



Building Educational Cooperation in Smart City

Work-based Learning Report

Nordplus Horizontal 2018

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Abstract

This project is formed around the common interests of participating educational institutions to provide qualified graduates to the labour market, taking into account the real needs of enterprises to perform in fast and flexible ways. The differences between what has been taught in schools and what kinds of skills enterprises actually need has grown over time, resulting in higher unemployment and enterprises that still lack a skillful workforce.

The overall aim of the project is to support the creation of a new multicultural network of knowledge transfer and innovation between educational institutions, enterprises and sector organisations, and to further support the close cooperation between these groups in Nordic and Baltic countries.

This fully corresponds to two general objectives of Nordplus 2018-2022 program which are:

- support, build on, reap the benefits of and promote innovative products and processes in education through the systematic exchange of experiences and good practice;
- contribute to the development of quality and innovation in the educational systems for lifelong learning in the participating Nordplus countries through cooperation in education and training, as well as cooperation with the labour market on development projects, exchange programmes and networking

Objectives

As partners from educational institutions experience a growing need to support students and teachers, there has been a related push for cooperation and sharing of ideas between these groups. The networking activities of the present project have been organised with this in mind. Particularly from the perspective of innovation, learning is of critical importance, taking place in horizontal networks of educational institutions of different levels, enterprises, sector organisations and others.

The cross-sectoral dimension of the project is related to the choice and participation of partners, extending from different levels within educational organisations to businesses and sector organisations. This kind of partnership is vital as the main objective of the project is to find and describe flexible ways, study methods and/or curricula development for meeting the rapidly changing demands of enterprises towards the specific skills of graduates. The economic

sectors concerned are differing from country to country, but the ways to reach cooperation with businesses in order to enhance innovation in teaching methods or environments, could be similar or adaptable to different sectors. Therefore, it is crucial to examine today's process of cooperation with enterprises within different partnering countries and cross-sectoral educational institutions to find suitable model(s).

The concrete objectives are:

- thematic reports on three themes of the project - work based learning, entrepreneurship and IT/ digitalisation which entails both methodological part as well as a collection of case studies from partnering countries
- study tours implemented in these themes to evaluate and complement the reports with the results of study tours and discussions
- a handbook that entails the end results and findings of the three thematic reports;
- dissemination of handbook via events, web and other media means;
- established network that shares knowledge and works together to improve the cooperation within the network partners as well as outside.

The Estonian Entrepreneurship University of Applied Sciences takes a role as project coordinator. The responsibilities for work packages are shared between partners so that each partner has a specific role and no-one is a “silent partner“ in the network. Other partners are participating in activities according to their specific interest and/or experience. Participating in the discussions, making presentations and being part of dissemination process are helping to achieve the project aims and bring extra value to the project outcome.

This project is innovative in the way that it goes beyond traditional university-enterprise cooperation. It extends also to other levels of the educational sector and sectoral organisations in order to enhance innovative solutions arising from different setups within the network. It also involves students in the process. In addition to this, one of the themes – work-based learning is an innovative study method that has not been used extensively in the world and, therefore, the members of the network are interested to learn more about it.

The long-term influence can be seen as the involvement in education has risen, graduates are satisfied with the education as they find jobs more easily after finishing school. Enterprises are more satisfied as they find employees who are in much greater detail meeting their real needs towards the skills of employees.

International cooperation in this project adds value because:

- It enables participants to experience different cultures and environments, thus the participants (especially students) get a sense of accomplishment in international scale in the longer term. It also enables the exchange of ideas, teaching methods, and learning and have cooperation with companies (lecturers).
- From students point of view, they see innovative companies and their working environments, learn more about different themes and meet students from different countries, who share the same interests.

Development of areas concerned with intercultural and cross-cultural understanding and communication within educational and academic contexts related to new and innovative work cultures of enterprises.

Long term, it offers excellent opportunities for the Ülemiste Smart City campus companies to network and exchange knowledge together with Nordic and Baltic schools students, lecturers, and experts. The long term influence can be seen as the involvement in education has risen, graduates are satisfied with the education as they find jobs more easily after finishing school. Enterprises are more satisfied as they find employees who are in much greater detail meeting their real needs towards the skills of employees.

