamisstrategia_final.pdf/74fdf60e-0a8c-4419-a401-0e894ad1c07c.

Mäenpää, M. (2016). Sitra working paper. *Sitra*. Retrieved 30 August 2016 from https://www.sitra.fi/julkaisut/Muut/Millainen_on_tyon_ja_tyomarkkinoiden_tulevaisuus.pdf.

Pantzar, M. & Halava, I. (2010). Kuluttajakansalaiset tulevat. Miksi työn johtaminen muuttuu? *EVA report 29.9.2010*. Retrieved 30 August 2016 from http://bit.ly/1MovTdl.

Puranen, M. (2015). Näitä taitoja tulevaisuuden työelämässä tarvitaan. *Monster klubi*. Retrieved 30 August 2016 from http://monsterklubi.fi/blog/naita-taitoja-tulevaisuuden-tyoelamassa-tarvitaan/

Ruohotie, P. (2005). Ammatillinen kompetenssi ja sen kehittäminen. *Ammattikasvatuksen aikakauskirja* 7 (3), 4–18.

Tynjälä, P. (2006). Opettajan asiantuntijuus ja työkulttuurit. In Nummenmaa, A.R. & Välijärvi, J. (eds.). *Opettajan työ ja oppiminen*. Jyväskylä: Academy of Finland's Life as Learning research programme Finnish Institute for Educational Research, 99–122.

Tynjälä, P. & Häkkinen, P. & Hämäläinen, R. (2014). TEL@work – Towards integration of theory and practice. *British Journal of Educational Technology*. British Journal of Educational Technology 45(6), 990–1000.

Tynjälä, P. & Newton, J.M. (2014). Transitions to working life: Securing professional competence. In S. Billett, C. Harteis & H. Gruber (eds.). *International handbook of research in professional and practice-based learning*. Springer International Handbooks of Education Volume 1. Dordrecht: Springer, 513–534.

Välkkynen, J. (2012). Surface treatment guild. *Pintakilta*. Retrieved 30 August 2016 from http://pintakilta.wikispaces.com/Surface+treatment+guild.

Recognising and supporting a student's special strengths in vocational education and training

Päivi Pynnönen & Anu Raudasoja

Equality between students has been one of the guiding principles of Finnish education policy since the 1970s. In terms of legislation, the purpose of this principle was to safeguard access to education for students who need special support, especially because of learning difficulties or a disability. The perspectives of individuality and freedom of choice as well as justifications for catering to the special needs of talented students in education and training were brought up in the 1980s. Only as late as 2007 did the Finnish Government Programme for the first time make reference to promoting talent and creativity as national objectives of education. (Tirri & Kuusisto 2013.) The Finnish education system continues to be underpinned by strong values of fairness, equality and protecting the weak. These values also invoke the arguments used to justify the provision of special instruction for talented students with special strengths. Equality means taking

the special needs of all students into consideration in teaching, including those of the most talented students. (Uusikylä 2008; Tirri 2011; Tirri & Kuusisto 2013.)

Talent has been defined and understood differently in various eras and societies. In the early 20th century, talent was commonly considered synonymous with intelligence, which was measured by intelligence tests. However, such tests mainly measure an individual's level of intelligence in terms of verbal or logical thinking. Today, intelligence is seen as something more multi-dimensional. The best-known multidimensional model of intelligence is the one developed by Howard Gardner (1993). Gardner defines intelligence as "the capacity to solve problems that are valued in one or more cultural settings. When individual characteristics and cultural expectations meet, the individual is said to have special intelligence." Gardner's model comprises eight areas of intelligence. *Linguistic/verbal* intelligence is sensitivity to spoken and written language, an ability to learn languages and to use a language. *Logical/mathematical intelligence* is an ability to analyse problems logically and to perform mathematical operations. *Musical intelligence* comprises skills in performing and composing music. *Bodily-kinesthetic intelligence* is an ability to use your whole body, or excellence in fine motor skills. *Spatial intelligence* is an ability to recognise and perceive patterns or regularities in a space or in a defined area. *Naturalist intelligence* is an ability to recognise and classify natural objects, such as plants and animals, and to enjoy the beauty of nature and activity in a natural setting. *Interpersonal intelligenc*e is an ability to understand the intentions, motives and desires of others and to work well together with others. *Intrapersonal intelligence,* on the other hand, is an ability to understand oneself and to regulate one's emotions and ways of acting. (cf. Uusikylä 1994; Mäkelä 2009; Tirri 2013.)

Based on Gardner's model, Tirri and Nokelainen (2011) have developed a gauge for self-assessment of intelligence, and their research results indicate that a learner's idea of his or her own intelligence is an important factor that influences learning. Each one of us is born with our own unique genetic inheritance, which underpins our intelligence. Intelligence can be visible in one or more areas, or it can be latent. Developing intelligence into a special talent requires practice and effort. The talents individuals choose to develop and the ways in which they develop them depend on each individual's interests, home background, schooling, and the values and expectations of the society and culture surrounding them. When cultural expectations and valuations and an individual's capabilities meet, the talent is seen as useful. In Finland, a talented surfer is unlikely to have equal possibilities of developing his talent and feeling useful and appreciated as a talented ice-hockey player. (cf. Uusikylä 1994; Mäkelä 2009; Tirri & Nokelainen 2011.)

The definition of top vocational expertise is also linked to the values of society, cultural factors and vocational fields. According to studies of vocational skills competitions, "a vocational top expert is a person who, in addition to vocation-specific skills that have advanced to an autonomous level, also has natural talent and is exposed to favourable environmental factors and driven by a desire for sustained participation in goal-oriented and guided coaching. This coaching develops the optimal exploitation of mental resources through knowledge and regulation of intrapersonal characteristics" (Nokelainen 2010).

Recognising special strengths

Educational institutions strive to recognise and cater to the needs of different learners. Recognising each student's strengths as a learner is vital, as learning cannot be based on weaknesses, only on strengths. The purpose of teaching talented students is to give instruction that corresponds with their capabilities and development needs, so that each student's talent potential can be brought into play and underachievement avoided. A student's holistic development must be addressed in all teaching. In addition to knowledge and skills, it is important to consider a student's social, ethical and emotional development. In many countries, the goal of recognising talented students is to isolate them in dedicated educational institutions or special programmes. In Finland, the purpose of recognising such students is to ensure that their needs can be optimally catered to and supported in mainstream education. An effort is made to organise the required support measures for talented students so that there would be no need for differentiated teaching in separate classes or institutions and that all students would learn to work together and appreciate their differences as a resource. When planning instruction, we should remember that a student may be talented in a single individual area or multiple areas, but one person is rarely talented in everything. A student may simultaneously be highly talented in one area and extremely weak in another. All students have their personal talent profiles, and these profiles can be a very uneven mix. For example, a student may be highly talented in mathematics, while reading and writing may continuously be a great challenge to his or her learning. A talented student may also display learning difficulties or behavioural problems. (Mäkelä 2009.)

Based on Carol Dweck's theory (2006), intelligence can be approached with two different mindsets that influence our motivation for learning. These can be described as a fixed mindset and a growth mindset. People with a fixed mindset believe that traits related to intelligence are based on inborn or permanent characteristics. According to this mindset, only those lacking in talent need to practice. If you are good at mathematics, for example,

you have no need to practice arithmetics. Failing is a sign of inability and lack of talent in some area. As mistakes are a sign of stupidity and inferiority, failure often makes a student feel ashamed, and failing may incapacitate him or her from making an effort in his or her studies. (Tirri 2013.)

For people with a growth mindset, success and a person's characteristics are the result of practice and work, in which case failing is an elemental part of progress and learning. Instead of shame, failing may give rise to a wish to try again, as having already made the mistake, you now know how to correct it or do better next time. Teachers should guide their students towards seeing themselves and their fellow students as developing individuals, not persons doomed to the characteristics of a certain type or level of intelligence. By his or her feedback, a teacher may inadvertently either reinforce a student's idea of fixed or changing characteristics or support the idea of the importance of study and practice in developing talent. The teachers' mindsets and feedback influence students' ideas about their possibilities to develop their personal competence potential. All learners should be offered the possibility for individual learning and growth. Teachers play a key role in creating these opportunities. (Dweck 2006; Tirri 2013.)

To recognise the special strengths of students, it is a good idea to observe not only those whose talents are already known but also the possible latent potential of everyone. An individual test, subject or learning situation does not directly give the correct overall idea of a student's knowledge and skills. The teacher should create opportunities for a student to demonstrate his or her talent. According to Mäkelä (2009), talented students can be optimally recognized at an educational institution when:

1. You combine different types of information on the students, including information on their cognitive knowledge and skills, vocational knowledge and skills, creativity and motivation, and descriptions of their learning and behaviour.

2. You combine several sources of information, including the outcome of an initial interview, points scored on tests or examinations and grades, and the opinions of the student, a group supervisor, a special needs teacher, parents, supervisors, classmates, etc.

3. You create possibilities for recognising talent in a number of different locations and at different times in various classes, projects, on-the-job learning sites, vocational skills competitions, summer jobs, hobbies, etc.

Karppi's Master's thesis (2012) indicates that vocational teacher students find the teaching of talented students a very positive prospect. Talented students, similarly as with all other students, need consideration and instruction that matches their skills and needs. It is easy to tell talented students

apart among their peers, but a lack of resources and the emphasis that the Finnish educational system places on teaching the weaker students set limits on practical implementation. The results also show that the ideas about talent and special teaching for talented students as a source of inequality are giving way to a mentality geared more towards special teaching that highlights making use of a students' maximum potential through teaching. In the study, teacher students explained that they can take a talented student into consideration in their teaching through such methods as extended and adapted on-the-job learning, various group divisions and the adaptation of assignments.

Supporting special strengths in vocational education and training

Under the Finnish Constitution, the government shall guarantee everyone an equal opportunity to receive educational services in accordance with their ability and special needs, without being prevented by economic hardship (section 16 of the Constitution 731/1999). In vocational upper secondary education and training, an individual study programme shall be prepared for each student that is based on the student's individual objectives and choices (section 29 a, Act 1998/630). The student's prior learning and its level should be identified to ensure that the student can have it recognised and accredited (section 30, Act 1998/630). The recognition of competence lays the foundation for not only setting the student's personal goals, but also determining the type of guidance and support that will be required.

Recognising the learning that a student has acquired outside formal education is one of the themes of lifelong learning selected by the European Commission. A student may acquire learning in a variety of ways, at different times and in different places. In addition to formal education, learning also occurs in the workplace, in family life and at recreational activities as well as through various means of communication. This is referred to as informal learning. In the future, better recognition and accreditation of learning outcomes and competence achieved through non-formal and informal learning has been set as a goal. (Finnish National Board of Education 2015.)

To identify a student's prior learning, an assessment discussion takes place between the student and the teacher(s). Different assessment techniques should be developed to promote the recognition of prior learning, with the aim of avoiding overlapping studies and shortening the study time. If the recognition of learning shows that the learning outcomes of a certain module, or some of the outcomes, have been achieved, accreditation of learning can take place. The accreditation is recorded in the personal study plan. (Finnish National Board of Education 2015.)

Key concepts in teaching the talented include individualisation and differentiation of instruction. They refer to special teaching arrangements by which the teacher proactively adapts the outcomes, content, learning environments and methods of teaching to respond to a student's individual needs, striving to create the best learning possibilities for each student. Special arrangements for the talented can be divided into organisational and content-related differentiation. Organisational differentiation includes accelerating the progress of teaching and grouping it so that it is suitable for different students. Content-related differentiation solutions, on the other hand, include teaching enrichment and solutions that complement teaching. The goal of enrichment is that, in one way or another, a student's personal study plan is made more extensive than it would normally be. (Mäkelä 2009.)

The document Education and research 2011–2016, a development plan states that vocational qualifications should be more flexible to allow students to make individual choices and also study for qualifications one module at a time, when appropriate, in terms of the world of work and individual needs. Work-centred study methods and alternative study models should be used in vocational education and training, for example by combining different ways of arranging vocational education and training. In addition, we should develop procedures for lowering the threshold for participation in apprenticeship training. Cooperation agreements between vocational institutions and youth workshops will increasingly be used to enable vocational students to study in a workshop or in other alternative learning environments and by creating multi-employer apprenticeship training.

In the future, the objective of upper secondary vocational education and training is to increasingly enable students to follow individual study paths and use on-the-job learning. Vocational qualifications should be more flexible to make it possible to allow for individual choices and also studying for qualifications one module at a time, when appropriate, in terms of the world of work and individual needs. Work-centred study methods and alternative study models should be used in vocational education and training, for example by combining different forms of arranging vocational education and training. In addition, we should develop procedures for lowering the threshold for participation in apprenticeship training. Cooperation agreements between vocational institutions and youth workshops will increasingly be used to enable vocational students to study in a workshop or in other alternative learning environments and by creating multi-employer apprenticeship training. (Government Programme 2016.)

Students in vocational education and training can already complete personal projects or study abroad. They may be oriented towards entrepreneurship or pursue their studies as extended on-the-job learning where various tasks are pedagogised. The student may also take combined studies that extend beyond the vocational studies in his or her vocational field

to include general upper secondary and/or vocational upper secondary studies in a different field. Talented and skilled students are often also used as assistant teachers in class at educational institutions. It should be noted, however, that using students as assistant teachers undermines their possibilities of assigning them tasks that correspond with their learning potential. This method may deprive a more talented student of challenges in studying. Differentiation and individualisation should take the form of different tasks and work, rather than continuously assigning the student more of the same work. (Perho 2010.)

Learning environments at educational institutions should make it possible to recognise and support the students' special strengths. For that purpose, the content of the instruction provided at the institution should be of a high quality, and the learning environments and the methods it offers should be versatile. If the educational institution's expectations concerning the students' standards of learning are too low, this might lead to a situation where none of the students perform to a high standard. The institution should thus offer its students alternatives for learning that present different types of challenges, including the possibility of taking part in vocational skills or cultural competitions. (Perho 2010.) According to studies, competitions are an important element that inspire and enhance the motivation of the more talented students in particular – whether we are talking about academic skills, such as mathematics (Tirri & Nokelainen 2011), or manual vocational skills (Nokelainen, Korpelainen & Ruohotie, 2009).

In order to individualise learning processes, the teacher needs a didactic mentality and functional ability of a large scope. Responding students in surveys concerning top expertise felt that the role of teachers at vocational educational institutions is crucial in attracting interest in the relevant vocational field and vocational skills competitions. The vocational skills competition coach also plays an important role for a young person who is developing his or her vocational skills to reach the top level. Internal goal orientation (interest in the contents of a vocational field) is more important than external goal orientation (interest in demonstrating one's vocation-specific skills to others) in developing an interest in a vocational field. It is also more important after coaching as the student's vocational skills develop. External goal orientation is more important than internal goal orientation during the preparation period. (Nokelainen, Korpelainen & Ruohotie 2009.) The aim of vocational skills coaching is to encourage all participants in continuous self-development and the development of innovative work methods. Coaching draws on various forms of on-the-job learning and capabilities for doing well in a demanding vocational skills competition and later in working life. (Skills Finland 2013.)

According to Numminen (2005), self-efficacy in a student refers to an individual's idea of his or her own ability to cope with a certain task in a certain situation. For example, his or her ideas of self-efficacy influence the orien-

tation a student chooses for his or her studies, the student's dedication to the studies, the extent to which he or she keeps on trying after a failure, or how persistent he or she is when faced with adversity. Ideas about self-efficacy develop gradually in various situations where the students interact with their surroundings. They are influenced by the students' personal experiences of success and failure, but also by their observations and by the comparisons made between their performances and those of others. Feedback from persons who are important for the individual, such as teachers, also has an impact on these beliefs.

The teacher should support the holistic development of his or her students as a part of instruction and guidance. In vocational education and training, the ethical and moral perspectives of different professions and the top expertise brought into play in them, as well as the ethics and morality related to everyone's personal actions, should also be examined in the development of top expertise. (cf. Tirri ja Kuusisto 2013; Viljamaa 2013). The buildings and equipment of an educational institution are of secondary importance compared to human interaction, social support for learning and providing an example of working in the profession. According to Uusikylä (2012), a teacher always needs "three c's" in his or her work: creativity, courage and caring. If learning takes place in a motivating and encouraging atmosphere where the student feels appreciated, this at best enables him/her to develop his or her talent into a capability and special talent, which in the professional world are demonstrated as the competent and responsible actions and excellent working skills that comprise top expertise.

References

Dweck, C. (2006). Mindset: The New Psychology of Success. New York: Random House Publishing Group.

Finnish National Board of Education (2015). *Arvioinnin opas*. Finnish National Board of Education. Guides and manuals 2015:11.

Finnish Government (2016). *Government Programme*. Key project 2: Reform of vocational upper secondary education. Retrieved 22 August 2016 from http://valtioneuvosto.fi/hallitusohjelman-toteutus/osaaminen/karkihanke2#toimenpide1.

Karppi, P. (2012). *"Homma niinku käy siltä" Ammatillisten opettajaopiskelijoiden käsityksiä lahjakkaista ja lahjakkaiden opetuksesta*. A Master's thesis. University of Tampere. Retrieved 22 August 2016 from. http://urn.fi/urn:nbn:fi:uta-1-23084

Ministry of Education and Culture. (2012). *Koulutus ja tutkimus vuosina 2011–2016. Kehittämissuunnitelma*. Publications of the Ministry of Education and Culture 2012:1. Helsinki: Kopijyvä Oy.

Mäkelä, S. (2009). *Lahjakkuuden ja erityisvahvuuksien tunnistaminen*. Helsinki: Finnish National Board of Education.

Nokelainen, P. (2010). Mistä on ammatilliset huippuosaajat tehty? *Ammattikasvatuksen aikakauskirja,* 12(2), 4–12.

Numminen, A. (2005). *Laulutaidottomasta kehittyväksi laulajaksi. Tutkimus aikuisen laulutaidon lukoista ja niiden aukaisemisesta*. Studia Musica 25. Helsinki: Hakapaino.

Perho E., (2010). *Lahjakkaan opiskelijan tukitoimet ammatillisessa koulutuksessa*. A development project. Häme University of Applied Sciences. Professional special needs teacher education.

Ruohotie, P. & Nokelainen, P. & Korpelainen, K. (2009). Ammatillisen huippuosaamisen mallintaminen: Huippuosaajaksi kasvaminen ja kasvun edellytykset: laadullisen aineiston yhteenveto. *Ammattikasvatuksen aikakauskirja* 11(1), 33–47.

Section 29 a, Act 1998/630. *Finlex Database of legislative information*. Retrieved 22 August 2016 from http://www.finlex.fi/fi/.

Section 30, Act 1998/630. *Finlex Database of legislative information*. Retrieved 22 August 2016 from http://www.finlex.fi/fi/.

Section 16 of the Constitution (731/1999). *Finlex Database of legislative information*. Retrieved 22 August 2016 http://www.finlex.fi/fi/.

