

Developing Students' Working Life Knowledge and Skills at All Educational Levels

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Abstract In addition to strong subject-matter competence in their specific fields after graduating, students also need the understanding and ability to adapt to ever-changing working life, e.g., behaviour as a member of a work community, employer and employee roles, legislation, and good practices. The project *Prepared for working life!* aims to develop students' working life knowledge and skills at all educational levels, and by doing so, also improve the quality of working life in Finland once students begin to work with their knowledge and skills. The project utilises virtual learning tools and has created nationally usable study modules that prepare young adults for their future working life. In Oulu, all three educational levels (university, polytechnic, and vocational college) have collaborated to ensure that the projects succeed regionally. The Oulu project team has also cooperated with the HSEQ Training Park, a new and unique concept, in developing occupational health and safety and well-being at work education.

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1 Introduction

In addition to strong subject-matter competence after graduating, students also need the understanding and ability to adapt to changes in their working lives. Working life skills and knowledge about well-being at work will help them to participate in and contribute to their work community and organisation and maintain their own well-being. The European Union, in its report “Mainstreaming occupational safety and health into university education”, strongly recommends including and finding the means to teach occupational health and safety issues within universities (EU-OSHA, 2010). Reasons for learning, while still in education, the safety, health, and well-being issues related to one’s working lifetime can be enumerated as (1) humanitarianism, (2) the law, and (3) cost, like Brauer (1994) did.

The Finnish Institute of Occupational Health conducted a national study related to young people, schools, and the beginning of working life (Nykänen and Klemola, 2015). The researchers described the need for occupational health and safety teaching in this way:

Young workers have a higher risk of occupational accidents compared with older workers. Experiencing occupational accidents or developing work-related disease early in the career may influence young workers’ work participation for the rest of their careers. Young people entering working life need to be equipped with effective behavioural strategies and skills that support their occupational safety and well-being.

The University of Oulu conducted a field study in Northern Finland’s workplaces on the experienced needs of work sciences education. The study’s message was clear: young experts moving into work from university need to be “prepared for working life” (Yrjänheikki and Majava, 2015); Table 1 presents the opinions of different key groups in the workplace.

Table 1 Key groups’ opinions of teaching work sciences (N = 96) (Yrjänheikki and Majava, 2015)

	Management (N = 44)	Occupational safety managers (N = 19)	Occupational safety representatives (N = 33)
Not necessary	0%	0%	0%
Necessary	29.3%	10.0%	16.7%
Very necessary	31.7%	25.0%	43.3%
Extremely necessary	39.0%	65.0%	40.0%
Total	100%	100%	100%

The importance of teaching working life skills has been officially recognised in Finland; the European Social Fund-funded project *Prepared for working life!* (in Finnish, Valmiina työelämään!; VALTE), running from November 2015 to October 2018, aims to develop students' working life knowledge and skills at all educational levels by producing nationally usable study modules to prepare young adults for working life. Educational institutions, led by the University of Turku, have collaborated to ensure that different perspectives are acknowledged. The institutions involved are the Universities of Turku, Oulu, Jyväskylä, Vaasa, and Lapland; the Universities of Applied Sciences of Oulu, Jyväskylä, Vaasa, Saimaa, and Turku; and the Oulu Vocational College.

The VALTE project's goals are to improve training at educational institutions in working life skills and well-being at work, and by doing so, also improve the quality of working life in Finland as the students move in to work. This study aims to explain what the VALTE project has done nationally in Finland, and especially in Oulu (Northern Finland) to respond to the need to develop students' working life knowledge and skills.

2 VALTE Project Nationally

Every educational institution participating in the VALTE project produces one or more study modules. The study modules aim to improve students' knowledge and competence in working life skills to ensure that they know how to act and react at work and when facing working life issues, and are able to work healthily until retirement. The study modules give practical methods to develop, control, and manage occupational well-being at the personal, team, and organisational levels. The themes of the modules include, for example, health and well-being, occupational safety, transitions from education to work, equality and diversity, and management and organisation.

The study modules created during the VALTE project will be accessed through ViLLE, a collaborative education platform developed by a team of researchers at the Department for Future Technologies of the University of Turku. From ViLLE, educational institutes can choose the modules they need, which can be taught face-to-face or with minimal contact between teacher and students as ViLLE allows the modules to utilise virtual learning, which is independent of time and place. The study modules exploit gamification, with exercises and animated games. Most of the materials will also be on the VALTE project's website to allow workplaces to use them, as well as students. The materials on the website include participatory exercises to be used for team and development activities.