The project activities are focusing on three main themes:

Entrepreneurship - participating in this project can offer a clear surplus value for students and lecturers, who can meet the industry key players in Estonia, with the example of Ülemiste Smart City. The project brings together different parties (employers, students, teachers, administrators and other experts from partner countries) to exchange experiences and knowledge and build up stronger network where mutual expectations, possibilities and patterns are more clear. Another side of this topic is employability. It is a common goal for all parties. The study visits will broaden the understanding of how the enterprises work (in Estonian example), what are the different modern and innovative working cultures, what are the most urgently needed skill sets that enterprises need from their employees etc. The specific sectors for study visits will be agreed during the kickoff meeting.

Digitalisation – Estonian Entrepreneurship University of Applied Sciences has a very strong curricula within IT/startup studies. Within this package the methods and possibilities are

explored of how IT/digitalisation is working within enterprises of different sectors or within the activities of different subjects (e.g. finances). The solutions (both products and/or services) of Estonia as a digi-country based on e-Estonia showroom are explored and discussed among the partners. It may entail also visits of enterprises with specific focus. Thematic report and study tour are organised within this theme.

Work-based learning – work-based learning is an innovative and rapidly growing study method of matching the skills taught in educational institutions with the new requirements of enterprises. There are very few (if any) guidelines about how to organise such cooperation, both from the point of view of educational institution and enterprise, e.g. what can be the obstacles and what could be the possible solutions to overcome them, how universities can approach the enterprises or vice versa, what are the benefits to both sides etc. Thematic report and study tour are organised within this theme.

The project results will be summarized in a publicly available electronic handbook. The handbook is not only a collection of the results but serves as guidelines for other educational institutions and enterprises beyond current network about how to cooperate to achieve the best results in terms of up-to-date skills of graduates.

For more about the project: www.euas.eu/nordplus2019

Partner Institutions

Coordinating institution:

Estonian Entrepreneurship University of Applied Sciences (EUAS)

Website: <https://www.euas.eu/>

Facebook: <https://www.facebook.com/euas.eu/>

Partner institutions:

University of Akureyri (UA)

Website: <https://www.unak.is/>

Facebook: <https://www.facebook.com/haskolinnaakureyri/>

Twitter: @haskolinn_ak

Vilniaus kolegija / University of Applied Sciences (VIKO)

Website: www.viko.lt, www.vvf.viko.lt

Facebook: <https://www.facebook.com/viko.vvf/>

Twitter: @vikolt

Vidzeme University of Applied Sciences (ViA)

Website: <http://va.lv/lv>

Facebook: <https://www.facebook.com/VidzemesAugstskola/>

Twitter: [@vidzaugstskola](https://twitter.com/vidzaugstskola)

Oulu University of Applied Sciences (OUAS)

Website: <https://www.oamk.fi/fi/>

Facebook: <https://www.facebook.com/oamk.ouas>

Twitter: [@oamk_ouas](https://twitter.com/oamk_ouas)

Norwegian University of Science and Technology (NUST)

Website: <https://www.ntnu.edu/>

Facebook: <https://www.facebook.com/NtnuInternational>

Twitter: [@NTNU](#)

International School of Tallinn (IST)

Website: <https://ist.ee/>

Facebook: <https://www.facebook.com/InternationalSchoolofTallinn/>

Mainor AS

Website: <http://mainor.ee/>

Facebook: <https://www.facebook.com/EEKMainor/>

Tampere University of Applied Sciences (TAMK)

Website: <http://www.tamk.fi/>

Facebook: <https://www.facebook.com/tampereenamk/>

Twitter: [@TAMK_UAS](#)

Aalborg University (AAU)

Website: <https://www.aau.dk/>

Facebook: <https://www.facebook.com/AalborgUniversitet/>

3. Work-based Learning

3.1 Defining Work-based Learning

Neither working or learning are the same as they were even 20 to 30 years ago. The development of technologies during the fourth industrial revolution and the new global economy have undoubtedly had an impact on the organisation of work and employment (Guile & Unwin, 2019; Schwab, 2017). Organisations have reacted differently to these changes, and this in turn has impacted the ability of organisations to create effective environments for learning (Unwin, 2017; Felstead et al., 2009). At the same time, educational institutions (HEI, VET Schools etc, hereinafter as school) have been under pressure to meet the needs of employers and the wider economy (Wall and Jarvis, 2015). Employers are therefore concerned about the perceived quality of graduates leaving schools and entering the labour market. Rising dissatisfaction with regard to poor graduate-work readiness and transferable skills has been problematic (Archer and Davison, 2008; Hughes et al., 2013). Work-based learning is one possible alternative which can be seen as a solution to challenges facing both schools and companies. Madeleine Atkins (2016) argues that apprenticeships present a powerful means to meet the rising demand for higher level skills, but this also means that employers need to proactively engage with higher education. Atkins further notes that employers and schools will further need to develop and adapt to new ways of working together, while also exploring new methods of teaching and learning.