Skills Finland (2016). Retrieved 22 August 2016 from http://www.skillsfinland.fi.

Tirri, K. & Nokelainen, P. (2011). Measuring multiple intelligences and moral sensitivities in education. Rotterdam: SensePublishers.

Tirri, K. (2013). *Lecture Kirjava Lahjakkuus*. Lecture series Studia Generalia. Fellmannia auditorium. 21 February 2013 University of Helsinki.

Tirri, K & Kuusisto, E. (2013). How Finland serves gifted and talented pupils. *Journal for the Education of the Gifted* 36 (1), 84–86.

Uusikylä, K., (1994). *Lahjakkaiden kasvatus*. Helsinki: WSOY.

Uusikylä, K., (2008). *Naislahjakkuus*. Juva: PS-kustannus.

Uusikylä, K., (2012). *Luovuus kuuluu kaikille*. Juva: PS-kustannus.

Viljamaa, J. (2013). *Tue lapsesi lahjakuutta*. Helsinki: WSOY.

Professional growth towards top expertise

Tia Isokorpi

A person who knows how to do something really well, who manages a job to an excellent standard, and who does not make mistakes and appears relaxed is a top expert. When you watch a vocational top expert at work, what he or she does looks easy. The top expert makes the correct decisions at the right time, without errors, efficiently and skilfully. The illusion of ease might suggest that anyone could work like that or reach the same standard. In fact, the *competence* of a vocational top expert is about a complex skill that the person has practised over and over again and honed to make sure that he or she can work fast, automatically and also in unexpected circumstances. When giving a peak performance, the individual is also working to the limit of his or her abilities, while at the same time enjoying what he or she does. This is what we call a flow experience.

Vocational top expertise and a top expert

Developing into a vocational top expert takes time. Just mastering the skills is not enough for top experts; they also must know what they are

doing at the cognitive and conceptual level. They can justify their actions by drawing on the latest *conceptual and theoretical knowledge* of the field. In order for someone to become a top expert in a field, they must have received education and training in it, they must have maintained and developed their skills by pursuing further and continuing training, and they must have worked in the field for at least 10 years and focused on it for at least four hours every day. A total of 10,000 hours of intensive work and learning is generally considered necessary. Working means acting in the expert culture of the field in cooperation with others.

In addition to skills and knowledge, top experts have a high level of *attitudinal capabilities*. By these, I mean mental abilities. A top expert acts in accordance with his or her personal values, enabling each person to operate at their personal best level of competence and efficacy. Universal values are also visible and easy to distinguish in the actions of a top expert: goodness, truth and beauty. It is essential for a top expert to be aware of and recognise his or her mental resources (associated with the intrapersonal skills of emotional intelligence, see Isokorpi 2003, 2004) and use them optimally. Flexible and positive attitudes are success factors. In learning, positive attitudes are crucial. Negative attitudes, on the other hand, efficiently block learning. Attitude problems also often lead to so-called underachievement in tasks. A motive or reason is always needed for a change of attitude, but it also requires mental abilities.

Vocational top experts have *good self-regulation skills;* they are able to direct their own development in harmony with their personal values, rather than in breach of them. Values guide our lives, behaviour and choices and reflect what is important for each one of us. Acting in accordance with our values gives us energy and enthusiasm for our work. Values are associated with our identities and reflect our deepest selves. Vocational top experts are aware of what they already know and what that level of knowledge entails as well as what type of competence they will need in the future and how to obtain it. A willingness and an ability to learn new skills is an essential part of top expertise. By this, I mean professional growth and growth as a human being, which cannot be separated. Accepting responsibility for your own actions and being committed to what you do is also an important self-regulation skill. It is crucial to understand and accept yourself in relation to the reality surrounding you, to understand how the world around you affects your experiences of yourself as a human being and a professional in your respective field. The prevailing practices in your surroundings are not necessarily meaningful for you. How, even in an environment like this, can you still listen to your inner self and follow your intuition without upsetting and mentally bruising others?

A top expert lives *a meaningful life*. In general, human beings look for meaning in their lives. This means feeling that who you are and what you do are personally valuable and meaningful for you. The experience of

meaningfulness is associated with an understanding of being sufficiently aware of what you are doing in your life. According to Soili Järvilehto and Raija Kiiski (2009), people need experiences of efficacy and success in order to find their lives meaningful, comprehensible and controllable. They need a vision of things that they find worth pursuing and a means for approaching such things. When they find this vision, the result is a feeling of joy and flow experiences. Everything then happens effortlessly. Ilona Rauhala (2011) claims that meaningfulness can be approached by reflecting on the questions of why do I live and act in a certain way? Why did I enter this world? What did I come here to learn? What did I come here to love? How will my choices affect my life and other people's lives over the long term?

Looking after your personal well-being is a key part of top expertise. It includes caring for and valuing yourself. The book Duktighetsfällan (Rose & Perski 2010, translated into Finnish as Ylitunnollisuus – eroon suorittamisen paineesta) contains good questions to aid in this reflection process. For example, you can ask yourself what the power is that drives someone to achieve more and better results. Is it a wish to achieve something meaningful for yourself and others? Or is it about demands set by yourself or others that may force you to push yourself beyond your limits?

Why is well-being important? It is the foundation of everything. When supported by a sense of well-being, you can move on from your problems. The feeling of well-being has a positive effect on problem-solving and decision-making skills. Well-being is a self-perpetuating cycle: for example, a person who feels well treats others better than someone who does not feel well. The importance of well-being is also reflected in the fact that professional growth and the feeling of empowerment are fundamentally linked. *Professional growth also always means empowerment, even if the actual growth process may be tough and demand plenty of resources.* Growth means reaching a new level of development. Once at this level, you feel relieved, and if the growth has taken place in the direction of your goals and wishes, it comes with a strong feeling of joy. It is the feeling that follows from growth that tells you if your goal was worth pursuing.

Vocational top expertise is revealed and *realised in a certain environment and in a certain culture that enables top expertise.* You can become a top expert in an environment that enables the development of top expertise. Eija Mäkirintala (2011) refers to a creative touch that helps in the development of top expertise. For example, in development a creative touch helps to avoid a situation where the demand to continuously perform at a top level becomes a burden or a compulsion, and it can thus prevent a sudden drop in the standard of performances. Over the long term, it is important to enjoy reaching the objectives and the process that takes you there.

Based on research in top expertise, Petri Nokelainen (2010) defines a top vocational expert as a "person who, in addition to vocation-specific skills

that have reached an autonomous level, also has natural talent, favourable environmental factors, and a willingness for long-term participation in goal-oriented and guided coaching that seeks to develop the optimal exploitation of mental resources through recognising and regulating intrapersonal properties."

In his book Search Inside Yourself (2012, translated into Finnish as Mietiskellen menestykseen), Chade-Meng Tan distinguishes between six areas of skills that separate top performances from average ones. They are 1) a strong achievement drive and high standards, 2) an ability to influence others, 3) conceptual thinking, 4) analytical ability, 5) initiative when encountering challenges, and 6) self-confidence. These skills make it possible to create favourable conditions for sustained happiness.

Because professional growth and growth as a human being always go hand in hand, your personality also develops together with top vocational expertise. Mirja Kalliopuska, docent in psychology, Instructor Hannele Nykänen and Pauli Miettinen, M. Sc. (Sport and Health) (1996), defined a top person as an individual who is highly successful in his or her field and rather satisfied with his or her life. The self-confidence of a top personality is constructed in a healthy way, and he or she trusts in his or her own abilities. In addition, he or she is independent and self-reliant, which is a criterion of good mental health. A top person is able to share emotions and experiences with others. He or she has a genuine ability for empathy. Being able to love and accept love are strong preconditions for empathy.

Everyone wants to and has a need to feel competent and capable. Everyone can become more skilful in his or her field. The essential aspect in this growth process is finding what you do meaningful, being enthusiastic about it. What results is a positive cycle: when doing something brings you joy, you naturally do more of it and search for situations where you can learn more about it. This will also lead to increased competence and better results. Christina Forssell (2012) notes that the need to succeed is one of our basic psychological needs. A humble attitude, recognising that you will never be perfect and that there will always be something to improve, combined with pride in your own dedication and hard work, are all important pillars of motivation for a good performance. *Top expertise requires an ability to be enchanted by what you do.* A good end result is not enough; you must find the right type of relationship with what you are doing.

Professional growth as part of preparation for top expertise

Achieving top expertise requires goal-oriented and long-term preparation. In this section, I will describe the "frame of reference" that makes personal professional growth and examining one's own development possible. This is the frame of reference I use for the conscious and systematic guidance of

teachers' professional growth. The examples and results that describe the process are, in other words, related to teachers' professional growth. The frame of reference can be applied to any vocational field and to the education and training of both young people and adults. The same principles may also be followed in general education. I have inserted questions in the text to stimulate the reader and to encourage reflection on what this issue or phenomenon could mean in your sector or work.

Before presenting the frame of reference, I would like to describe **my personal starting points for acting as an instructor.** Following these principles lends both a feeling of security and assertiveness to my work as an instructor. The first principle is 1) *being an adult*. This means that the students make the choices related to their studies themselves and also are responsible for the consequences of their choices. The choices must be made within certain *limits*. As an instructor, I monitor the students' choices, and we also work on them during guidance sessions. Students bump up against their personal limits and "become bruised" during their studies, but it is important that these situations are discussed and that the students can move on and continue their growth. It is vital for a student to be the owner of his or her learning process. On the other hand, the teacher must own his or her guidance process.

The second starting point of my instruction work is 2) *communality*. In concrete terms, this means that each member of the group is needed, just as they are, and that the natural strengths of each student are utilised in the group and its activities. Communality means creating a shared mind and living together. It is also important to ensure that the students do not begin work on the group's joint task before its members have had an experience of togetherness – "us".

The third principle that guides my work as an instructor is 3) *being genuine*. By this, I mean that the group members can speak their minds and also be themselves in other respects – complete with their own wishes, needs, shortcomings and incompletenesses. Genuineness in a group does not come from nothing; it requires conscious guidance acts on the part of the teacher. It is a great personal joy for me when groups that I instruct and lead seek and also achieve this type of genuineness.

My fourth principle is 4) *living in the moment*. It is my aim that we learn to be present in each situation, to pause in the time and the state that is now. This means that you may be in a state of not knowing, and also feel safe in it. When the students have no need to be nervous or fearful, they can fully focus on what is achieved in the present situation, with their bodies and souls. By living in the moment, it is also possible to reach deeper unconscious levels or previous experiences that we have already forgotten about.

My fifth principle is that 5) *you cannot plan growth*. In other words, it is important in a group to learn to trust whatever the situation produces. It is a resource. However, this is difficult both for the teacher and the students, as the prevailing culture favours forward planning, being in control and making sure everything will work out. However, moments have something important to give us. Living in the moment is the very skill which enables the birth of a community that has a positive power over its members and that enables the personal, unique growth of its members. This also makes the community unique and distinguishable. Being in the moment requires an understanding of the nature and usefulness of the unpredictable, and courage to give space for things to happen. As an instructor, I cannot plan and know in advance the end results of the instruction; I have to be humble enough to accept whatever happens in the group. This makes studying into something more than just completing studies.

Development programme for empowerment

In the guidance of professional growth, I apply the outcomes and principles resulting from a project titled "Guiding an adult learner at a university of applied sciences". The development programme for personal and vocational identity empowerment was created to support professional growth as a result of a two-year national cooperation project of teachers at universities of applied sciences (Isokorpi 2009; Isokorpi, Kokko & Hämäläinen 2009; Nuutinen 2009; Saari 2009). Studies have established that the methods devised in the programme to develop empowerment can help support your professional identity at a workplace where you are faced with the challenges of being rushed, continuously increasing requirements, competition, changing work and professional structures, and the objectives of self-regulation and innovation. In this development programme, empowerment is understood as an experience of inner power, increased self-confidence and mastering of social skills. All of these skills also are important elements of top expertise.

The aim of the group process in preparing for top expertise in vocational education can, for example, be that the students produce and examine stories about their studies, future jobs and possible competition activities. What they look at is their selves, their relationship with work and vocational skills competitions, their relationship with the student group, the group's relationship with the self and the group members' views of being a student and undergoing coaching. The teachers reflect on themselves and their relationship with their job and the coaching of competitors. The teachers also examine their relationship with the student group, and the group's relationship with itself.

A personal and vocational identity manifests itself as dynamic, lifelong growth. Each one of us has a personal development story that is unique

and individual. The process of professional growth lasts throughout the studies. The professional growth model has four stages, which the students focus on one at a time.

1. ME stage

The first stage of professional growth is the ME stage. The objective of the ME stage is that the student becomes "engaged" in the learning process. It also helps the student to become motivated and committed to her/his studies. For example, this can take place when the student becomes conscious of and understands more deeply the life course and "paths" that have brought him or her to the studies. The ME stage deals with issues related to the student's self-knowledge and discovering his/her competence.

The highest level of professional growth for each one of us is that we can uncover our potential while experiencing a sense of well-being. To achieve this, for example in the form of their concrete everyday actions, the students must be challenged to think, to set goals for themselves and to assume responsibility for what they do. These operating methods demonstrate belief and trust in the students. Trust in teaching and promoting growth means that you let the students solve their own problems and learn to use their imagination, without immediately offering them ready-made answers. This applies to each student. The group may comprise students who are at very different levels. Each one progresses in line with their personal objectives. The students can use each other as models for learning, which promotes their personal learning. This type of pedagogy guides the student in self-knowledge. It boosts his or her self-confidence and improves problem-solving skills. It enhances the students' ability to take on challenges.

During the ME stage, the students become aware of the types of learning strategies that help them learn, and of how they learn. At this stage, the students should give up their old roles as learners and find the inner peace that allows them to pursue their studies. **Preliminary reflection on your own professional frame of reference and requirements is also part of the ME stage.** Student teachers, for example, consider the concepts of humans, learning and knowledge, concepts upon which their own work as teachers is based.

What could this mean in your field, or for a student in your field? For example, what does a professional frame of reference mean in practical nurse training? What does it mean in the training of a confectioner?

The ME stage also includes issues related to group formation. The students' ability to act in a group deepens and expands during the process, and in the next stage of professional growth, or the YOU stage, the focus will be on what the students learn about themselves in a group. What can you learn in a group that you would not learn by acting alone?

2. YOU stage

The YOU stage consists of learning from others – from and in the study group – accepting others and accepting and valuing diversity. A precondition for getting a group to function well is fostering a trusting relationship between the group members. The objective of the second stage of professional growth, the YOU stage, thus is that the students are able to act in a peer group, trusting themselves and others. During the YOU stage, they reflect on how to establish a relationship of trust and work in pairs and small groups. They focus on consciously sharing and drawing on competence and giving and receiving feedback.

A learning culture where the group and the group members' competence are consciously used promotes creativity, enriches interaction and promotes well-being. A learning culture of this type also allows each student to reach his or her full potential. The teacher has an important role in helping students get "turned on" by their studies. For example, this can be achieved by highlighting the student's strengths and successes. Once a student's inner motivation to study has been ignited, the next step is that the student assumes responsibility for his/her learning process while supporting other group members in finding their enthusiasm for studying. Enthusiasm feeds enthusiasm, it promotes creativity and helps to overcome obstacles.

All this is based on mutual trust. Trust is also about an ability to live together, about being able to put yourself in the other's shoes and to care for him/her. The most basic human need is to feel that you are accepted just as you are, or in other words, valuable unto yourself. This boosts a healthy self-confidence. In my opinion, boosting self-confidence also means enhancing trust. People with a healthy self-confidence are capable of enriching interaction with each other, and they have the courage to discover their own ways of engaging in meaningful action.

For the purposes of coaching for top expertise, a group of this type may be a study group, a group taking part in a vocational skills competition or a national team. Reinforcing mutual trust between the students is crucial. We no longer trust others automatically, and trust needs to be practised. A requirement for this is that the teacher believes in and trusts the student.

Generating a feeling of trust is an important prerequisite for the student to continue the process of professional growth, which started in the ME phase, towards his or her top expertise.

3. US stage

The purpose of the US stage is to extend the interaction and self-knowledge skills learned in the previous stages beyond the student's own study group.

I feel confident in saying that during the first two stages, the group members learn highly constructive ways of interacting within their own group. Now it is time for them to apply these skills outside their own group. In the case of student teachers, this means that the students reflect on what they are like in their work communities. Can they be what they would like to be, or are external demands and expectations placed on them? Even if there were conflicts and tensions in the work community, the students themselves can strive to act constructively based on what they have learned in the ME and YOU stages. In addition, student teachers will reflect on the kind of teacher's identity that is being created in their work community.

What could this mean in your field, or for a student in your field? In my opinion, it is at least relevant to the way in which a student in vocational upper secondary education and training acts during an on-the-job learning period. What else could it mean, for example in a programme for practical nurses or confectioners?

During the US stage, the students also focus on developing their metacognitive and self-regulation skills. These skills are an essential part of top expertise. Student teachers will reflect on the type of frames of reference upon which their personal teaching and guidance work will be based. They will also consider challenges related to professional ethics. Reflecting on the metacognitive and professional ethics-related challenges is essential in any field.

4. THEM stage

During the THEM stage, the students consider acting in networks within their own field and developing such networks. They survey their own networks and the way they act in them. Who are they and in what way are they part of their networks and their professional community? The students also consider the issues and challenges of developing their own field. The contemplation of professional ethics that began during the US stage continues. As professional growth continues throughout our working careers, the students also reflect on their own needs for further development. It is also important for student teachers to consider how, in their own work, they promote the interests of their students (potential customers) and how the students' (the customers') values are taken into account in professional work.

The process of professional growth advances and thus progresses stage by stage. In terms of learning, it is essential to divide the process into different stages. This helps the student realise and understand what professional growth means as a concept and how it progresses in his or her case.

Assessing professional growth

Professional growth is assessed at the end of every stage before moving on to the next one. The teacher will assess and discuss his or her personal professional growth during the studies. *A learning journal is used as a tool not only for documenting growth but also for assessment.* The students write down their reflections on each stage in the learning journal, which is read by the teacher. The students receive feedback from the teacher, making the learning journal an interactive method. The significance of feedback in learning and growth is unquestionable. The issues of professional growth are also jointly discussed in the group at the general level, while still preserving the confidentiality of the students' reflections.

In the last session before the studies conclude, the group is debriefed and the training evaluated. The students assess and describe what they have learned about themselves during the study process. The students analyse their feelings about the time that professional growth takes. They assess their learning, their actions and their interactions in the group, including significant relationships in the group and their personal experiences with it. The students evaluate the actions of the group as a whole. The students also specify their future development targets.

Outcomes of the professional growth process

The programme for developing empowerment is highly productive. Student groups have been enthusiastic, active and committed to learning both on contact days and in distance work. In the early parts of the process, the students end up questioning their own prior learning. This experience triggers new learning. The students actively take part in the studies. They are rarely absent during the contact days. I believe that a well-functioning and empowering group encourages the students to taking part in the contact days. In addition, the discussions and processes are continuously linked to concrete everyday teaching and guidance situations, in other words, to the students' everyday reality.