The project has organised development days amongst the 11 institutions, held in Jyväskylä, Turku, Tampere, Helsinki, and Oulu, and five public seminars. Two

VALTE seminars have been held in Turku, two in Oulu, and one in Jyväskylä, on themes including future working life, working life knowledge and skills, occupational well-being and safety, and education in working life skills. The participants have represented companies and other workplaces, students, teaching staff, developers, authorities, researchers, and research institutions from various parts of society. In addition to organising the seminars, the project's researchers have participated in conferences and other educational events.

The University of Turku has also conducted surveys on working life skills for students, human resources personnel, and graduates. In the last months of the project, the study modules will be finalised and shared with institutions for use outside the project, a closing ceremony held, and the final report written.

3 VALTE Project in Oulu

3.1 University of Oulu

The University of Oulu is an international science university founded in 1958. Its eight faculties are from the fields of biochemistry and molecular medicine, education, humanities, information technology and electrical engineering, medicine, science, technology, and the Oulu Business School. The university has approximately 13,500 students and 2,800 employees (University of Oulu, 2018). In the mid-1970s, the university began to widen its work science teaching, and research increased in the late 1980s when a professorship was created in the Faculty of Technology. The Well-being and Productivity research team, from the Industrial Engineering and Management unit in the Faculty of Technology, participates in the VALTE project.

The five-credit study module created by the University of Oulu for VALTE is *Safety of the working environment – the key to well-being and productivity*. Themes include safety management, law and directives, responsibilities in different roles, working conditions and environment, ergonomics, risk assessment, safety measurement, and the benefits of safety. When the study module was piloted, students visited the Health, Safety, Environment, and Quality (HSEQ) Training Park – a safety innovation where visitors can be trained on a practical level to perform safely at work and manage and utilise effective and efficient good practices tailored to individual abilities and limitations.

The HSEQ Training Park is located in Oulu, covers an area of 1.2 hectares, and provides more than 20 training points that are full-scale working demonstrations of building and infrastructure construction, manufacturing, energy, rail transport, and industrial services. The training points consist of full-size representations, workstations (mock-ups), and work-task scenarios with tools and equipment (Reiman *et*

al., 2015, 2017). Regarding the HSEQ Training Park, an escape room game is also under development. Problems presented at each training point are related to that point's themes and require numerical and verbal reasoning.

In addition to these contributions, the University of Oulu piloted the study module *Professional interaction and development of the professional identity*, created by the Oulu University of Applied Sciences. The module was tested with students from the university, and feedback gathered from the students and the teacher.

3.2 Oulu University of Applied Sciences

Oulu University of Applied Sciences (OUAS) is one of the biggest universities of applied sciences in Finland. OUAS offers studies in the fields of business, engineering, health and social care, information and communication technology, media and performing arts, and natural resources. OUAS has 9,000 students and over 600 employees and offers bachelor's and master's degree programmes, professional specialisation studies, pedagogic studies at the School of Vocational Teacher Education, and Open University studies, as well as supplementary training.

OUAS has planned and piloted the modules on successful career and professional interaction and identity for the VALTE project. In the study module *For a successful career* (two or three credits), students are taught the demands of working life, learn to design their careers, develop self-knowledge and readiness as a future applicant, identify and market their own know-how, prepare to answer job advertisements, and practice for job interviews. The main approaches of the study module are group work and peer evaluation.

In the study module *Professional interaction and development of the professional identity* (three to five credits), students learn to identify the basic skills of professional interaction, examine their own interactions, become acquainted with their strengths, and strengthen their professional identities. The pedagogic background of the study module is positive learning and pedagogics, and the essential components of the implementation are interaction and reflection. The study module was planned and piloted in cooperation with the University of Oulu.

OUAS is also planning a model to support professionals at the beginning of their careers, in cooperation with managers and young professionals. The model aims to teach skills to manage and promote well-being at work and will be piloted in spring 2018 by managers in health and social care.

3.3 Oulu Vocational College

The Oulu Vocational College (OSAO) is one of the biggest vocational schools in Finland. OSAO is a multidisciplinary vocational college that trains professionals for the labour market and provides up-to-date education in line with the needs of working life. OSAO is one of the leading vocational colleges in Finland, with 14,000 students and 935 staff. Cooperation with the business community is routine and includes on-the-job learning, skills demonstrations, company personnel training, and joint development projects. All OSAO education sectors and units offer services to the public.

For the VALTE project, a group of teachers developed online studies that prepare students for working life and which include knowledge and exercises on employment contracts, working hours, contractual skills, and workplace rules. Project workers also visit companies and workplaces to identify working life skills; this approach is one form of the cooperation between the workplaces and education development. OSAO also collaborates with the University of Oulu and OUAS.