To define the WBL, it is important to understand first that it contains two aspects: (1.) learning and its linkage with the workplace and (2.) necessary competencies for the particular job/profession. As Elmgren and Henriksson (2014) emphasise, the learning process itself increases one's knowledge, so it can be done by any individual engaged in any activity or environment, either alone or together with others (Fjellström & Kristmansson, 2016). From the perspective of schools, any WBL activity can thus benefit students to be trained with the skills required by the labor market (CEDEFOP, 2013). In general, WBL can help develop tacit knowledge of students, to mimic behaviors and learn decision-making processes, as well as incorporate values and culture that lead to actions (Moon, 2017). Traditional WBL (eg. apprenticeship) focuses primarily on the transmission external knowledge or techniques (Lave & Wenger, 1991) and typically combines “work with study” (HM Government, 2018). Thus for successful WBL, learning occurs both in a formal educational setting (such as a classroom or lecture theatre) and in the workplace.

Based on the above definition and background theory, there are two main rationales for developing the WBL. Firstly, to provide young people and adults with the job-specific and generic skills that employers need, providing young people with a soft landing from school to work (CEDEFOP, 2013). Secondly, to develop relevant talent through an alternative to traditional academic programmes (Jeffrey, 2016). If the first rationale focuses more on the interests of educational institutions, then the second pertains more directly to the interests of companies participating in WBL activities. It is clear that the schools and companies must cooperate in creating supportive, work- and learning-oriented environments for students to gain success – i.e. talented employees for the company. Learning in workplaces is an ongoing trend (Billett, 2006) and the support and guidance provided in the workplace specifically can be a critical aspect of learning and progression towards full participation in the workplace community (Billett, 2001). Learning is strongly affected by the context (Metso, 2014), whether constructed in a social environment (Lave & Wenger, 1991), or involving at least some interaction with other persons (Vygotskij, 1978). Likewise, the learning gained and guidance provided through ongoing activities in workplaces, and factors (particularly goals, activities, and guidance) will all affect student's professional and academic development (Fjellström & Kristmansson, 2016). WBL is in other words situational, which means that learning in a work context helps knowledge transfer to real-life situations and practical application. Accordingly, WBL is similar to organizational learning in that it occurs through hands-on experiences and the transfer of knowledge in a real world context (Moon, 20).

Different learning activities, characteristics and sub-processes are involved in the full WBL process (Fig. 1) and each of these presents a range of challenges and which must be paid attention to within any WBL network, at every level.