An open and safe atmosphere is soon created in the group. The students can honestly tell the others what they think and feel and how they act in their everyday work. I have consciously instructed them to speak in the first person singular. Functional and interactive guidance methods require the active, mindful and concentrated participation of the students.

The pedagogical thinking of student teachers is successfully triggered. The students pick up new ideas concerning teaching methods and try them out in practice. *As the professional growth process progresses, the students begin to conceive of teaching more and more through pedagogical meth-*

ods, whereas earlier they had only thought about the themes they taught (substance). An in-depth learning process has been triggered.

One of the most important student experiences has been that in a group, everyone is allowed to be an individual. This is what I have aimed for as an instructor. Everyone can state their views and give their opinions in a safe environment. Interaction is open and straightforward. The group emanates caring for and appreciation of others. Support, help and understanding for the studies are available without asking. Even if the group members' backgrounds and basic assumptions in their work as teachers were widely different, the greatest common denominator in a group is enthusiasm about the studies and motivation to become a good and inspiring teacher. There is a feeling of solidarity in the group.

In order for the group to become a community that lives together, receiving feedback plays a major role. When guiding students myself, I give continuous feedback. The motivating effect of feedback has been proven unquestionably. Feedback must be concrete and it must guide and motivate the student to proceed in their studies. Praise and encouragement are vitally important in feedback. At best, feedback can be empowering for the teachers as well as for the students. Feedback should also be something that you can go back to in the future. This is important in terms of professional development.

Appreciating and respecting human diversity is part of trust. Trust does not come from trying but from caring. Trust is associated with being present and accepting people. Being genuine is a part of trust. The teacher plays a key role in creating trust. Trust is born from first impressions and from being visible. Trust comes from greeting others, making eye contact and saying thank you. Trust is transparency of intentions and character – belief in the other people's good intentions.

Trust is also about how much you trust yourself. Trust is created from success. Trust in yourself is also reinforced by the positive attitudes, acceptance and support of your surroundings. Trust goes together with believing that people are good. Those who have adequate resources and healthy self-appreciation have an ability to create around themselves a trusting atmosphere that makes people feel safe.

In the case of many students, pausing and finding a path of development that draws upon their personal resources have been internalised as a course of action. Student teachers also mentioned that they would like to have more time to pause to take stock of what they have experienced during their teacher studies. *The chance for students to pause in their studies and take stock of the growth in their professionalism and identity as a teacher are also evident in the fact that rather than doing what their colleagues do, they now develop their own conscious and justified ways of working as*

teachers (autonomous pedagogues). Their professional growth continues, and the process advances to a deeper level.

Professional growth means becoming an expert in one's own field and an equal member of the work community, some one who also acts to develop that community. The students find networking highly significant in the work of a vocational teacher. Student teachers said that the challenges related to being a teacher could incapacitate you if you let them take over. The students realise that they do not always have to know how to do everything on their own. However, their capacity for working as a teacher and their professional identity have developed. They feel more assured and relaxed in their work. They have gained self-confidence in teaching. Understanding that in the work of a teacher, the teacher must be interested in people is part of developing a teacher's identity. Pedagogical competence is, above all, about inspiring and motivating your students. You do not have to offer the solutions to the students on a plate; your job is to make the students think, realise and assume responsibility for their studies.

Professional growth is also demonstrated in growth as a human being and the skill of caring for yourself. The students have learned to accept imperfection both in themselves and in others. They have learned to observe themselves in a new way, including their innermost selves. A process of self-knowledge and deepening professional identity has clearly been triggered in the students. In the students' opinion, it was important for them to learn to recognise their own ways of acting and the impacts. It is also crucial to understand the impacts of your operating environment on you. All of these development targets are essential in top expertise. In fact, they are preconditions for becoming a top expert.

Overall evaluation of the process

In the student teachers' opinion, the pedagogical implementation that was used was a good, soft method in which you start from within yourself. Professional growth is essential, and observing it was found to be interesting. This was a wide-ranging programme where the themes were put together piece by piece. The students found the process essential for promoting their growth as teachers. Thanks to the implementation, the students are able to look at things in a more humane way. I also personally feel that *professional growth was mostly manifested in recognising different and diverse learners and accepting different people.* The themes that were covered broadened the students' mindsets and expanded their ideas about learning. The students found the interactive learning journal an excellent tool for examining their professional growth. Processing and working on professional growth supported them in finding their bearings at work and in life in general. As a significant aspect of growth, the students said they no longer placed such high demands on themselves as before.

The teacher's role

Guiding the process of professional growth means that the teacher makes the journey with the students. It is important that the teacher has a positive attitude not only towards the students but also towards the issues to be covered in the guidance process. At the same time, the teacher goes through his or her own process of professional growth. A positive attitude helps, and it catches on with others. It makes studying easier.

The students emphasised the teacher's commitment to the group. The teacher as a person (according to the students, the teacher's attitude) exerted a great deal of influence on them and help them clarify their thoughts about the issues to be covered.

The teacher's tasks include supporting students through difficult stages of study. Many student teachers mentioned that they would not have graduated on time without the teacher's support. Support and encouragement should be given both individually and to the whole group together. Patience and acceptance are highlighted in the teacher's behaviour. The teacher provides an excellent model at setting limits and giving freedom. The teacher also provides a model for caring about the students.

What the students find significant in the teacher's actions is that the teacher helps them believe in each student's possibility to become a good teacher, should they wish to do so. Professional growth has taken place, as the studies no longer just involve collecting attainments.

To guide the process of professional growth, the teacher needs to prepare carefully and focus on the students' processes during the training.

References

Forssell, C. (2012). *Huipulle! Henkinen valmentautuminen urheilussa*. Helsinki: Tietosanoma Oy.

Isokorpi, T. (2003). *Tunneälytaitojen ja yhteisöllisyyden oppiminen reflektoinnin ja ryhmäprosessin avulla*. Hamk/Aktk publications 1.

Isokorpi, T. (2004). *Tunneoppia – parempaan vuorovaikutukseen*. Jyväskylä: PS-kustannus.

Isokorpi, T. (2009). Aikuisopiskelijan ohjaajan jaksaminen ja voimaantuminen. In Lätti, M. & Putkuri, P. (eds.) *Löytöretki aikuisohjauksen maailmaan – kokemuksia ja käytänteitä ammattikorkeakoulusta*. Joensuu: Publications of the North Karelia University of Applied Sciences B 18, 36–44.

Isokorpi, T. & Kokko P. & Hämäläinen, K. (2009). Miksi tarvitsemme ammatillisen kasvun kokoavan opintojakson? In Lätti, M. & Putkuri, P. (eds.) *Löytöretki aikuisohjauksen maailmaan – kokemuksia ja käytänteitä ammattikorkeakoulusta*. Joensuu: Publications of the North Karelia University of Applied Sciences B 18, 73–80.

Järvilehto, S. & Kiiski, R. (2009). *Oman hyvinvoinnin lähteillä. Ohjaajan käsikirja*. Helsinki: The Rehabilitation Foundation.

Kalliopuska, M. & Nykänen, H. & Miettinen, P. (1996). *Voittoon, huipulle!* Psykologiatutkimus Mirja Kalliopuska 1996.

Mäkirintala, E. (2011). Feeling Better, Performing Better? Holistically-Oriented Top Performance and Well-Being (HOPE): Performance Enhancement and Its Perceived Impacts on Musicians. University of Helsinki. Faculty of Behavioural Sciences. Department of Applied Sciences of Education. Research Report 192.

Nokelainen, P. (2010). Mistä on ammatilliset huippuosaajat tehty? *Ammattikasvatuksen aikakauskirja* 12 (2), 4–12.

Nuutinen, U. (2009). Miten ammatillisen kasvun ohjaus rakentuu osaksi opetussuunnitelmaa? In Lätti, M. & Putkuri, P. (eds.) *Löytöretki aikuisohjauksen maailmaan – kokemuksia ja käytänteitä ammattikorkeakoulusta*. Joensuu: Publications of the North Karelia University of Applied Sciences B 18, 81–88.

Rauhala, I. (2011). *Uskalla! Nainen työelämässä*. Helsinki: WSOY.

Rose, J. & Perski, A. (2010). *Ylitunnollisuus. Eroon suorittamisen pakosta*. Helsinki: Minerva Kustannus Oy.

Tan, C.-M. (2012). *Mietiskellen menestykseen. Sisäisen etsinnän hakutuloksia*. Helsinki: Basam Books Oy.

Master-Apprentice Training 2015, a case study

Markku Vengasaho

Introduction

The Worlds Skills competition takes place in different countries every second year. In August 2015, it was organised in São Paolo, Brazil. The Finnish team has traditionally covered more than 30 skills in different fields of vocational education and training. *Competitors for each skill are selected some ten months before the competition*. Before this happens, qualification rounds are organised for every skill. Responsibility for organising these rounds rests with the Skill Manager together with the strategic steering group for the skill. Each category proposes a candidate to the Skills Finland working committee, which makes the decisions on which competitors to select to represent Finland.

A young person's journey to the world championships is long. How can we organise a personal study path for an individual competitor that supports him or her when preparing for the competition? Who else could join in on the learning process that this journey represents? *Many different persons and stakeholders support the competitor in preparing for the competition*.

A personal coach or instructor, an educational institution, top vocational experts in different areas of the field, and possibly a workplace and other employer representatives are needed. These are the key stakeholders that support a competitor. Many interesting learning events take place in association with this process. *How can we find the best competitor in the confectionery sector in Finland who shows commitment and is a top expert in the field? How can preparation for the competition be turned into a learning process for a number of actors in the field as extensively as possible? How could the competitor be provided with strong support and a community on his or her way towards meeting the goal? How could this community also guide other young people towards becoming top experts, and perhaps encourage them to attend competitions in the future? How can we ensure that new workplace representatives and teachers will be committed to these activities? What benefits could different actors gain from all of this?* These are some of the questions that I reflected on with previous Skill Managers, experts and coaches before the Master-Apprentice Training started.

Previously, coaches and competitors had been left alone to prepare for the competition, which they felt was a problem. They lacked a wider group or community that would support them all the way from the selection of competitors to the competition. *A young person's journey to the WSC competition is a short one, less than a year, and this has been experienced as a difficulty. The actors also wished that new top experts could participate in the growth process together with the young competitor.* Traditionally, the competitor had been supported by the teacher's own close network together with the Skill Manager* and an Expert** while preparing for the competition. But how could we surround this process with enthusiastic, motivated and open learners? This sparked the idea of planning the Master-Apprentice Training 2015 model with previous Skill Managers and experts.

*A Skill Manager is responsible for the national development of the skill and coordinates the coaching. He or she plans the coaching of a competitor going to an international competition and the practice tasks together with an expert in the skill and the coach.

**An Expert is an international expert in the skill. Together with Experts from other countries, he or she prepares the competition tasks and assessment criteria and works as a judge for the relevant skill during the competition. The Chief Expert works as the lead judge, while the Deputy Chief Expert is the deputy lead judge for each skill.

The objective of the training was to involve students and teachers from different vocational institutions and business representatives in the confectionery sector in preparing for the competition. We wanted to use top experts from different competence areas of the confectionery sector as teachers with a guiding role in the training. Another objective was creating

a strong cooperation network between businesses, students and teachers in the sector. *The training represented a study path of top expertise for the students, and vocational further training for the entrepreneurs and teachers working in the sector.* The funding for the training was obtained from additional vocational funding and from the William and Ester Otsakorpi Foundation.

Applications

VET providers in the bakery and confectionery sector were informed of the training in November 2013. The training started in January 2014, which meant that the registration period was very short. The first training session attracted six teachers and six students as well as three representatives from different employers. The training was subsequently also marketed directly to teachers in the field, for example at the Rinkeli Grand Prix competition in Tornio, the Taitaja 2014 competition in Lahti and by e-mails addressed to the teachers.

Structure of the training

The structure of the training was based on the competition tasks for the confectionery skill in Worlds Skills 2015. The scope of the training was 16 credits in total, and it covered the following areas:

- bakery sector competitions
- techniques for working with sugar
- showpiece, sugar work
- techniques for working with chocolate
- pralines and confectionery decorations
- confectioner's desserts
- entremets, international dessert pastries
- miniature cakes
- developing competition activities and coaching

Instructors and the responsible teacher

The instructors were top experts in the confectionery sector in Finland: Master Confectioner Veli-Matti Ahvenharju, Chef Olli Kuokkanen, Chef Jarmo Laitinen, Master Confectioner Aini Lattunen, Master Confectioner Toni Rantala and Baker-Confectioner Pia Penttilä. *Almost all of the instructors had much experience with international competitions and extensive work experience as confectionery sector entrepreneurs*. One of the instructors, who was not an entrepreneur, worked at supervisory tasks in a confectionery sector company. *Strong skills, education and training in the field, work experience and experience with participating in competitions have shaped them into masters of their field.* They are known in their field as significant operators and developers of the sector. The teachers who participated in the training contributed their competence, both professional and pedagogical, to the group.

The teacher responsible for the training was Senior Lecturer Markku Vengasaho from Saimaa Vocational College Sampo. The training was implemented as two-day contact teaching periods at the institutions of two of the participating teachers. Before the contact teaching periods, assignments associated with the theme of each contact teaching day were created for the students.

Pedagogical methods

An effort was made to set up the learning situations and environments of the contact teaching days to support

- social interaction situations
- communality
- a positive atmosphere
- openness
- joy of learning and a willingness to develop one's competence and professional sector in a wide sense.

The instructors acted as teachers and supervisors in their own areas of expertise. The teacher responsible for the training looked after the training arrangements, the instructors' contracts, drawing up the remote assignments, planning the programme for the training days and information activities. When necessary, he stepped in to supervise team work together

with the other teachers. He also discussed how to implement the training in advance with the instructors.

There were major disparities in the vocational skills levels of the participants. For example, some of the group members had never worked with sugar before, while others already had some experience. The module on confectioner's desserts comprised a theme that was almost completely new. The confectioners of today need versatile skills in the workplace, including competence related to desserts. The teachers should have capabilities for teaching this module, but many of them have gaps in their competence, as the area has not conventionally been part of the contents of food sector education and training.

All training days began with a theory part addressed to all participants. The instructor discussed the recipes for the products and the different phases of the manufacturing process. After this, *teams were put together that consisted of randomly selected teachers, students and business life representatives.* The teams tackled practical tasks. A learning experience that brought together so many group members with different backgrounds was quite out of the ordinary and often empowering. The training days created a positive mood that supported the participants in coping with their everyday lives. The teaching methods varied from modelling to cooperative learning. The members experienced the group as a community that, through doing things together and learning from top experts in the sector, also supported coping at work and activated them to develop their profession and teaching work. They felt able to throw themselves into the flow of learning. New things were learned by working and experimenting as a team. The participants experienced a joy of learning.

Students, the future top experts

The students who participated in the training were young people from different educational institutions who aimed to take part in competition activities. The training served as a framework for the coaching of WSC competitors. The students came from four different institutions. Their numbers varied in different programmes. The training enabled the students to

- deepen and expand their vocational competence
- establish contacts with the world of business
- create their own networks
- get to know fellow students and other learning environments and educational institutions
- complete units from the Further Qualification for Confectioners.

The training offered them a unique opportunity to learn in a new type of group and in different learning environments. The roles of the students and their teachers were blurred, as the teachers were also learners. A new type of dialogue could be established with each student when the teacher did not carry the usual responsibility of instructing the entire group. *The teacher and the student were peer learners. This was a new and positive experience. The teacher and the student were able to support each other later when trying out together the recipes used during the training sessions at their home institution.* This helped to verify what had been learned, and also deepened the learning process. On the other hand, the experience of doing things together may again have created something new, and this learning process has continued.

Getting to know their fellow students was a positive experience for the students. The training enabled them to establish new relationships with their fellow students, which were deepened by the shared learning sessions. Between the training days, the students kept in touch through social media. The contact teaching days offered the students an opportunity to compare their competences. This helped to strengthen the students' metacognitive skills and professional identity as experts.

The experience of having an opportunity to learn from masters in the field was also significant for the students. The masters served as examples of good professionals for the students. *The instructors' stories of how they became professionals further motivated and inspired the students.* During the contact teaching days, the students also had an opportunity to demonstrate their skills to the instructor and business life representatives. This is usually only possible at competitions or during periods of work or on-the-job learning in companies. The training thus served as an important link for creating different networks that have proved useful later, for example when entering the labour market. The instructors got to know future professionals and observe their level of competence. *If a student is motivated by the idea of continued involvement in competition activities, the role of expert instructors as partners will be significant later on.* They can be contacted for advice when needed, and they can lend their support to the students in different stages of their careers or during competition activities.

Taking time out to participate in the two-day learning events with the representatives from different stakeholders was something unique for the students. The group to which this learning opportunity was offered *was able to make contact with many stakeholders.* A student preparing to reach for the top. A student who is learning the basics and whose professional identity is only starting to catch on to the possibilities of the sector. An instructor who already is a top expert and who contributes experience and enthusiasm. Employer representatives who contribute everyday realism and describe customer needs. Teachers who bring with them the familiar and

safe everyday situation from the institution. Where else could a learning situation like this have been offered?

Employers' representatives

The employers' representatives participating in the training were entrepreneurs and employees in the sector. The training

- reinforced their vocational skills
- taught them things that they did not even know they lacked before the training
- gave them new product ideas that they could test in their businesses
- created new business opportunities
- activated a desire to develop themselves and their vocational field
- made it possible to create new social and cooperative networks
- made it possible to pause in the midst of the daily grind
- provided them with a community that acts as a support network for entrepreneurs.

For entrepreneurs, the training days were an opportunity to pause in the midst of the daily grind. *As one entrepreneur noted, it was "a new possibility for continued training, an unmissable opportunity for learning from the best."* For employees representatives, the training made it possible to do and learn something without the performance pressures of the workplace. They were able to throw themselves into the task and learn something new. Doing and experiencing things together awoke in them a desire to develop their skills and their vocational field. Working together with others during the training gave them better possibilities for cooperation as entrepreneurs. They received peer support and were able to talk about their common experiences as entrepreneurs, thus sharing their everyday concerns.