3.4 Collaboration in Oulu

In Oulu, all three educational levels – university, polytechnic, and vocational college – have collaborated in the VALTE project, with monthly meetings of the key project teams, two public seminars for different stakeholders of the working life and students, and collaboration in creating the study modules themselves. The module *Safety of the working environment – the key to well-being and productivity* was tested with a small group of students from the University of Oulu and OUAS. The module *Professional interaction and development of the professional identity* was originally developed at OUAS, and further developed after it was piloted at the University of Oulu.

The Oulu project team also cooperates with the HSEQ Training Park. Students have visited the HSEQ Training Park in multidisciplinary groups consisting of students from all three educational levels. Studying in multidisciplinary groups promotes understanding of others' professional knowledge and skills and strengthens cooperative skills. Most companies employ young adults from all three education levels and the collaboration of all students is therefore a new, powerful tool in teaching working life skills.

The first seminar, *Prepared for working life?* was held at the University of Oulu in November 2016. The 66 participants represented companies and other workplaces, labour market organisations, students, teachers, researchers, developers, and other interested groups, such as authorities and research institutions, from many parts of society. At this seminar, companies and industrial employers' associations

noted the strong commitment of the international companies, and practical models and achievements in safety management were emphasised. It was also stressed that the work community skills already learned at educational institutions are of significant importance when seeking employment.

The themes of the afternoon workshops were *The attraction of work*, *Visions of the collaboration of three educational institution levels in working life studies*, *Occupational safety today and tomorrow*, *What working life skills are expected from recent graduates? – Industry and services (public and private)*, and *Professional interaction at work in the 2020s – frictionless communication*. The discussion revealed several important viewpoints, such as the importance of students forming an affirmative approach to the workplace to bring out the strengths of their educational institutions and themselves, and having a good attitude, motivation, and the ability to cope with changes in working life. A further recommendation was to link VALTE matters to worldwide sustainable development and corporate responsibility.

The second seminar, *Students to a successful career*, was held on the OUAS and OSAO campus in October 2017. The 80 participants were students, experts in working life, and teachers. The seminar programme consisted of an introduction to the steps to a successful career, panel discussions, and workshops. A panel discussion featured participants from different stages of career and working life, including students, an entrepreneur, a manager and a chief learning officer. Brave choices and actions, networking, and the meaning of attitude were emphasised in the panel discussion.

The themes *The ABCs of working life skills*, *The flow of work*, *Working life skills as a part of studying* and *How to create a workplace of our dreams* were considered in the afternoon workshop. Three important working life skills were raised in *The ABCs of working life skills*: attitude, such as positivity, reliability, honesty, and kindness; cooperative skills, such as communication skills and following common rules; and individual ability to learn and develop. Other viewpoints included the importance of studying working life skills to cope in the workplace, developing versatile social skills, and knowledge about responsibilities.

In the final year of the VALTE project, the Oulu project team aims to pilot and finalise its study modules, strengthen the cooperation between the three educational levels, organise a seminar for teaching staff, and further develop the use of the HSEQ Training Park in studies.

4 Discussion

The VALTE project aims to develop students' working life knowledge and skills at all educational levels and in all fields. This development is important to ensure

long careers and a good quality of working life through understanding of the employer-employee roles and rules. With good working life skills, students can become professionals who maintain their well-being, promote the well-being of their organisations, and work safely. They can also provide better leadership for their subordinates and company as well as fellowship with their peers.

The teaching of working life skills should occur over academic years. Students' knowledge should mature, and they need to learn to understand different operational models and recognise the situations in which to apply them. This also helps in engineering asset management, to which safety and managerial skills are related.

Developing education in working life skills is also in the best interests of companies, industries, and other workplaces as good education creates a skilled workforce. Agreement with this point was seen in the seminars organised by the Oulu project team, since there were participants from several industries including technology, construction, trade, municipalities, unions, and white-collar workplaces. Interest in the highlighted themes, such as attitude and cooperation skills, showed that the VALTE project is topical.

The cooperation between 11 educational institutions in the VALTE project ensures that the main points and different perspectives relating to working life skills are acknowledged in the study modules. The results of the VALTE project are not yet measurable; measurement of the effects on students' development during their studies and their actions in working life requires longitudinal monitoring. However, the students who participated in pilot courses have given positive feedback. Participants in the *Safety of the working environment – the key to well-being and productivity* course of the University of Oulu were clearly satisfied and expressed their understanding of the holistic view of occupational safety and health and their knowledge of how to recognise and prevent risks.

The VALTE Oulu project team's activities, with study modules, seminars, and strong cooperation between educational institutions at three levels, are developing students' working life skills both regionally in Oulu and through the use of study modules nationally in Finland. Due to the professorship established at the Faculty of Technology of the University of Oulu, teaching in this field is frequent and expanding. OUAS and OSAO also have long traditions of collaboration with the professional world, and the VALTE project has sharpened working life skills education even further.

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