The business life representatives, teachers and students were able to intensify their cooperation. A common time and continuum was found for the meetings and activities. The business life representatives had the possibility for genuinely getting to know the educational institution environment and the students. It was easier for them to create social networks and see manifestations of the students' competence. *You could discuss changes in today's education and training and influence their implementation.* Cooperation between a workplace and an educational institution usually empha-

sises on-the-job learning where a student or a teacher comes to a company to learn. The entrepreneur cannot escape the requirements of his or her work environment. The teacher and the student tend to have the role of visitors and learners in this environment. What does the school or educational institution offer to employer representatives in turn? How does the educational institution take into consideration the continuous pressures and requirements of business life without allowing the dialogue between them to suffer? *Shared training sessions were places where we could strengthen our partnership on the basis of the idea that "we need each other".*

The times when an entrepreneur and an employee representative could take part in training together were peak moments. This was a time when they could have discussions and brainstorm new products for the company, surrounded by the rest of the training group. Educational institutions are neutral places for mutual encounters. They have their own history, which brings back memories of the participants' own learning experiences. Bearing this in mind, an educational institution may serve as an environment for relaxing and sharing learning experiences from years gone by. Relating these experiences is a shared joy. *The entrepreneurs and employees are appreciated and seen in a different light in the training and educational institution environment.* Their competence is appreciated, and interest is shown in it. In their work environment, the entrepreneurs and the employee representatives are the party that gives and provides services, usually receiving money in return. In the environment of an educational institution, competence development and relationships involving social interaction are stressed. Actors from different fields are present. The learning event accentuates values that are different from those in the participants' own everyday operating environment. For business life representatives, a learning experience in the environment of an educational institution may be empowering, renewing and activating, and it may help them maintain their ability to work. A positive dependence with a group is created, which motivates people to learn more.

Teachers' experiences with the training

The experiences of the teachers who participated in the training were positive. They found that

- their vocational skills were built up and strengthened
- they could apply the learning materials used in the training in their own work
- the cooperation network between the group members and instructors was extended and reinforced

- their interaction with fellow teachers intensified
- the training activated the teachers in developing their fields of education in their own work environments and at the national level
- their metacognitive skills were improved
- the group served as a community with which they developed a positive dependence.

The contents of continuing education offered to teachers are usually associated with educational science or pedagogical competence. They currently feel a need to develop and update their substance-related professional competence. The labour market changes quickly, and it sets diverse vocational skills requirements for employees. It is thus vital that teachers can develop their vocational competence. Currently, this need is met by the periods of time they spend in companies in their vocational fields. *The Master-Apprentice Training represented vocational further education and training for teachers*. The training consisted of practical work, and it developed and strengthened their substance competence, allowing it to reach the levels currently required for the profession. *This type of extensive training is absent in the offer of vocational education and training in Finland.* Vocational further training is usually offered as individual sessions. The Master-Apprentice Training comprised almost two years of vocational further training that extensively addressed the different competence areas in the confectionery sector. The training period created a continuum of learning and formed a common goal for the participants and the desire to improve as an expert.

The training produced new ideas for the manufacturing of products and techniques. The participants also familiarised themselves with and learned to use ingredients in new ways. In general, the learning materials provided by the top experts in the sector during the training could be directly used or applied as the teacher's own learning materials in his or her work. The material was also complemented with photos and by writing down the recipes and methods after the training days. In addition, different group members could describe the product experiments made after the contact days and bring them up for the group to discuss. This also allowed the others to learn from the idea. *A positive dependence developed between the group members*. The learning materials obtained during the training were a key benefit for the teachers, who could use them in their own work.

The training days had a full programme, and for this reason the assessments of the products in some cases remained superficial. When one of the participants wanted to try a recipe again later, the product was not necessarily successful. *We noticed how assessing the products at the end of the training days was an important part of learning.* Particular attention in

the feedback discussions during the training days should be focused on the different stages of the manufacturing processes and the ingredient quantities given in the recipes.

The teachers found that the learning accumulated during the training manifested itself in terms of their students' success in competitions in the field, among other things. The recipes and instructions for products lent themselves for use as the basis for planning competition tasks in the field. The training also activated the teachers to guide students towards vocational skills competitions. These included the Rinkeli Grand Prix event organised by the Finnish Bakery Federation, the Taitaja competition and the WSC qualifying rounds. Participation in competitions has brought recognition for the field of study and serves as a tool for development.

The greatest obstacle to participation in the training was obtaining the consent of the participant's home institution. This was often justified by economic reasons, even if the teachers' working hours were taken into account in the arrangements of the training. The sessions took place on Friday afternoons and Saturdays, minimising the necessity for the teachers to be absent from their work. The price of the training was found to be reasonable considering the content.

As a learning event, the training was different from the continuing training usually organised for teachers. During the training sessions, the teachers were cast in the role of learners, an experience that broadened their horizons. In their everyday work, teachers usually are the experts, while the students are learners. This experience gave teachers new insights into the learning process. Consequently, the training also built up their pedagogical competence.

Conclusion

The Master-Apprentice Training attracted much positive attention. The possibility it provided for learning by doing things together with top experts, students, business life representatives and teachers played a key role. *The participants felt that the possibility for doing this over a longer period had not previously existed in the confectionery sector.* The themes of the training days were of general interest, and the instructors' competence was excellent. The participants felt that they learned new things and gained inspiration, seeing their field in a new light. The training attracted media visibility in the locations where the training days took place. This also gave the training national publicity and influenced the recognisability of the field. Visiting different educational institutions was additionally an opportunity to learn something, big or small, about new learning environments. We could see what can be changed in our own learning environments im-

mediately, and which aspects cannot be changed overnight. We were able to visualise the future of our learning environments.

Developing the education and training and finding new operating practices was a joyful experience. It inspired us and created a positive mood for our work. The motto "Together We Are Stronger" was tried and tested within the context of this training. As a supervisor, I was worried about many issues in advance. However, these were resolved almost as if by themselves. I did not know all the instructors before the training, and the responsibility for finding the best possible expert for each training session often weighed on my mind. How could I guarantee that the participants would receive high-quality training? Organising the training required flexibility and an ability to cooperate on the part of my own work community. The vision and values of my educational institution supported the organisation of the training. Renewal is one of the values of Saimaa Vocational College Sampo that was also realised during this training.

In the future, it will not be possible to organise the training in a similar manner, as the funding criteria for education and training have changed. We must now find new ways and new partners to make the training happen. This training model continues to be needed, albeit in a new format. Our field of study is small in Finland, and when taking workplace needs into account, *there will be a need to extend our competence across the boundaries of vocational fields.* The fields closest to the confectionery sector include other catering sector professionals, for example cooks and waiters. Currently, the skills of a confectioner are needed at restaurants or in professional kitchens. Cooperation between cooks, waiters and professional kitchen staff is thus crucial. In the future, education and training in the confectionery sector should be expanded with competence related to desserts, which it currently lacks. We are able to make individual products, but how do we put them together as a stunning and scrumptious whole? These are skills that we lack, and in the context of desserts, for example the making of ice creams is part of today's café culture. This would be one key area in the instruction of confectioners in the future.

Working and acting openly for a common goal is a motivating learning experience. The members of the group were experts in different areas. The top experts, or specialists, mastered the making of products and using their ingredients. The students contributed a young person's perspective and questions to the activities. The teachers encouraged and guided the different group members, perhaps even in ways unbeknownst to themselves. The workplace representatives contributed everyday realism and customer needs. The interaction between all these groups produced a positive cycle that meant you just could not stay away.

As a consequence:

- Young people have achieved success and become enthusiastic about their field. They have improved their skills, approaching top performances. Various members of the group may also support them later on.

- One entrepreneur has set up a Facebook group for the participants in which they can share experiences and continue social interaction. The entrepreneurs have expanded their product ranges.

- The recipes written down during the training days can be modified, and each participant can use them as they wish.

- The photos taken of the different products and manufacturing processes during the training are shared between the group members.

- The teachers can visualise how to develop such aspects as part of their own learning environments and teaching.

A communal group was created whose members are enthusiastic and willing to develop their field and their vocational skills. The Master-Apprentice Training meant immersing yourself in a new learning environment. When I was assigned the task of the Skill Manager for confectionery products, I needed to think about how I would do it. I knew it would offer plenty of possibilities. The task was a responsible and interesting one, and it allowed me to try out something new. I expected a lot from it, but gained even more.

Part 2:

Competitions as a tool for developing top expertise

The Philosophy behind Vocational Skills

Seppo Helakorpi

Competitions Background

Throughout its history, Finland's educational policy has centred on a philosophy of equality. Finns have always considered it important for all citizens to have the opportunity to receive an education, regardless of their place of residence, wealth, ethnic origin or sex. The situation that has been thus attained in Finland is by no means standard in all countries. While equality has been a shared objective in the education sector, competition has not. Now and again, debate arises on the nature of competition and the opportunities for competition in education. References are made to a neoliberal view of education, which focuses on cost-effectiveness and efficiency. Some people are critical of education being defined in financial terms. The debate is fuelled by ideas regarding the application of quality assurance concepts to education. Some parts of the debate have taken on farcical qualities, when some writers have not familiarised themselves sufficiently with the basic concepts of the quality philosophy. It has been interesting to see how Finland's success in PISA surveys has been accepted by many as sufficient proof of a well-functioning educational system. For some reason,

the Finnish matriculation examination system and its competitive scenario are not considered inappropriate by these same people.

Competition in education arises at the individual student's level, when the performance of students is compared for instance in specific subjects. Competition can also be present at group level; we are all familiar with inter-school sporting events, for instance. Schools can compete in performance, too, for example in terms of the success of their graduating students in matriculation examinations.

Plenty of statistical data is gathered these days, making comparisons easy. In Finland we have been wary of competition, due to a fear of it corroding the foundations of equality in education. Some are horrified by the idea of compiling rankings of school performance. Others consider competing to be a natural human activity. Now these various competitions have attained official status (e.g. PISA survey and vocational skills competitions), it is a good time to consider the purpose, nature and aim – i.e. the basic philosophy – of competitions.

Competition versus Equality

More lies behind the running of competitions than man's natural competitive instinct. Particularly when speaking of competence, the globalising world economy forces businesses to compete in terms of products and services – i.e. in competence. Performing well in at least one area appears to be a condition for success. Most businesses have begun eliminating inessential activities from their operations and focusing on their core areas of competence. New alliances and partnerships are made. This has quietly turned competition into a communal sport. We have realised that people, like businesses, are all different, and that this diversity is a resource. We also speak of collective intelligence or expertise. How does this fit in with the equality doctrine? We should consider this pillar of our educational system – equality – in a bit more depth. It has sparked a debate regarding the duties of education and teaching: should we offer everyone education that aims for the same objectives, or should the same resources be applied to achieving individual objectives? The question is extensive and it involves a basic issue regarding educational equality. Should education and edification aim for:

- equal opportunities in the availability of education,
- equal opportunities in the implementation of education,

or

- equal opportunities in the outcomes of education?

The principle of access to education entails that every citizen must have the same opportunities for accessing education, regardless of their place of residence, wealth or any other factor. The principle of equality in educational implementation implies that everyone must receive the same kind of and similarly resourced education. The principle of equality in educational outcomes means that similar results should be achieved for instance by providing different kinds of teaching. At one extreme there is the thought that "everyone can learn everything", as long as teaching is sufficiently differentiated. The problems of this can be illustrated using the following figure.

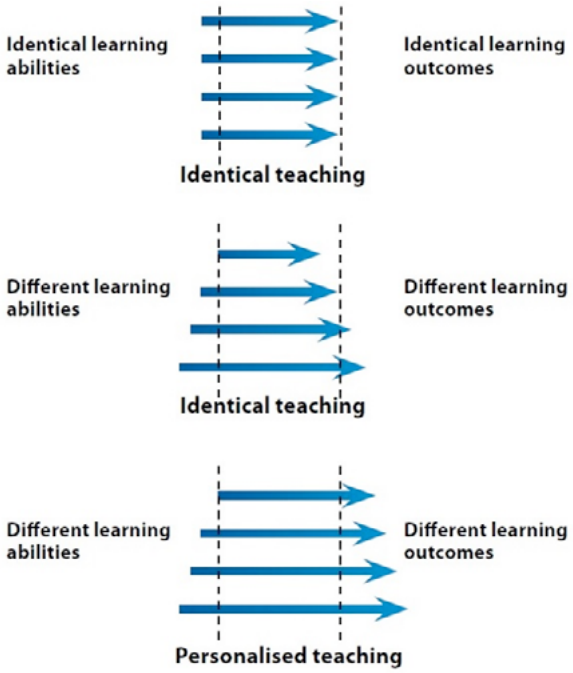

Figure 4. Problems in educational equality.

The first sector represents a kind of utopia. Because people have different learning abilities and respond differently to the same teaching, it is impossible to reach the same outcomes even with the same education for all. The second scenario represents a fairly ordinary situation, where different learners achieve different outcomes as a result of cohesively applied teaching. Some do not meet the set objectives and others exceed them. The third sector represents personalised teaching and study. In it, different learners are offered study paths based on their personal learning abilities, which means that everyone can attain the basic objectives. On the basis of their different learning outcomes, students can then find different positions in our postmodern society. Traditional Finnish "one-track education" pro-

duces similar qualifications and competence, when the labour market is actually in need of workers with different kinds of competence. Equal opportunities could be fulfilled so that each student receives access to education that corresponds to his or her abilities and needs, and eventually finds employment in a position where his or her competence is valued.

Education is a social service, whose objectives are set in legislation. However, it is subject to limited financial resources coming from taxpayers' money, which means that it is not released from obligations regarding efficiency and cost-effectiveness. This has given rise to discussions on educational quality. One of the cornerstones of the European Union's education policy is the Bologna Declaration, whose aim is to harmonise educational practices within the Union. It has led to reflection on the objectives of vocational education, and on the qualifications and competences of various professions. Finland is committed to the EU's programmes. In conjunction with the Copenhagen Process, a Common Quality Assurance Framework (CQAF) was built for supporting quality assurance in vocational education. It is based on the EFQM model. The framework also has its roots in the principle of continuous improvement known as the Deming Quality Cycle (plan, do, check, act). The Finnish Ministry of Education approved a proposal for quality management in vocational education made by the National Board of Education for the purpose of encouraging organisers of vocational education to always improve the quality of their operations towards excellence. The model's elements are planning, implementation, evaluation and feedback/change processes, and each has defined quality criteria. Quality assurance is about evaluating and improving processes. Applied to a school, it does not mean evaluating individual students but assessing and developing the whole school's teaching and learning processes. The Maastricht Declaration drew attention to improvements in cost-efficiency, pupils in danger of marginalisation, individual and flexible study paths, predictive education, learning methods and the competence of teachers and trainers. The EU summit in Maastricht (2004) reached an agreement on cooperation, with the aim of:

- modernising vocational education, in order to improve the competitiveness of the European economy

- offering all Europeans – whether they be young, old, employed, unemployed or vulnerable – the knowledge and skills they need to participate fully in our developing knowledge-intensive society, and creating more and better jobs.

The European Union's Helsinki Communiqué (2006) stresses the fact that education policy-makers must promote high level vocational education and make it possible for those already in employment to update their competence. The objective must be to involve all young people in either vocational or higher education. The knowledge and skills they achieve in their stud-

ies must be an advantage both in their work and in their future lives. The communiqué also emphasises the need for flexible study paths, allowing students to move on to different levels of education – particularly from vocational into higher education. Vocational education should be equitable and effective. This means that those whose circumstances are unfavourable in terms of education and those who risk marginalisation must be taken into particular account. It also means that vocational education must offer not only basic professional skills but also top-level expertise, in order to prevent lack of competence or shortages in skilled employees, and in order to maintain innovation and growth in our information society.

Personalised Education and Competition Activities

A striving for flexibility, individualism, specialism and uniqueness has appeared in education, both at individual and at social level, which in practice has led to the personalisation of education. In today's society we can further our own skills and needs in ways that lie outside organised education. The competence needed in life and at work can be developed for instance through pastimes, the constantly diversifying media, webs and networks. Enriching communities are abundant and it appears that young people in particular are adopting their ways. The great challenge for education is how to identify and recognise skills and knowledge acquired outside of the educational system. The ultimate purpose of attending school is by no means to achieve certain grades but to acquire competence. Similarly the objective of educational institutions is not to fulfil the (education) system per se, but rather to conduct the operations that serve individuals and the community in the best possible ways.

How can we know whether we are good as individuals or whether we fulfil people's needs as an organisation? At the organisational level the answer to this question is the quality philosophy, and its ideas of continuous evaluation and development (the "learning organisation"). It is no coincidence that research is now under way into the collective and communal nature of work teams and the collective and shared expertise that is linked to these teams. A fundamental part of competence lies "hidden" in the form of tacit knowledge within work communities' operating cultures. Competence is not just a question at the individual level; particularly in our networked society it is a communal factor. Quality assurance measures, with their related evaluation and development processes, are in place to develop a community's activities. Quality work is linked to the concept of the best practices. In each field and for each case there are practices that work most effectively and produce the best results. It is interesting to find out how others operate – particularly how successful organisations achieve good results. It is this idea that has led to the foundations of quality competitions. Even in Finland, quality competitions have been going on for decades

(the Finnish Quality Award has been given out since 1976). Now they also involve public service organisations. Although it is interesting to know what organisation is the best in each field in a given year, the ultimate purpose of quality competitions lies in good practices, operational quality and its development. The Finnish National Board of Education and the Ministry of Education have set up an award for quality in education, for which educational institutions compete annually. Quality and its development have become fundamental issues at all levels of schooling. The question here is not of competing against other institutions but together with them. As I mentioned previously, competing at the individual level has been found to be problematic in education. In the "old school", students were given reports where their own grade average was compared to the average of the whole class. At the time of an elementary school reform in Finland, this comparative and stigmatising practice was given up, and discourse turned to target-based evaluation; in other words, looking at how well students have achieved the objectives set for their studies. This has been the basic principle behind evaluation even in vocational education to this day. Today's society is sometimes aptly called the competence society.

We now want to know what competence is needed in specific tasks, and how it can be obtained. The concept of competence relates to a strong shift from knowledge-based targets to skill-based targets. The Finnish education system has been criticised for being too knowledge-oriented and placing excessive weight on facts. An example is the matriculation examination. The basic models followed in Finnish education have been equitable teaching and shared objectives for all (cf. equality principle above). However, vocational education in particular has initiated a strong development towards competence-based orientation, where the focus is on what students already know, what other competence they should acquire, and how best to acquire it. Behind this philosophy lie new theories on learning and knowledge, including the (socio-)constructivist concept of learning, trialogic (context-bound) learning, communal knowledge construction and tacit knowledge. Today's catchwords are identifying and recognising competence. Demonstration-based studies have been under development for years. The "million-dollar question" now is, How can competence or a specific skill be demonstrated and assessed? The on-the-job learning that takes place at work is tied to the context of the workplace in question. We can think about whether that is sufficient "proof" of broader competence. One of the central aims of vocational education is for students to achieve the best possible employment after graduation. Processes of on-the-job learning implemented in close collaboration with employers have been found to increase the aptness of education in terms of the competence requirements of the workplace. For individuals, education is also about how flexible it can be in order to offer the education required by the student's needs and inclinations, and to support the student's personal growth. There has been a move to personalise and individualise education, as a shift away from the "one-track" tradition.

This kind of education is based on the following ideas regarding the learning and teaching of professional skills, which is based on talent studies:

Figure 5. From ability to competence

Skills and workmanship are linked to competence potential and personal characteristics. Talent consists of various individual areas, which develop into personal inclinations. If the environment is favourable, motivating and encouraging, these inclinations develop into abilities, which are reflected in skilled actions – for instance as workmanship. Certain personal characteristics represent specific capacities, which can turn into abilities thanks to the effects of the environment and personal growth. This gives rise to motivation for certain actions. With regard to the idea of the learning organisation described above, the operations of schools should be developed in such a way that they can form an encouraging and motivating community that supports and enriches personal growth. The personal inclinations of students should be developed in order to generate the competence needed in their chosen profession. We must accept that not all students have to master all of the tasks or jobs related to the field in question. A team-based, networked community consists of diverse people and different yet complementary competences.

Thus we arrive at two central and essential questions or challenges for vocational education: 1) to identify and recognise the students' personal characteristics as unique competence potential; and 2) to build study and education processes that support and motivate learning and professional growth based on personal inclinations. The idea of building and supporting a specific professional identity has taken a backseat in vocational education. Students see their chosen profession as a part of their own future, which grows to be an element in their overall identity.

Previously, professional pride was particularly emphasised as a part of professionalism; the experience and subsequent satisfaction of mastering one's job. Proper professional competence and professional pride do involve completing work well. When working in a hurry and under financial pressures, we are tempted to act against our professional ethics – for instance by attaching plastic flooring to wet concrete, or neglecting to dry insulating materials, or installing sockets carelessly in a crooked position. It is specifically the duty of the school to draw attention to these issues. The actual workplace used for an internship or traineeship period can give students an unrealistic picture of proper skills and professional pride. At school, students must learn about professional ethics, professional identity and the good traditions of the trade. Proper professionalism also involves continuous development of oneself and one's competence – even by surpassing of one's own boundaries. Internal professional pride and "total" professional competence contribute internal satisfaction and the motivation for completing daily tasks. Optimally, a worker can experience a state of "flow", in which an interesting and motivating job is found to be energising and empowering. A good job gives enough independence, allowing the worker to decide on actions, to develop the work and to participate in an interesting team. In network-based activities, collective competence has particular significance as the persons do not necessarily even meet each other. The partners can solve common problems on the basis of common concepts and shared expertise. Competence in an organisation that is active in networks does not exclusively consist of the personal competence of individuals, as organisational and network-related competence is also needed:

Figure 6. Competence in an organisation active in networks

Recognising these competence needs, as well as competence management and leadership, are preconditions for the success of a networking organisation. In order for competence needs and competences to meet, the correct targeting of key personnel's tasks in the organisation and network are needed in competence management and leadership. Looking after stakeholder relationships is an essential area of networking. A network contains many types of knowledge and competence. The new competence requirements set by networks apply to education providers (governance and leadership), network partners, teachers and students. Education providers must in some areas master completely new expertise.

What competence is needed in the workplace? This has always been the key question of vocational education and training and vocational skills development. Making reference to the new concepts of knowledge and learning, an assessment of work and competence are based on the following basic presumptions:

- Competence is both individual and communal
- Competence is created as a result of both formal education and informal experiences and development
- Competence is not limited to knowledge but comprises a more extensive mastery of activities where social interaction (team work) is emphasised more than before
- Competence is flexibility, the ability to tolerate uncertainty and a willingness to change
- Competence is continuous evaluation and development, both by means of self-assessment and external evaluation
- Competence is context related, and its assessment is value-based and connected to the operating culture

The figure below describes the competence and skills needed in learning and developing organisations.

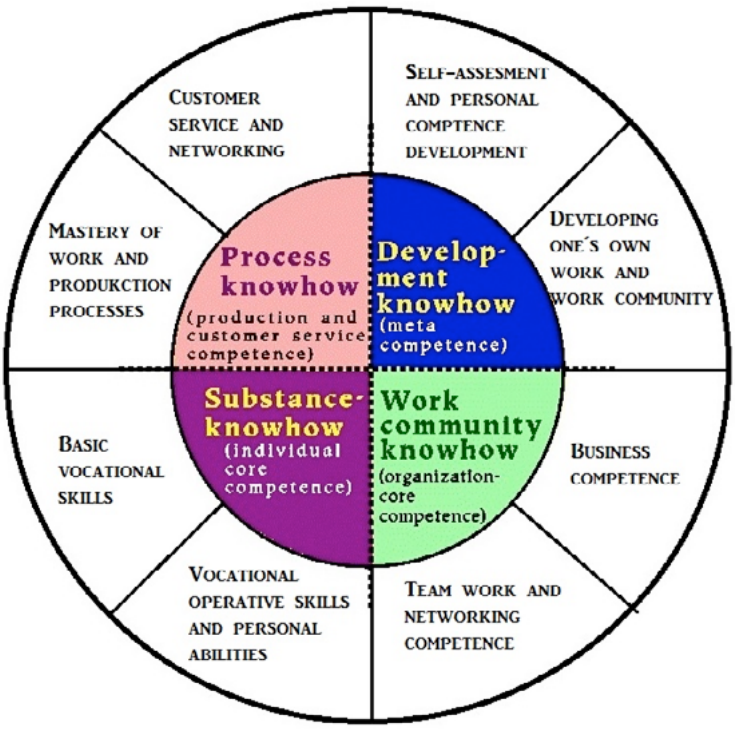

Figure 7. Competence and skills of professional expert.

On this basis, we can devise indicators for gauging competence and for personal development programmes – in other words, also for Skills competitions! Growth into expertise is a development process where a professional reflects on his or her competence in relation to the work organisation, underpinning knowledge (scientific background) as well as customers and cooperation networks. The expert, and every professional, has increasingly close ties with different factors in the operating context: people, issues and an organisation's networks. Value-based judgement and reflecting on the meanings of knowledge are also relevant.

The primary purpose of vocational skills competitions is to promote the learning of professional skills and the dissemination of good practices. The competition itself is secondary. There are many levels of skills competitions: in Finland we have Taitaja-competitions on a regional and national

level, EuroSkills at the European level and WorldSkills at the global level. These events have made professional competence and workmanship evident to all. They have sparked wide-ranging efforts to develop and research the concepts of competence and professional skills. By touring different countries and regions, the competitions reach diverse people – particularly young people about to choose their careers, who are given concrete demonstrations of the diversity of fields and the nature of different tasks. Of course the competitive situation is not a genuine work situation, but it does give an indication of the nature of professions, their tasks and their competence requirements. Work skills competitions have been criticised for being a kind of sterile demonstration, where skills are evaluated in a laboratory-like environment. A competition does not correspond to genuine work situations; it lacks for instance the social context – the work community, where teamwork and interaction (mutual learning, competence sharing) often play a very significant role. For this reason we must develop competition tasks to more closely resemble genuine work environments, with their customer service, teamwork and development aspects. There have also been complaints regarding the fact that identical tasks do not take into account cultural differences between countries. Different ways of completing the same task give rise to contemplation regarding the appropriateness of one's own methods of working.

Although success in a skills competition is positive and an important culmination and springboard in the careers of competitors, the purpose of competitions is primarily to raise awareness of professionalism and vocational education. It seems clear that by wandering through an event watching people only a few years older making highly skilled creations and producing genuine expert work, young people facing a career choice can receive a useful information pack and understanding of the professions that interest them. Many of their prejudices or preconceptions may change. In today's society, professions and their competence requirements change swiftly. It is very likely to be interesting for many young people to witness the equipment and environments with which professionals work. Therefore it is no coincidence that esteem for vocational education has risen in Finland to the point that past few years, there were more applicants to secondary vocational education than to academic upper secondary school. In addition, educational legislation has been reformed so that it is possible to progress from vocational education to higher education degrees, so interest in vocational routes should come as no surprise. Vocational skills competitions have played a role in these changes. They have also inspired the educational system to ponder on competence, to improve the teaching and learning of skills, and to provide a basis for coaching in expertise and proficiency.

See more: https://sites.google.com/site/professionalandvocationaleduc/

Utilising competition activities at the level of the individual and the organisation

Markku Aunola

In Finnish vocational skills competitions, pursuing good placements does not play a key role either at the national or the international level. Instead, central objectives set for these activities include:

1. Developing the quality of vocational education and training by improving workplace relevance, transparency of the activities and competence at all levels

2. Improving the attractiveness and recognisability of vocational education and training, especially among young people planning upper secondary level studies

3. Offering possibilities for development and networking for students and their instructors nationally and internationally.

The aforementioned objectives are also well suited to the key goals of vocational education and training at large, and not just competition activities. For young people, continuous self-development, learning-to-learn skills and growing into a productive member of society can be added to the goals of vocational education and training. These objectives, too, can be linked to competition activities. In a rapidly changing world, we need an ability for adjusting flexibly to new situations; the school cannot prepare students for every eventuality. Well-organised competition activities and tasks allow students to improve their problem-solving skills and creativity.

In Finland, competition activities are linked to the operation of educational institutions, as the role of education providers in the organisation of national competitions and the sending of competitors to international events demonstrate. Education providers organise Taitaja competitions either on their own or together with other providers. The competitions have elemental links with teaching, and the students are involved in all stages of their organisation. The organisation of competitions offers many types of projects and authentic tasks for student groups that are related to such aspects as setting up the competition environments, logistics, marketing, guiding and providing services for the audience, etc. At best, these implementations improve the students' competence significantly more extensively and deeply than ordinary institutional instruction. In addition, the rewards include immediate and authentic feedback from other competition organisers, the participants and the audience.

The high profile and media visibility of the competitions add their own challenges to these activities and encourage education providers, the staff and students alike to aim for optimal performances. The participation of companies and workplace representatives in the competition activities as partners is a significant incentive. In recent years, the number of partners of this type supporting the local organisers of Taitaja competitions has, on average, been around 500. This is also an indication of the interest that companies have in the competitions. Rather than being limited to organising competitions, the cooperation has a wider dimension.

The attractiveness of vocational education and training has been at a good level in Finland, and vocational education has been gaining ground as an alternative to general upper secondary school. On the other hand, a small decline has been observed in recent years. As a showcase for a wide range of different professions, the competitions have been harnessed to the cause of promoting the attractiveness of VET. The competitive nature of the event also interests young people. Visitors to the competitions include school classes that are about to finish basic education, and grade 9 pupils can take part in the so-called Taitaja 9 event. There are major differences between the attractiveness of different fields, and the competitions thus provide an opportunity to highlight those sectors that are less attractive, though the need for labour in them is great. The Taitaja events thus are highly impor-

tant from the perspective of marketing VET. Companies have also come to understand this.

In recent years, gameful learning has emerged as a theme of pedagogical development along with various computer and simulation programmes. Young people find conventional teaching methods uninteresting, and everyone has access to plenty of other, more versatile, ways of obtaining information than the instruction provided by a teacher. Gameful learning combines many key elements of learning: problem-solving, multiple channels and a back story. Gaming always has an element of competition, if not with others, at least with yourself. A topical example of the power of gaming is the popularity of Pokemon Go.

Schools and educational institutions often use very conventional teaching methods. In vocational education and training, a typical method is a theoretical discussion followed by practical exercises. Dividing an entity to be learned into parts or into subjects is also usual. From the student's perspective, this approach is not the most motivating, or even the most efficient, way of developing vocational competence. We no longer live in a world where knowledge and competence are controlled by a limited group of people. They are accessible to everyone, and competence is also no longer seen from the perspectives of individual disciplines (subjects). The challenge has to do with imparting the requisite competence and skills to the students. Educational institutions and teachers thus need to develop the learning environments and methods to meet the future needs of both the students and workplaces. Key elements in methodological development are genuine learning environments, togetherness in learning, problem-solving and the utilisation of digital applications and tools. Competitions also provide the possibility for and an operational environment for pedagogical development.

In Finland, competitions are referred to in the National Core Curriculum, which indicates a desire to mainstream these activities in the everyday operations of educational institutions. This also means that an effort is made to involve all students in the competition activities, rather than only the best ones. In this respect, there still is scope for improvement, but good examples already exist of bringing elements of competition into the work of the schools. For many students, competing, even just playfully, provides motivation for learning. We should remember that competitions have long traditions in many vocational fields. On the other hand, competition is present in everyday work, with customer service and sales work, restaurant services or beauty care as examples. Companies are always competing, and ultimately it is the employees of a company who are crucial for its success.

The importance of the media should not be underestimated: competitions are highly popular programme formats, for example on TV, and this trend has continued for a long time. Not all the examples found in the media are

necessarily positive, but we should select the most positive means and use them to support competence development. An important viewpoint to competing is specifying whether the competition should take place between individuals, groups or entire organisations. The world of work today relies increasingly on team work and networking, and this should also be visible in competition activities and in the ways competence is developed at educational institutions. EuroSkills competitions feature increasing numbers of events for pairs and teams, and this is a positive trend. Schools should also favour communal competitions rather than competition between individuals. Communal competition makes it possible to achieve objectives other than just ranking the students in a hierarchical order; should this be necessary, there are other means besides competitions.

A key point of departure for vocational education and training is workplace relevance, which cannot be achieved without good quality in education. Quality is associated with transparency and comparability, and competition activities in their different forms display both. The possibility of making comparisons plays a key role for both organisations and individuals. In international competitions, aspects related to quality are highlighted even more.

The teachers' competence plays a key role in terms of education quality. First, the teacher must be in step with the times, i.e. with what is happening in the labour market now and in the future. Teachers must also be wise about the best ways to support the students in developing the required competence, and above all, they should be able to instil in the students enthusiasm for continuously developing their competence. Improving the competence and promoting the networking of the teaching staff through competition activities is a key objective shared by both Skills Finland and education providers. Live interaction with employers is required in order to keep the competence of the teaching staff in vocational education and training up to date. The periods of time teachers spend in an enterprise can be combined with, for example, coaching competitors in the workplaces, and training could be provided more extensively in business environments. At best, everyone learns in these situations: not only the student and the teacher, but also the company, which has an opportunity to learn when outside actors look at its processes with fresh eyes.

Many educational institutions have set targets for competitions activities, for example in their balanced score cards (BSCs). It appears that broad-based participation is more frequently set as a target than winning medals. This shows that education providers appreciate competition activities as a tool for developing the institution's operations. The participation of teaching staff and students in competitions is experienced as a factor that improves quality. Some education providers also aim for quality improvement through organising competitions.

Competition in its different forms can offer a great deal to the participating students. First, the students are given an exceptional opportunity to test and demonstrate their skills. They can compare their performances with those of others and learn from others. In a competition, students surely also learn a lot about themselves; their self-image comes into sharper focus, and at best, they also gain self-confidence. It is hardly an accident that many of those students who were successful in Finnish vocational skills competitions have become entrepreneurs. Being the object of attention is a major issue for all competitions. Everyone can, for their part, reflect on the courage it takes to display your skills to a large audience. The aforementioned aspects speak to the fact that competition activities also support the educational targets set for vocational education and training and the students' professional growth.

The question of how well competition activities can be integrated into the everyday work of educational institutions has arisen as a key one in Finnish vocational skills competitions. Achieving this requires wider participation in the activities by the teaching staff. What tends to happen is that only those who already have had positive experiences with competition activities become involved. The spreading of existing good practices is a larger problem and connected to the traditional operating culture. However, this era of networking also challenges vocational education and training to change the operating culture. The operating culture changes as we receive influences from the outside and together start doing things in new ways. Ultimately, the change will be driven by new generations of students who will not be motivated by the traditional operating methods of schools.

A vocational skills competitor as a future workplace expert

Pirjo Tuominen

A vocational skills competitor as a future workplace expert

This article discusses the competence of young people who take part in vocational skills competitions and the ways in which such competence could be developed further in different learning environments. These young people are at the beginning of their careers, and they will be active in the labour market for a long time to come. Are vocational skills competition activities useful for developing young people's competence, and do competitions benefit their progress in their careers? If they do, what kind of competence do the competition activities instil in them?

The Finnish Association for the Development of Vocational Education and Training AMKE, which engages in workplace-oriented development of VET and vocational competence, notes in its publication focusing on the competences needed in the labour market of the future the following: "Young people and adults will need more diverse, extensive and flexible competence in the future. Particular attention should be paid to developing personal

learning-to-learn skills. The need to understand the world and the way it changes, an ability to see opportunities rather than threats, and skills in communicating with people who think and work differently will be highlighted in all professions." (AMKE publication.)

The Academy of Finland continues in the same vein: "Today, and especially in the future, ever greater value will be placed on metaskills such as enterprise, self-management and interaction skills, management of the big picture, creativity and critical thinking" (The Academy of Finland).

Changes in the workplaces are not only a challenge to employees; the working conditions and work environment are also factors that enable their creativeness and innovativeness as well as a team-based working method. Team work and networking will be clearly emphasised in the workplace. As an employee's individual responsibility increases, life management and workplace skills also emerge as important factors for coping at work (Alasoini, Järvensivu, Mäkitalo 2012).

These views, expressed by future researchers of the competence needed in the workplaces of the future, are not different from aspects that are already in focus when a young person is preparing for a vocational skills competition. With reference to the competence needed in the future, a young student getting ready for a skills competition, whom we will call a vocational top expertise in this article, has a number of those very properties. For example, they are capable of sustained work, they have good abilities for working in demanding conditions and good problem-solving skills, and they are sociable and persistent when preparing for the competition (Nokelainen, Korpelainen, Ruohotie 2009). The properties described above and the developing vocational skills give the student a good handle on vocational competence.

Nevertheless, no matter how many properties of a top expert they have, young people getting ready for a competition cannot succeed in their preparation alone. They are supported by a team that contains members from both the educational institution and the world of work. Together with the young people, the team members can make decisions about studies that will help to strengthen the students' competence. An on-the-job learning placement often offers possibilities for more versatile practice and more frequent repetitions than an institutional environment. Young people practising their vocational skills need to repeat the same task till exhaustion.

Numerous case studies carried out by Ericsson indicate that you need to practise for up to ten thousand hours to reach the top level. Ericsson continues that it is not only repetition and practice that make you a top expert, as rest and time for the brain to adapt to the benefits derived from practice are also needed (Gladwell 2013, 38–40). Preparation for a Taitaja competition does not require such numerous hours of practice as all this, but solid basic skills are important in vocational skills competitions for young people.

When young people are sure of their own basic competence, they will have the extra resources to focus on doing their best in the competition. In the holistic enhancement of a competitors' competence, preparation is systematically guided by self-assessment and instructive feedback. Well-balanced practice is thus revealed as a comprehensive work process where the practising of vocational skills alternates with the practising of generic skills, of which skills for lifelong learning are often considered the most important. In the example of young people who have participated in Taitaja competitions, lifelong learning and striving for self-development are displayed by the fact that they wish to take part again the following year, age limits permitting. The competition experience has been a holistically significant event that has improved the competence of young people, so it is no wonder they are keen to participate again. Some of those who have previously participated in vocational skills competitions act as coaches or workplace supervisors for the competitors, and some have even ended up as Experts in skills in international competitions.

Success in competitions and team work skills

For success in the workplace and in vocational skills competitions alike, not only vocational content but also good networking and interaction skills are required. The role that these factors play in success in vocational skills competitions and the end result of the competition task has been proven by research. According to a study conducted by WorldSkills UK, good interaction skills were a specific factor that improved the competitors' success. In justification, the competitors said that being brave enough to ask questions and to verbalise their thinking supported their problem-solving ability in the competitions and promoted a successful performance. (Mayhew, James, Chankseliani & Laczik 2014.)

We will next look at how young people who have participated in the Finnish Taitaja competitions have experienced the significance of networking. The Finnish Academy for Skills Excellence (FASE), which operates in conjunction with Häme University of Applied Sciences, annually sends out a feedback questionnaire to Taitaja competition participants. The respondents stress the fact that they get to know other young people in their field during the competition. These are some of their comments: "lovely experience, new fb friends"; or, "a great experience, I was already a 'winner' when I made it to the semifinals, I made new friends and will try again next year"; or, "it was fun even if the day was long and hard, I exceeded myself, I learned new things, I got to know new people, the feedback I received was good, and the areas in which I need to develop were put nicely". Young people are encouraged to network during the competition, for example by means of evening activities organised for them. Social media makes it easy for them to maintain contacts, and there are many digital ways of keeping in touch. More competitors from outside Finland come to Taitaja competitions every year, adding an international dimension to the networking. This makes the com-

petition a forum where young people find it easy to establish international networks.

The networking of teachers or instructors who, in the context of the competitions, are referred to as coaches provides opportunities for developing teaching methods and learning environments through the competition activities. The Finnish Academy for Skills Excellence (FASE) surveys the coaches' views and experiences by annually collecting their feedback after the semifinals and the finals. One question specifically concerns networking. In their responses, the coaches express particular appreciation for the possibility of seeing what the learning environments at other educational institutions are like in connection with the semifinals. When implementing the Taitaja finals, each event organiser has her/his specific task related to developing vocational education and training by means of the vocational skills competitions. Pekka Matikainen (2016), Competition Manager at Skills Finland, says that a vocational skills competition is the display window of vocational education and training. Among other things, this means using different innovative solutions when implementing the competition. Innovativeness is sought after in the implementation of not only the competition itself, but also at the individual level during the competitor's preparation process. The coach thus has to come up with smooth and financially sustainable solutions for the coaching arrangements. Good networking skills are helpful in finding these solutions. Cooperation between different sectors in one's own organisation is a good way of working that helps to lower the threshold for sharing competence, thus enriching teaching and coaching. One example of the development of an organisation's internal cooperation is the model implemented by the Hyria team (Hyria koulutus Oy) in the HUIPUT KEHIIN project coordinated by HAMK. The competence and resources for the security sector and practical nurse programmes were combined for the benefit of the students. The project aimed to test methods of delivering first aid training and training in managing threat situations that made sense for the students and their studies. The outcome was that the students and teachers in both fields of education benefited from the competence sharing, while the boundary fences between two different fields were lowered in a natural way. Preparation for future Taitaja competitions was a good way of strengthening the first aid skills of the security sector students, while the practical nurse students gained useful experience in working with customers.

Another Hyria cooperation model in the same project was a model implemented between Hyria and Laurea University of Applied Sciences titled "UAS path advances your competence". In this cooperation model, practical nurse students were offered the possibility to complete one module of nursing studies at Laurea. Students who go on to study at a university of applied sciences can later have this module recognised and accredited. A great number of students were willing to take part in this experiment, but as the studies started, the group of enthusiasts dwindled. Those who participated in the experiment found university of applied sciences studies meaningful, and this positive learning experience helped them extend their networks

(HUIPUT KEHIIN. Eerola et al. 2014). It is important that young people receive support in taking on challenges. Even a little bit of support can often encourage young people to develop their competence. Within the context of a top expert's characteristics discussed above, an ability to bravely take on challenges makes it possible to navigate smoothly in labour market networks. Competition activities have, in many cases, opened doors when selecting a job or starting an enterprise. Making one's competence visible, or branding, has become a new labour market challenge. Competition activities generate many types of networks, which should be boldly used to showcase one's competence. Apart from vocational competence, the competitors have the courage that comes from strong internal entrepreneurship to display their skills to others. This can help them find a job or convince customers of their competence.

References

Academy of Finland. Knowledge, know-how and the changing working life (2015). Retrieved 20 April 2016 from http://www.aka.fi/globalassets/33stn/osaaminen-ja-muuttuva-tyoelama.pdf

Alasoini T. & Järvensivu A. & Mäkitalo J. (2012). *Suomen työelämä vuonna 2030. Miten ja miksi se on toisen näköinen kuin tällä hetkellä.* Publications, concern 14/2012. Helsinki: Ministry of Economic Affairs and Employment

AMKE publication (2016). *Ammattiosaaminen 2025*. Retrieved 20 April 2016 from http://www.amke.fi/media/ammattiosaaminen2025.pdf

Eerola, T. & Tuominen, P. & Hakkarainen, R-L., & Laurikainen, M. & Mero, N. (2014). *Huiput kehiin – Projektin toteutus ja tulokset.* Hämeenlinna: Häme University of Applied Sciences. Publications of HAMK Professional Teacher Education Unit 1/2014.

Gladwell M. (2013). *Outliers: The Story of Success.* New York, NY: Back Bay Books.

Matikainen, P. (2016). Lecture 18 February 2016. Häme University of Applied Sciences. TaitajaPLUS seminar. Hämeenlinna.

Nokelainen, P. & Korpelainen, K. & Ruohotie, P. (2009). Modelling vocational excellence. MoVe. University of Tampere.

Mayhew K. & James S. & Chankseliani M. & Laczik A. (2013). *Benefits of developing vocational excellence through skills competitions.* Retrieved 20 April 2016 from http://vocationalexcellence.education.ox.ac.uk/wordpress/wp-content/uploads/2014/02/Project-3-Research-brief.pdf

Salakari, H. (2007). *Taitojen opetus*. Saarijärvi: Saarijärven Offset.

Sitra. (2016). Retrieved 20 April 2016 from http://www.sitra.fi/uutiset/tyoelaman-taitekohdat/vain-joka-neljas-suomalainen-tyollistynyt-avointa-tyopaikkaa-hakemalla

Top expertise of a vocational teacher

Seija Mahlamäki-Kultanen

A vocational teacher's career

The career mindsets of vocational teachers are changing rapidly. Teachers may develop, acquire new competences and aim for new tasks during their careers. One way of making progress is participating in networks that support the teacher's competence development and in vocational skills competition activities. This challenges the teacher to consider his or her personal relationship with top expertise and to remain at the cutting edge in his or her vocational field and with respect to pedagogy, as a top expert.

This article looks at the top expertise of a vocational teacher at different career stages. It reflects on changes in teachers' mindsets regarding their careers and analyses a vocational teacher's career as defined by various career stages and participation in competition activities. It also introduces innovative Open Badges, which are awarded in recognition for competence accumulated in competition activities.

Changes in the operational environment and teachers' careers

A reform of vocational education and training is currently under way in Finland in line with the Government Programme of Prime Minister Sipilä (Prime Minister´s Office, Finland). VET providers are re-organising their activities, and the network of education providers will be evaluated. In the national debate, it has been argued that a drastic drop in the number of teachers may be expected, and that competition for jobs in the education and training sector will be much more prominent.

The reformed organisations will be versatile, and many types of new roles and tasks for teachers can already be seen in them. The VET reform will affect the guidance of learning and completion of qualifications, workplace relationships and the staff's job descriptions. Whole new professional titles will perhaps be created to replace old ones. Teachers' careers are undergoing a transformation, and this is giving rise to many kinds of thoughts and future visions among teachers' supervisors. (Eskola-Kronqvist et al. 2015.) New ways of recognising and demonstrating the competence required in the education and training sector will consequently be needed.

Previously, professional titles in the education and training sector were mainly based on formal qualifications (vocational teacher, special needs teacher, guidance counsellor and principal). Today, new professional titles and concepts coined within certain organisations are coming to light. Top expertise coach could be one of these new professions. A top expertise coach would be responsible for the coaching of both students aiming for a qualification and those already in the labour market when they are reaching for the top of their fields in vocational skills activities and productive work.

Where does the competence of top expertise coaches stem from, and how can they make sure they continuously remain top experts? Teachers participating in vocational skills competitions in different roles learn a lot from these activities, even if very little evidence of it has existed thus far, or methods for demonstrating this competence. For this purpose, the Finnish Academy of Skills Excellence has developed digital Open Badge credentials. The competence accumulated through competition activities should be recognised and accredited, both for the employer's needs and to support the vocational teacher's personal development. In order to have genuine significance with respect to how a teacher's career progresses, the tools used in the recognition and accreditation of learning should be effective, well-known and valued by the community. This article describes the development of the Open Badge for top expertise coaches and the phases and experiences in its background.

It is possible for equality to coexist with incentivising competition

From a legal standpoint, the idea of competition and supporting the gifted is approached from the perspective of equality in the Finnish school system. The primary task of the system is to ensure that all students have equal opportunities to learn and progress in their studies. There is little or no positive emphasis on competition between the students, even if, under the guidance of a skilful pedagogue, demonstrating one's competence and competing may encourage students to strive for their best performances. It is thus understandable that the idea of teachers' top vocational expertise or competition activities for teachers themselves is still rather new, and building a new teacher's identity is thus included in the frame of reference of a top vocational expert's competence (Table 1). There are also fields where participation in competitions is a key part of core vocational skills and a teaching method, and the teachers also compete actively. Many employers, organisations and companies encourage teachers by giving out Teacher of the Year awards. Global education offers Finnish teachers the possibility to familiarise themselves with societies where competition means something very different from what it means in Finland, and this allows them to develop by comparing the different mindsets.

Labour market development has changed career models by bringing competition for superiority to the workplaces in a new way. Realistic preparation for this is thus also needed in vocational education and training, and the qualification requirements offer the possibility for such preparation (Finnish National Board of Education 2016). Employers expect that, as a result of vocational teachers' work, the system will turn out vocational top experts with a realistic idea of the labour market and their competitiveness in it.

Vocational teachers no longer travel the same path from teacher training to decades-long careers as teachers, followed by retirement. Instead, teachers can follow many alternative paths by completing their competence and actively steering their careers. A career may also contain breaks. Competition activities and developing vocational top expertise may today be seen as part of each vocational teacher's work, on the one hand, and as a way of developing your personal competence to the top level and progressing your career in a goal-oriented manner on the other, if this is otherwise made possible at the relevant time by your work, operating environment, competence requirements and employer. Keeping their competence at the top level ensures that teachers can also return to other areas of the world of work during their careers.

VET providers are currently re-organising education and training, and the future trend will be towards increasingly large units where studies leading to a qualification are organised while providing more personal guidance and coaching and maintaining close contacts with employers. In addition,

the work will include continuing education projects and other development activities. New opportunities are offered during the course of a vocational teacher's career, where conventional qualifications are not the only significant competition factors. Instead, multidisciplinary, combinative and creative competence is appreciated. Teachers may compete for jobs, and demonstrated competence is one way of gaining a competitive advantage.

Universities of applied sciences have also been through an extensive process of transformation, and they are working on their strategic profiles. At best, competence management and leadership take the form of strategically led, goal-oriented and systemic activities. Such activities have been systematically studied at HAMK (Ahokallio-Leppälä 2016a).

The discussion on a vocational teacher's personal top expertise is taking on new meanings. The Advisory Body for Professional Development of Education Personnel (2009) developed a path model for a teacher's professional development by analysing a teacher's competence development and career. As a means for developing competence, it proposes such methods as periods spent in the workplace, mentoring and participation in training. Since this model was devised, the rate of development and diversity in teachers' careers and in the education and training sector have increased significantly. It is time to develop new types of career models and efficient and even more dynamic methods of recognising and developing competence, including digital credentials and Open Badges whose competence requirements can be updated. The use of digital Open Badges is expanding rapidly, and different badges have indeed been in use for quite some time. Digitality makes them easier to award, use and update (Ahn, Pellicone & Butler 2014).

In 2016, several different strategy-driven competence requirements and the corresponding Open Badges have been introduced for internal use at HAMK. All personnel members will earn a digital Open Badge in communal work (Ahokallio-Leppälä 2016b). Open Badges have been earned together at workshops, and there is even a little competition going on in the work community for who can get their badges first. Recent experiences at HAMK show that communal working methods and guidance are helpful at the start of earning Open Badges. A study by Lahdenkauppi (2016) on the recognition of a vocational teacher student's competence showed that even the teacher students found it difficult to structure their competence, and they needed clear criteria and guidance to do so.

A stage model of a vocational teacher's career

In research literature, a teacher's career is traditionally divided into an early stage, a middle stage and a final stage. However, the majority of the research concerns basic education and general upper secondary education teachers, whose careers differ significantly from the careers of vocational

or professional teachers. In traditional teachers' career models, the career usually starts earlier than the careers of vocational teachers, and it may last for up to several decades longer than a vocational teacher's career. The average age of students in vocational and professional teacher education, for example at HAMK School of Professional Teacher Education, is typically over 40 years, and they thus usually have some 20 or 30 years ahead of them in their careers. Their career stages are diverse both before and after they obtain their qualifications. All models tend to simplify a teacher's diverse reality.

A vocational teacher' career stages based on their working years and competition activities may, for example, be structured as follows:

Involvement in competition activities and development into a top expert

Guiding students' learning and encouraging them in competition activities; recognising talented students and guiding them to competition activities are part of the teacher's work. Mainly educational institution and regional level activities.

Stage of active involvement in competitions

The teacher actively takes part in competition activities in the role of a teacher, coach and expert. He or she takes part in organising regional qualification rounds and national competitions and supports students when they participate in international events. A top expert teacher also personally takes part in competition activities related to his or her field and pedagogy, continuously challenging himself or herself and developing.

Stage of active competition participation and peak of the career

The teacher maintains his or her work motivation and continuous development and assumes central roles in international competitions. The teacher seeks and mentors new competition actors, develops practices and shares information widely and in different formats.

Frame of reference for a vocational teachers' top expertise

Little relevant research and few frames of reference that would serve practical development efforts are available concerning the competence accumulated in or required by vocational competition activities, on the one hand, or a vocational teacher's personal vocational top expertise on the other. This article thus seeks to spark international discussion on this topic. The frame of reference provided in Table 1 is proposed as the starting point for the discussion.

When drafting the frame of reference, I drew on a prior framework that describes the competence of a vocational teacher in 2025 prepared in cooperation with Finnish professional teacher education units in the uni-

versities of applied sciences (Mäki, Vanhanen-Nuutinen, Guttorn, Mäntylä, Stenlund and Weissmann 2015). I have modified the concepts of the framework and the targets of evaluation to make them more compatible with the context of the competition activities. The original framework was produced in broad-based cooperation with the professional teacher education units and stakeholders using the methods of future research. It aimed for future knowledge on the probable competence that an instructor of vocational teachers should strive for. In addition, it takes into consideration Aila Paaso's (2010) research on a vocational teacher's competence requirements. Vocational skills competition activities are relevant to the work of every vocational teacher, and they should thus in some respects be included in the competence requirements for education that confers a pedagogical qualification. On the other hand, there are actors in the sphere of vocational skills competitions with high competence requirements that even approach those set for teacher instructors or vocational education developers and development managers at a top international level.

The Table was tested in cooperation with Skills Finland, and it has been used in the coaching of one group of experts preparing for an international competition in cooperation with their supervisors. The structure of the table ensures that each target of evaluation can be made more specific and modified for use as a criterion for measuring and recognising competence in the selection of competition actors and developing competence. The objectives are defined at the level of "excellent".

Teija Ripattila, Chief Training Manager with Skills Finland, and Pirjo Tuominen, a teacher educator at HAMK's Finnish Academy of Skills Excellence, interviewed both experts and their supervisors. Within the context of training for personalisation discussions, they produced a more advanced version of the framework of competences and performances required to obtain an Open Badge. The open questions helped the respondents to structure their competence better than the concise expressions in Table 1. As competence was recognised, it was also observed that it was appreciated more, and supervisors saw more concrete possibilities for gaining versatile benefits from vocational skills competitions at the level of the education provider. (Tuominen & Ripattila 2016.) User experiences with the coaching process encourage actors to continue their efforts to recognise competence and make it visible. The current form of the Open Badge will also be developed based on feedback; in Table 1, it is shown in its current form.

Table 1. Frame of reference for a vocational teacher's top expertise

Competence area of an actor in European/international vocational skills competitions and the target of evaluation	**Criterion for the level of "excellent"** **The individual**
Pedagogical competence	is able to plan, implement, evaluate and develop personalised coaching processes for a young person participating in European/international competitions at the top level of his/her vocational skills is able to support a competitor and a team of competitors during their preparation for and participation in a competition through methods of interaction and mental training
Building a teacher's identity	has the ability to communicate, as part of his/her teaching work, in his/her work organisation, regionally and internationally, about vocational skills competitions and prepare for them in a way that will strengthen the positive image of Finnish teachers and Finnish teacher identities is able to motivate and activate new teachers and representatives from the world of work in European/international vocational skills competitions
Management and leadership of teaching and competence	knows how to build learning environments (physical, virtual, social, psychological) for the coaching process, optimising the expenses and benefits of the process with regard to learning and success in European/international vocational skills competitions is able to work as part of a competing team at the European/international level
Facilitating personalised solutions	is able to utilise nonformal, informal and formal learning possibilities in the coaching process cost-effectively in a manner that best supports an individual's needs and skills has the ability to promote his or her personal learning in European/international competition activities in a goal-oriented and documented manner
Workplace competence	is able to recognise, innovate and implement solutions for competition activities and the related coaching that will create a competitive edge for companies and educational institutions

Multicultural competence	is able to take part in European/international vocational skills competition activities, identifying vocational skills concepts and the importance of cultural differences with regard to them is able to take part in European/international vocational skills competitions using the English language, and has a command of the English terminology used in competition activities has sufficient command of the basics of the language spoken in the country organising the competition so as to be able to communicate on matters related to the competition
Building learning communities	has the ability to use competition activities to build a learning community that will support Finnish competitors and that is based on improved competition rules and operating models
Optimisation of learning resources	is able to identify and create alternative forms of funding for coaching activities, justify the need of funding to different actors and implement coaching activities so that they meet the profit expectations of financiers is able to plan, implement, evaluate and develop coaching so that it is linked as effectively as possible to the education provider's other processes (student recruitment, guidance, vocational skills demonstrations) and to the entire student group's studies has the ability to share his/her own competence with other competition actors and to learn from others while at the same time renewing and developing activities
Substance-related competence	is able to compile and analyse information in connection with competition activities (online content and services produced by EuroSkills and World Skills, competition-related activities and presentations) on the European/international development of his/her vocational field to support his/her own teaching and vocational development
Other objectives of an international organisation	

Open Badge as a credential for top expertise

Preconditions for the career progress of a teacher and a teacher with top expertise include both formal qualifications and, in particular, other personal and goal-oriented competence development. The Ministry of Education and Culture's Advisory Board for Professional Development of Education Personnel (2009) presented a path model for lifelong learning. This model proposed mentoring, periods in the workplace, job rotation, projects, different forms of training and demonstrations as a means for career development.

At the moment, there are few practical examples of developing and proving a teacher's competence by means of demonstrations. Oulu School of Vocational Teacher Education has developed competence demonstrations for the pedagogical education of vocational teachers (Happo & Perunka 2016, 54–72). At Häme University of Applied Sciences, many opportunities to have their competence recognised based on digital processes are offered for the entire staff. After completing one of these options, the candidate is awarded an Open Badge as a digital credential. The entire staff will also earn an Open Badge in communal work in 2016 (Ahokallio-Leppälä 2016).

There has been little research on international experiences with Open Badges, and practical examples can mainly only be found on the websites of different services, including the Open Badge Factory. HAMK is currently collecting experiences and research on the use of Open Badges.

The Finnish Academy of Skills Excellence has developed a digital badge for the needs of international competition activities, which is based on the frame of reference shown in Table 1. You can apply for the badge directly by clicking on the link. A badge will be awarded for a fee to an applicant who meets the competence requirements. To apply, visit https://openbadgefactory.com/c/earnablebadge/O467W4aKH5a6/apply. The first practical tool has now been devised for demonstrating a vocational teacher's top expertise, and new tools are actively being developed.

References

Ahn, J. & Pellicone, A. & Butler, B.S. (2014). Open badges for education: what are the implications at the intersection of open systems and badging? Research in Learning Technology 22. Retrieved 30 August 2016 from http://www.researchinlearningtechnology.net/index.php/rlt/article/view/23563.

Ahokallio-Leppälä, H. (2016) a. Oral communication.

Ahokallio-Leppälä, H. (2016) b. *Osaaminen keskiössä – Ammattikorkeakoulun uusi paradigma*. Acta Universitatis Tamperensis 1624. Retrieved 29 August 2016 from http://tampub.uta.fi/handle/10024/98404.

Eskola-Kronqvist, A. & Mäki-Hakola & H., Mäntylä, R. & Nikander, L. (2015). Opettajat rakennemuutoksessa – Muutosta luvassa. *Rakennemuutoksen vaikutuksia opettajan osaamistarpeisiin, esiselvitysraportti*. Häme University of Applied Sciences. Retrieved 15 August 2016 from https://publications.theseus.fi/bitstream/handle/10024/96190/HAMK_opettajat_rakennemuutoksessa_2015_ekirja.pdf?sequence=1.

Happo, I. & Perunka, S. (2016). Miten sinä haluaisit osaamisesi osoittaa? Henkilökohtaistetun opintopolun toteutuminen Ammatillisen opettajakorkeakoulun opetusharjoittelussa Oulun ammattikorkeakoulussa. *Ammattikasvatuksen aikakauskirja* 18(2), 54–72.

Lahdenkauppi, M. (2016). Ammattipedagogisen osaamisen työelämälähtöinen arviointi ammatillisessa opettajankoulutuksessa: Toimintatutkimus HAMK ammatillisessa opettajakorkeakoulussa. Retrieved 29 September 2016 from http://urn.fi/URN:NBN:fi:uta-201609162277.

Mäki, K. & Vanhanen-Nuutinen, L. & Guttorm, T. & Mäntylä, R. & Stenlund, A. & Weissmann, K. (2015). *Opettajankouluttajan osaaminen Ammatillisen opettajankouluttajan työn tulevaisuus 2015*. HAAGA-HELIA, HAMK, JAMK, OAMK and TAMK Universities of Applied Sciences.

Finnish National Board of Education. *Requirements for Vocational Qualifications. Vocational qualification in wood processing 2010*. Study programme Specialisation in Industrial Joinery, joiner. Regulation 33/011/2010. Retrieved 29 August 2016 from http://www.oph.fi/download/158842_Wood_Processing_2010.pdf.

Advisory Board for Professional Development of Education Personnel. (2009). *Opetustoimen henkilöstön elinikäisen oppimisen polkumallit*. Retrieved 15 August 2016 from http://www.minedu. fi/export/sites/default/OPM/Koulutus/aikuiskoulutus_ja_vapaa_sivistystyoe/opetustoimenkoulutus/julkaisut/Polkumallit.pdf.

Tuominen, P. & Ripattila, T. (2016). Oral communication.

Paaso, A. (2010). *Osaava ammatillinen opettaja 2020. Tutkimus ammatillisen opettajan tulevaisuuden työnkuvasta*. Academic dissertation University of Lapland. Faculty of Education.

Prime Minister's Office Finland. *Action plan for the implementation of the key project and reforms defined in the strategic government programme*. Retrieved 18 August 2016 from http:// valtioneuvosto.fi/documents/10616/1986338/ Action+plan+for+the+imple mentation+Strategic+Government+Programme +EN.pdf/12f723ba-6f6b- 4e6c-a636-4ad4175d7c4e.

From an expert to a top skills developer. The case of Developing Excellence in Skills programme for VET teachers and trainers

Tuomas Eerola & Pirjo Tuominen

Vocational skills competitions – a study path for a potential top expert

> *"Talented children should not be idolised or raised above the others. However, they should have the same right that should be guaranteed to everyone, a right to balanced growth and positive development, both in their emotional life and their abilities. As talent is a relative concept, the number of those who are talented will always be low; as standards improve, the top level moves further out of reach. Talented individuals are a richness, and they should not be envied. While equal, we are all different. We also all have our talents, in one way or another." (Uusikylä 1994.)*

Competitions have always played a key role in developing top expertise. Taking part in competitions encourages one to strive for ever improving

expertise – in physical and mental performances alike. Top performance often requires both. Competitions were introduced as an instrument for developing vocational education and training in Finland immediately after the Second World War. At that time, industrial working skills competitions were launched, organised for the first time in Lohja in 1948 (Purhonen 2005). Today, Skills competitions for young people are on many levels an influential, important tool for vocational education and training. Häme University of Applied Sciences is an active developer of top expertise and an actor in the national Skills network (Eerola & Majuri 2014). HAMK trains competition experts nationally and disseminates the good practices produced through the competition activities for the benefit of all actors. In addition to national activities, the development of top expertise has become one of the leading themes for the export of education at Häme University of Applied Sciences.

In 1988, Finland joined the organisation that arranges the world championships in vocational skills: the International Vocational Training Organization (IVTO), today known as WorldSkills International (WSI). At that time, the world championships in vocational skills for young people were known as the International Vocational Training Competitions or, in Finnish, Taito Olympics. Currently, they go by the name of WorldSkills Competition (WSC). On 19–20 April 1988, the first national Taitaja skills competitions were organised in Hämeenlinna in cooperation with the Finnish Federation of Vocational Institutions (SAOL), the National Board of Vocational Education and the Confederation of Finnish Employers (STK). The main responsibility for the practical arrangements was assumed by Hämeenlinna Vocational Institute and Hämeenlinna Vocational Teacher Education Institute. Two sectors were featured in the first competition: engineering and metal technology and clothing sector. In 1989, a Finnish team took part in the International Skills Competition for the first time.

Skills Finland is an association that was established in 1993 to organise and develop vocational skills competitions in Finland. The objectives of the association are to promote an appreciation and awareness of vocational education and training and vocational skills in society, to improve the learning outcomes of vocational education, and to increase students' interest in continuously improving their vocational skills as well as enterprising. Today, Skills Finland coordinates the national Skills network, the members of which comprise almost all providers of vocational upper secondary education and training together with their cooperation networks and numerous companies, higher education institutions and organisations. Skills Finland also represents Finland in many international Skills networks. (Skills Finland 2016.)

In Finland, there has long been a desire to increase the workplace orientation of vocational education on the one hand and its individual orientation on the other. Many educational policy approaches have been used

to increase the degree of co-operation between vocational education and the workplace as well as to develop flexible study paths that meet the personal learning needs of students. Study paths, particularly those that meet the needs of potential top expertise, have been developed recently, such as paths leading to a double degree, paths that link vocational upper secondary education with university of applied sciences studies, expanded on-the-job learning paths, in which various work tasks are"pedagogised", international study paths and entrepreneurship paths (cf. Eerola et al. 2014). In addition to the above paths, vocational skills competitions and preparation for them offer a worthwhile alternative to study for potential top experts.

The competitions in vocational skills for young people are a success story of the early 2000s in Finland. The national Taitaja competition made its breakthrough in Lahti in 2001, where almost all of the various events for the first time took place under one roof at a large fair. Today, Taitaja, with its semifinals and finals, has become a major annual event, and a showcase and festival of vocational skills that offers information and experiences for everyone. Taitaja activities are an easy way for vocational education and training to cross the media threshold and gain a lot of positive publicity. The competence requirements for the level of "excellent" defined in the national qualification requirements find their concrete expression in the competition tasks decided by the steering groups for each skill.

Young people from Finland have also done well in international skills competitions. Successful young people and their coaches set an inspiring example in their own fields, in their workplaces and among youngsters making decisions about their future study paths. The good practices that led to success can be used by the entire field of vocational education and training, and they thus help to improve education quality across the board. Vocational skills competitions encourage activities at the interfaces between companies and educational institutions, both nationally and internationally, which is apt to promote innovativeness and entrepreneurship education.

Important investments have been made in Finland in organising vocational skills competitions, in preparing for them and in using them to develop the quality and attractiveness of vocational education and training. In recent years, a number of projects have been completed to promote the competitions, many of which have been supported by the European Social Fund. Of these projects, we should mention in particular the projects administrated by Skills Finland that aim to develop top expertise (HUVA, HUKI, KILTA), the research projects administrated by the University of Tampere (MoVE, AVE, PaVE) and the education and dissemination projects managed by the Häme University of Applied Sciences, the School of Professional Teacher Education (AKVA projects). Studies show that these activities have been productive (cf. for example KILTA 2014). The vocational skills competitions have become a significant instrument for development that has an established position as part of vocational education and training. When

talking about competition activities, we should not overlook the SAKU Stars cultural competitions, which play a significant role in promoting young people's motivation to study, creativity and all-round well-being and as demonstrations of the multiple forms in which talent comes.

Vocational skills competitions for young people are forums that promote the objectives of vocational education and training at many levels, where young people studying for a profession, vocational teachers, workplace actors, those considering their study options and the general public meet. Preparing for competitions and participating in them provides young people with an opportunity to work towards achieving top expertise and also to demonstrate their competence. For companies, the competitions are an outstanding opportunity to familiarise themselves with the standard of vocational education and training in their sector, promote the workplace orientation of education, recruit young experts into their service and spread awareness of the company and its operations. Coaching and organising vocational skills competitions develop the vocational skills of teachers as well as the internal operations, internationalisation and business co-operation of educational institutions. The competitions are an opportunity to compare the standards of education and expertise both at the national and international level. The exposure brought by competitions clearly increases the number of people interested in seeking vocational education and training. Through coaching, both individual and workplace-oriented methods for guiding learning are developed and can be used across the entire field of vocational education and training. For the general public, competitions are major showcases for vocational skills and education.

Role of vocational skills competitions in developing a vocational teacher's competence

> *"Teachers must consider and reflect upon the same traits in themselves that they are guiding and coaching in their students. The teacher 'lives through', or internalises, the contents of guidance provided by him or her. Professional growth supports the psychological and personality development of both the students and the teacher. For the teacher, guiding professional growth is a shared journey. It also involves a personal growth process for the teacher. Each student 'teaches' the teacher. Professional growth is about examining yourself as a person, a teacher and a counsellor, and maybe also as a vocational skills coach. The growth process brings increased self-knowledge, enhances your personal strengths and, above all, gives you courage to face any challenges to your personal growth. This will also help the teacher in encountering the students better." (Isokorpi 2013.)*

Vocational skills competitions are tools for maintaining and developing the competence of vocational teachers. The competition activities allow teachers and instructors to network while developing their pedagogical skills, substance competence and capabilities for internationalisation. Competition activities offer an excellent setting for cooperative sectoral development. They provide teachers with a forum for keeping up to date with the accelerating changes in the world of work. Coaching young top experts and success in competitions also generate new enthusiasm for everyday work.

New actors are continuously needed in all types of competitions. Due to the positive impacts of vocational skills competitions, many educational institutions wish to expand their participation at different levels, both nationally and internationally. Efforts continue to be made to improve the quality and recognisability of the national Taitaja competition, and especially its semifinals. The Taitaja event is also being developed in a more open and accessible direction: students in need of special support are to be involved through TaitajaPLUS activities. Participation in competition activities is also expanding at the international level. The highly successful WorldSkills event in Helsinki in 2005 boosted Finnish actors to the position of esteemed international experts and developers of competition activities.

Thousands of people from educational institutions and companies have taken part in the competition and coaching activities in Finland. A significant number of the actors currently involved have taken part in the expert training organised by AKVA projects (Improving Vocational Skills by Competition and Coaching Activities), which are administrated by Häme University of Applied Sciences. The training programme of competition experts developed through these projects was mainstreamed as part of the activities of Häme University of Applied Sciences, School of Professional Teacher Education, by establishing the HAMK Skills Trainers´ Academy in 2008. Since 2015, the Academy has been operating under the name of the Finnish Academy for Skills Excellence (FASE), which reflects its basic task as a promoter of wide-based vocational top expertise better than the old name.

The Finnish Academy for Skills Excellence (FASE)

> *"An academy of vocational top expertise – a partner for competent teachers and insightful educational institutions"*

The roots of FASE's operation thus go back to projects implemented by Häme University of Applied Sciences, School of Professional Teacher Education in 2000–2007 under the name Improving Vocational Skills by Competition and Coaching Activities (AKVA). In these projects, which were beneficiaries of European Social Fund support, models were created for training experts for vocational skills competitions, and networks were

established for implementing the training and mainstreaming good practices. The activities launched in the form of projects were put on a permanent footing by establishing HAMK Skills Trainers' Academy – currently known as the Finnish Academy for Skills Excellence. The Academy's activities are based on a strategy formulated by a steering group consisting of key stakeholders. According to this strategy, the purpose of the activities is to support the development of vocational top expertise: the aim involves vocational education and training that will create new competences and that can meet future challenges flexibly, efficiently, economically and in a service-oriented manner.

FASE supports the development of vocational top expertise by diverse means: coaching and training, research and development projects. The Academy participates in the quality assurance of national Taitaja competitions, the dissemination of good practices developed in vocational skills competitions, and the promotion of the more efficient use of these practices. The Academy also participates in the export of education within its area of expertise and develops the pedagogy of top expertise. Its activities support the implementation of Skills Finland's strategic goals. Fee-paying service activities and the export of education are based on customer needs. FASE's project activities are geared to the objectives of the current funding programme.

FASE serves both individuals and organisations. It works as part of the national and international Skills network in cooperation with the Ministry of Education and Culture, the Finnish National Board of Education, Skills Finland, VET providers, employers, higher education institutions and professional teacher education. FASE's activities have four priority areas, which are as follows:

1. Development of expertise

The Academy is a partner with developers of vocational top expertise. The Academy meets the developmental needs of its partners. Individualisation, competence-based practices and the use of research data form the basis for the development of expertise. Expertise is recognised based on demonstration.

The competence of experts in vocational skills competitions is developed in cooperation with Skills Finland, taking this organisation's strategic targets into consideration. In the training programmes, emphasis is placed on the use of good practices developed in competitions, the application of the possibilities offered by qualification requirements, and competence development as a right for all.

Authentic learning environments and digital tools are used in the development of competence.

2. Publishing and dissemination of good practices

The Academy gathers and develops information related to top expertise and ensures the effectiveness of good practices. The Academy also ensures that the expertise of more experienced Taitaja actors is shared with newcomers. The Academy arranges coaching, mentoring, training and seminars, it produces publications, and it makes use of social media in its dissemination activities. The target groups for these activities are persons working in vocational education and training both in Finland and abroad.

3. Top expertise research and development projects

The Academy supports top expertise research under a separate research programme. The Academy manages and acts as a partner in development projects related to its area of expertise. Currently, supporting the possibilities to promote top expertise offered by the degree reform is an important opportunity and a key research interest. Specific areas of research and development include:

1. recognising and supporting strengths, special teaching for talented students;
2. pedagogy and development methods for top expertise;
3. significance and the impact of vocational skills competitions.

4. Export of education

The Academy participates in the export of education within its own area of expertise and develops new export products primarily based on partnerships, in co-operation with the HAMK School of Professional Teacher Education and other actors.

The aim is to train 300 experts for vocational skills competitions every year. This target has been exceeded year after year. Participants who have completed the training include experts serving as senior specialists in their fields and judges of their skills in international vocational skills competitions, Skill Managers responsible for the organisation of Taitaja events, vocational skills coaches, Taitaja judges and others familiarising themselves with competition activities and the utilisation of their results. Among other things, good practices that promote top expertise are spread via social media as well as by means of printed publications, electronic documents and

videos. Several examples of recent publications that FASE has produced or been involved with should be mentioned: Towards Vocational Top Expertise (2013), ROLL OUT THE TALENT – Final project report (2014), a teaching video titled Talent – from Potential to Strength (2014), Skills Competitions in Finland for People with Special Needs (2016) and the three-part publication series Kilpailuja kaikille (Competitions for Everyone) (2009–2013).

FASE is active in international networks and exports the Developing Excellence in Skills programme to international markets. Top expertise is also developed in cooperation with the Association for the Development of Vocational Education and Training AMKE and Skills Finland. Especially in the area of research in top expertise, FASE works together with the University of Tampere.

Developing Excellence in Skills programme

> *"The Finnish Academy for Skills Excellence (FASE) in Häme University of Applied Sciences, School of Professional Teacher Education, offers training for high-level skills trainers and competition specialists. FASE improves the quality and attraction of VET, the competence of VET teachers and trainers and also the national and international collaboration between VET institutions and the world of work." (FASE 2016).*

The training organised by FASE comprises continuing education for vocational teachers and instructors. The programmes serve to maintain and develop the competence of vocational teachers and instructors as well as workplace supervisors. Teachers can earn an Open Badge to demonstrate the competence they have acquired by participating in training and coaching organised by FASE or otherwise. A three-tiered training programme is offered to Finnish actors:

> competition mentor training (3 credits); pedagogy of vocational top expertise (coach training) and Taitaja Skill Manager training (9 credits); and as the third tier, WorldSkills expert training (18 credits) and EuroSkills expert training (12 credits). Should they wish, the participants can usually utilise these attainments as part of their further studies aimed at attaining a higher education degree.

In addition to programmes aimed for the Finnish market, FASE also provides a programme titled Developing Excellence in Skills — Programme for VET Teachers and Trainers, which is intended for the export market (FASE 2014). One of the main goals of the programme is to work with the client in order to come up with new operating approaches and ideas for develop-

ing the attractiveness and quality of vocational education and training as well as top expertise. Another goal is to promote the pedagogical abilities of teachers and guidance counsellors to guide potential top experts. A programme implementation agreement is always made with an educational organisation – private persons cannot be clients, at least not at the moment.

The programme includes three modules. The first module is called Orientation Level, which examines the principles of developing top expertise and the pedagogy of vocational top expertise. The second module is called Organisational Level, in which the Finnish education system and good practices taken from vocational skills competitions are benchmarked, and a development project is completed within the student's own organisation. The third module is called Personal Level, in which the students deepen their personal guidance skills and, wherever possible, gain experience with the Finnish system by taking a study trip to Finland.

The content is based on the Finnish education system and professional teacher education, pedagogical development in the HAMK School of Professional Teacher Education, and good practices created in vocational skills competitions. However, attention is also given to the needs of the client: the content and approaches used are tailored to meet the client's needs. The programme can consist of all three modules or just one. The following section describes one tailored implementation.

Case SENAI – Pedagogy of Top Expertise as Export of Education

> *"Finland is a cold country with a really warm heart". (Gabriel Lopes, an expert from the state of Minas Gerais in Brazil – comment at Taitaja2014 event in Lahti)*

At the World Skills Competition (WSC) organised in London in 2011, the Finnish actors shared a stand in the Global Skills Village. These actors included the Ministry of Education and Culture, the Finnish National Board of Education, Skills Finland, the Centre for International Mobility (Cimo) and HAMK Skills Trainers' Academy, currently the Finnish Academy for Skills Excellence. The stand showcased, among other things, HAMK's professional teacher education, Finnish professional teacher education and the top-level coach training organised by the Skills Trainers' Academy. The last mentioned caught the interest of SENAI (National Service for Industrial Training), a Brazilian VET organisation, whose objectives include developing the pedagogical competence of persons active in the country's vocational skills competitions. SENAI is the largest education provider in South America with more than 800 institutions and education offered in 28 different fields. During its 72 years of operation, this enormous organisation has trained tens of millions of professionals, which makes it a significant provider and developer of VET in South America.

HAMK initiated a lengthy negotiation process with this major education provider, which resulted in an understanding of the contents, implementation and timing of the training. This programme was titled Developing Excellence in Skills – Pedagogy of Vocational Top Expertise, and its target group was Brazilian coaches and competition experts actively involved in vocational skills competitions.

FASE took on a great but interesting educational challenge. We started planning and preparing an implementation in line with the objectives set for the training in spring 2013. The primary objective of the training was to support and develop the teaching and coaching skills of the target group selected by SENAI. The contents of the training emphasised teaching methods used in the implementation of pedagogy of vocational top expertise and ways in which the participants could later apply what they had learned in their own work organisations. The training started in early 2014 and continued until September of that year. Three one-week contact teaching periods were organised. Two of the contact teaching periods took place in Porto Alegre, Brazil, one in the spring and the other in the autumn. Between these periods, a training week took place in Finland in Hämeenlinna and, in connection with the Taitaja2014 competition, in Lahti. The training delivered during the Taitaja competition provided the participants with an opportunity to become acquainted with a Finnish vocational skills competition and its organisation as well as different VET learning environments. Between the contact teaching periods, the training included distance learning that took place online. The development assignment completed by the participants was supervised by means of WebEx sessions, and the training materials were collected on GoogleDrive, where the participants also wrote their learning journals. A Facebook group was additionally used for less formal communication.

A total of 25 active participants in SENAI's vocational skills competition activities took part in this training, which began in March 2014. They represent 22 WSC skills. A competence analysis that we commissioned indicated that the work experience and length of involvement in the competitions by the participants, who came from different parts of Brazil, varied from a few years to as much as thirty years.

See the Table for details on the participants' work experience and experience in vocational skills competitions:

	0–3 y	3–7 y	7–10 y	over 10 y	not known
Participant's work experience	1	6	6	5	6
Length of involvement in competition activities	9	4	1	2	9

When the participants were asked about their personal goals in the competence analysis, the most important goals that emerged included gaining more knowledge related to coaching and the diversification of guidance methods. However, as the graph below shows, many participants already had prior experience in vocational skills competitions. Once the instructors reached Brazil, it also turned out that eleven group members had themselves competed in vocational skills competitions, either at the national or the international level, and not without success. This data on the diverse initial competence and experience set its own challenges with respect to planning the contents of and implementing the training.

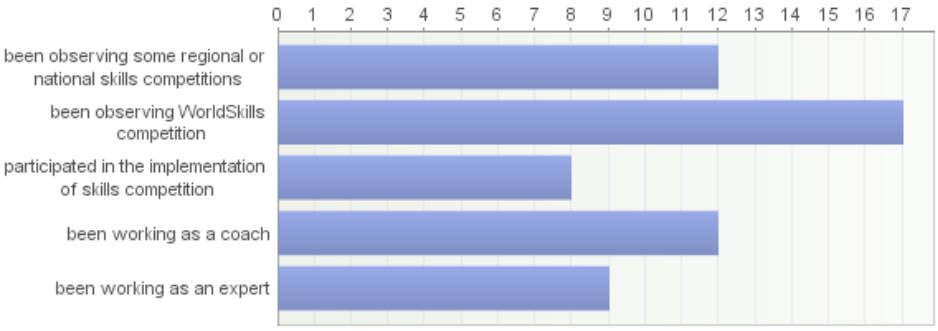

Figure 8. Diversity of experience related to competitions in competence analysis responses.

As the above graph shows, the participants in the training already had rather extensive and diverse experience with Brazilian competition activities. All those who participated in the Developing Excellence in Skills programme went on to have important roles in the WSC competition, which took place in São Paulo in August 2015 (SENAI 2015). In that competition, the majority of them served as either Experts or Skill Managers for their own skills. It is thus not surprising that the participants had strong motivation to learn more about the pedagogy of top expertise and its application in practice when preparing for a vocational skills competition.

Developing expertise

As noted by Korpelainen K., Nokelainen P. and Ruohotie P. (2009) in their study"Ammatillisen huippuosaamisen mallintaminen", it is highly typical that those involved in competition activities develop their own work and improve in it as well as find that their work duties become more diversified. This could also clearly be seen in how committed the participants from SENAI were to their work during the training programme. They felt that

the pedagogical models used in the implementation of group assignments provided them with new implementation models for the coaching. Continuing in the same vein, the aforementioned researchers stress that if a coach has strong motivation during the coaching process, he or she will recognise the importance of his or her competence for the success of the process. Strong confidence in his or her personal vocational skills lays the foundation for this. It gives the coach heightened awareness of how the student can be guided towards achieving better results. Other important characteristics of a coach include a positive attitude towards developing in the field and finding new information. Eteläpelto and Tynjälä (2002) write s that persons who are enthusiastic about their work, challenge themselves to achieve new goals rather than being satisfied with routine repetitions and easy problem-solving in their work duties. By taking on challenges, we learn continuously and also strengthen our expertise. Tynjälä specifically stresses the significance of problem-solving skills in the development of expertise.

It is easy to endorse these views when looking at the professional and personal characteristics of the participants from SENAI. They were, and continue to be, highly motivated to develop their competence and have a positive attitude towards learning new things. Many of the functional study methods and pedagogical solutions used during the training provided them with tools for developing their own work further. Adapting and applying new practices and ideas to one's own work take time. When considering the teaching methods that are the best suited for the teaching of skills, problem-solving skills and lifelong learning skills should not be forgotten. This idea receives support from such authors as Salakari (2009), who points out how important a change taking place in the work environment and the employee's preparedness to adapt to this change are. He emphasises the significance of metacognitive skills in the learning process and stresses, in particular, the use of student-oriented teaching methods to awaken and develop the student's awareness. Versatile teaching methods alone are not enough to learn and teach skills, as the type of learning environments used during each stage of the coaching should also be taken into account. Teaching and learning – and in this case, the coaching of top expertise – are thus not tied to a certain place and time.

This theme sparked a great deal of discussion and feedback, as the group members wished to develop their competence while making sure that what they had learned and experienced could be disseminated broadly in the future. Those who had been involved in competition activities for a longer period were the right persons to relate their experiences with the activities and share so-called tacit knowledge with novices who have joined in the activities more recently. Those who had participated as competitors also passed on to the others their knowledge gained through personal experience in the competitor's role. Identifying with another person's situation touches us more deeply and flavours the experience with feeling.

The participants came from different parts of Brazil and represented many professions. Each had personal experience with guiding students and the diversity of competition activities. Drawing on the coach's personal experiences and identifying the competitor's style of learning are the cornerstones of coaching in different learning environments. This tripartite dialogue opens channels between different actors and spreads the practices to all those who are involved in coaching, both further within the organisation and on to its partners, whether the partners are representatives of workplaces, educational institutions or the competitor's family and friends. (Salakari 2007; Hager 2007.)

Utilising competition activities

We will next discuss the way in which the participants experienced the training and the benefits they gained from the perspective of their own work and competence development based on the feedback they provided. The three contact learning periods comprised a very full package collated from the contents of the pedagogy of top expertise. Oral and written feedback was collected from the participants after each contact teaching period so that the training could by modified and geared to the participants' wishes and the areas needing improvement. The feedback form contained open-ended questions that the participants could respond to by adding their own comments and development proposals. All in all, the feedback was very positive and the participants produced strong reflections on how they had reached their personal goals in their self-assessments. As development targets for the training contents the participants mentioned building up competence through concrete exercises. They reported that they would also have liked more examples of the methods used in Finland to support the competitors when they are preparing for a competition.

The majority of the respondents said they had gained concrete methods for implementing coaching and teaching. The meaning of this can be clarified by giving a few examples.

1) Pedagogy:

Developing the participants' personal guidance skills to enable them to support the students they coach was a priority. New practices, including the learning journal, six thinking hats, dialogical methods, and so forth, were mentioned in the feedback. The training also helped the participants to understand the importance of pedagogy in developing and supporting competence.

2) Coaching:

Developing coaching methods and updating the coaching plan on the basis of what they had learned was an important insight for many. Coaching is teamwork performed together with the student. Practising technical skills alone is not enough, as an instructive approach and genuine presence are also needed, as well as an ability to listen to how the competitor feels and build a trusting relationship.

3) Work community development:

Many participants said they benefited from the different teamwork methods used when working with the themes of the training programme. They will continue experimenting with them later in their own work environments, thus enriching the competence of the work community and disseminating more broadly the skills they acquired during the training. They also said they would utilise what they had learned in such contexts as regional seminars or similar training events.

4) Self-assessment:

The teachers'/coaches' self-assessment skills using either discussions or different exercises were built up. This increased their awareness of how significant guidance skills are during the coaching process. It is thus important to identify the individual learning style of the student and his or her strengths related to the vocational competence needed for the skill in question. The feedback given by other group members as part of self-assessment was also significant.

5) Importance of vocational skills competitions:

One aspect the participants focused on was the quality of teaching and the way it is manifested in the standard of vocational education and training. In this context, they also brought up the difference in the mindsets related to competitions between Finland and Brazil. In Brazil, the main emphasis is on medals and success, whereas the Finnish philosophy stresses participation and learning through it. The goal should indeed be to use competition activities to develop competence.

6) Personal mental growth:

Many participants also praised in their feedback the fact that while the main emphasis of the training was on the pedagogy of top expertise, it also

gave them resources for growing as persons and teachers. They considered such methods as the learning journal, preparing a teacher's competence map and group assignments and discussions as good and effective tools for assessing and developing their own work.

The participants learned about many different operating methods from each other during the training, and they became better acquainted with different skills. The group formed a team that continued its activities in the lead-up to the competition in São Paulo and beyond. For many of them, the trip to Lahti to watch the Taitaja event was their first experience with foreign travel. One of the participants had competed for a place in the finals for their skill in the world championships of 2005. They missed out that time, as another competitor made it to the WorldSkills final in Helsinki as the representative from Brazil. They now got a second chance, and the circle was closed.

On a video recording made during the Taitaja competition in Lahti, one of the students in the group, Gabriel Lopes from the state of Minas Gerais, sums up his experience as follows:"Finland is a cold country with a really warm heart".

References

Eerola, T. (ed.) (2013). *Towards Vocational Top Expertise.* Publications of HAMK Professional Teacher Education Unit 2/2013, 52–63.

Eerola, T. & Tuominen, P. & Hakkarainen, R-L. & Laurikainen, M. & Mero, N. (2014). *Huiput kehiin – Projektin toteutus ja tulokset.* Häme University of Applied Sciences. Publications of HAMK Professional Teacher Education Unit 1/2014.

Eerola, T. & Majuri, M. (2014). Towards excellence in vocational skills. Article – Mustonen, L. (ed.) *HAMK alueen kehittäjänä: kohti työelämälähtöistä tutkimusta.* Häme University of Applied Sciences, 50–57.

Eteläpelto, A. & Tynjälä, P. (2002). *Oppiminen ja asiantuntijuus.* Helsinki: WSOY.

FASE (2014). *Excellence in Skills Training Programme.* Documentary video. Retrieved 30 August 2016 from https://www.youtube.com/watch?v=tPuuUxn4kN8.

FASE (2016). *Website.* Retrieved 30 August 2016 from http://www.hamk.fi/skills.

Isokorpi, T. (2013). *Huippuosaamisen pedagogiikka.* Publications of HAMK Professional Teacher Education Unit 5/2013.

KILTA (2014). *Kilta-hankkeen vaikuttavuusarviointi.* Ramboll Management Consulting Oy. Retrieved 12 December 2014 from http://skillsfinland.fi/julkiset/julkaisut/KILTA-hankkeen_vaikuttavuusarviointi_Skills_Finland_2014.pdf.

Korpelainen, K. & Nokelainen, P. & Ruohotie, P. (2009). *Ammatillisen huippuosaamisen mallintaminen.* Ammattikasvatuksen aikakauskirja 11(1), 33–47.

Purhonen, K. (2005). Taitaja-kilpailujen juuret teollisuuden työtaitokilpailuissa. Article in Saarinen, H. (ed.) *Taitaja – ammattitaidon SM-kilpailut. Nuorten näytön paikka.* Hämeenlinna: Häme University of Applied Sciences, 19–25

Pynnönen, P. & Raudasoja, A. (2013). Recognizing and supporting a student's special strengths Eerola, T. (ed.) *Towards Vocational Top Expertise.* Hämeenlinna: HAMK Professional Teacher Education Unit, 9–16.

Salakari, H. (2009). *Toiminta ja oppiminen – koulutuksen kehittämisen tulevaisuuden suuntaviivoja ja menetelmiä.* Ylöjärvi: Eduskills Consulting.

Salakari, H. (2007). *Taitojen opetus.* Ylöjärvi: Eduskills Consulting.

SENAI (2015). Retrieved 30 August 2016 from http://www.worldskillssaopaulo2015.com/en/.

Skills Finland (2016). Retrieved 30 August 2016 from http://www.skillsfinland.fi.

Talent – from potential to Strenght. (2014). *Lahjakkuus – potentiaalista voimaksi.* Documentary video. English subtitles. Häme University of Applied Sciences. Retrieved 30 August 2016 from https://www.youtube.com/watch?v=bgrn1omPorM.

Uusikylä, K., (1994). *Lahjakkaiden kasvatus.* Helsinki: WSOY.

Conclusion

This collection of articles describes the pedagogy of vocational top expertise and the way the authors see it as part of the vocational education and training system and culture in Finland. On the other hand, the articles also account for the possibility of applying the good practices in other countries and education systems. In particular, the authors focus on the important role of vocational skills competitions as a pedagogical tool and learning environment. They also discuss vocational teachers' and supervisors' competence to instruct, support and encourage top experts of the future.

Continuous development of competence is a precondition for success in global competition. Ordinary competence is not enough, and top expertise is required at the level of the individual, the team and the organisation alike. However, top expertise is in a constant state of flux and will slip through our fingers unless we work tirelessly to achieve it. Besides competence in adapting to unexpected changes in the operating environment, a top expert and a top team also need the ability to accelerate the changes via their actions. Top expertise is not exclusively seen as the cognitive abilities of highly educated people. Recognising the physical aspect of abilities is equally important: dexterity, adroitness, manual skills.

Organisations need methods to continuously develop top expertise. This collection of articles strives to highlight the importance of pedagogical solutions for developing vocational top expertise, it strives to offer ideas and it strives to start an international discussion on the significance of the pedagogy of vocational top expertise. Developing vocational top expertise is a common challenge for companies and educational institutions alike – in other words, the world of work at large. The purpose of the article collection is to inspire and encourage companies and educational institutions to create operating methods together that can optimally elevate the competence of the companies' staff, future employees, and vocational teachers and supervisors to the top level. At the same time, we encourage the readers to identify and remove obstacles to innovativeness and creativity, both at the level of the organisation and the individual.

The pedagogy of vocational top expertise, as well as pedagogy in general, needs to be developed continuously. We hope that this collection of articles will encourage international discussion. We believe that in the near future, increasing numbers of case studies on effective pedagogical methods for developing vocational top expertise will be available for all of us to use and improve. I would like to extend my warmest thanks to all the authors and the numerous people at Häme University of Applied Sciences and in stakeholder organisations who contributed to the publication of this collection.

Hämeenlinna, 2 September 2016

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Dear reader,

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Study visits to introduce new methods in promoting of vocational excellence, coaching and training. Study visits can include elements of getting familiarized with the Finnish vocational training and skills competition activities. Duration of study visits vary from one to two weeks.

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Developing top expertise is the common goal of companies and educational organizations. This collection of articles, titled The Pedagogy of Vocational Top Expertise, is a sequel to the book Towards Vocational Top Expertise, which was published a few years earlier. The collection is intended for all those who guide young people towards higher levels of vocational competence. It is particularly suitable for coaches and experts involved in vocational skills competition activities.

The articles are based on both academic research and experiences gained in development projects and practices that we have found useful. The level of the articles is as practical as possible, thus ensuring their relevance for everyday work.

Putting this work together has been professionally challenging, not least because during the writing process, the top expertise specialists in FASE had to formulate a common view and understanding of the pedagogy of vocational top expertise. However, our many discussions and meetings during the process of compiling the collection lent excellent support and encouragement for our work. For this reason, the publication above all represents our joint views, and our accomplishment and what we gained through each other's expertise during this journey are thus something we find valuable.

It is our hope that the articles in this collection will provide readers with new ideas and inspiration for guiding and supporting future top experts.

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ISBN 978-951-784-782-7
ISSN 1795-4231
HAMKin julkaisuja 3/2016

e-julkaisu
ISBN 978-951-784-783-4 (PDF)
ISSN 1795-424X
HAMKin e-julkaisuja 5/2016

HAMK
HÄMEEN AMMATTIKORKEAKOULU
HÄME UNIVERSITY OF APPLIED SCIENCES