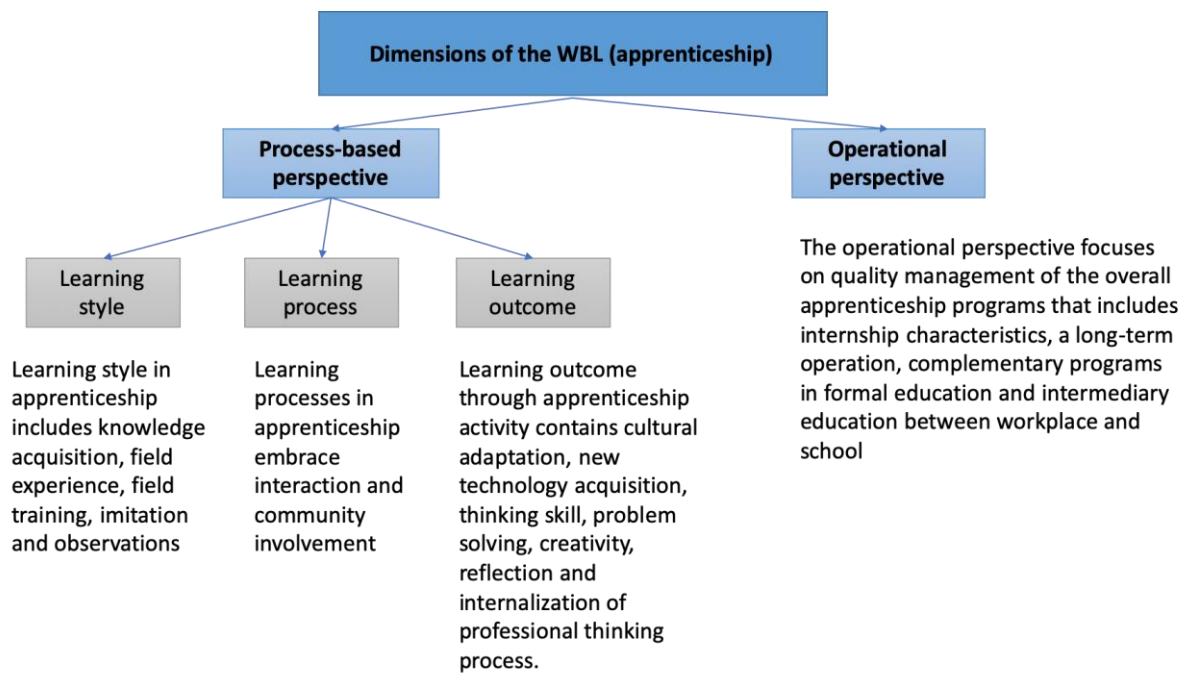


Figure 1 bases on sources: Collins et al., 1989; Jo and Lee, 1994; Kang, 1996; Casey, 1996; Barab and Duffy, 2000; Nonaka et al., 2000; An, 2009; Eurostat, 2010; Yoo, 2012; CEDEFOP, 2013; Yin et al., 2013; Gu, 2014; Lee et al., 2014; Kim and Lee, 2015.

Work-based Learning Challenges

The aforementioned aspects of WBL and the three-parties-collaboration (students-schools-companies) give rise to an awesome amount of challenges and opportunities that the parties need to deal with in order to achieve the WBL benefits. The most discussed party in WBL activities is typically the company and its problems in organizing the work when “hiring” the student-apprentice. The range of challenges varies from selecting the talented student (Bhatanagar, 2008) to possible loss of productivity of key members of staff during the supervision of the student (Mulkeen et al., 2017). Some authors (eg. Jansen & Pfeifer, 2017) argue that the good WBL support and meaningful use of apprenticeship training in the company can bring both short-term benefits (resulting from the work apprentices perform during the training period) and post-training benefits in the form of future competent employee performance. To gain both, the appeal to – and selection of – productive apprentices is crucial for a positive cost-benefit relation of WBL activity. The company’s challenge is to not only find talented students who have the ability to explore and generate innovative ideas and the courage to implement them. The company must also motivate their WBL students and direct their activities in a way that matches organizational strategy, goals and culture.

Learning-oriented culture inside the company is one of the key preconditions for successful WBL (Cortini, 2016), because only then can the company and student develop together and reap the benefits from WBL. A further prerequisite for learning is access to goals and knowledge that are difficult or impossible to attain alone (Billett, 2001); the organizational culture should not only support learning, but also teamwork. The implicit expectation is that managers will need to develop and adopt new approaches in order to support and manage both students and colleagues as they progress through WBL programmes, combining work-related study with full-time employment (Rowe et al, 2017). In creating a culture of learning, a good supervisor is as important as talented students and general organizational culture (Mikkonen et al., 2017). Supportive workplace supervisors trust their apprentices and enhance their self-esteem by praising them when they have carried out their work duties well (Chan, 2014); they provide positive support in cases of complexity, encouraging student self-development, enabling the apprentices to develop, and enhancing their network within the workplace, thereby developing further opportunities for learning (Minton & Lowe, 2019). The student-apprentice is potential talent for the company, so a focus upon talent management processes and learning on the job remains a distinct employer responsibility (Rowe et al., 2017).

Provision of a workplace supervisor, creation of a culture of learning, allowing employees school as well as work time – these and other WBL supportive activities all bring cost to the employer. Some employers view supervision as a loss of productivity from an experienced member of the team, as supervisors need to pass on knowledge and skills to ensure that effective apprentice-learning takes place (Minton & Lowe, 2019)

The main challenges facing schools are connected, first, with the range of competencies the student-apprentice needs in order to be a valuable employee in the labor market and, second, with the curriculum design itself, where the WBL is focused – i.e. how best to match school-based and work-based studies in order to produce a holistic and meaningful set of necessary competencies. Several sources (eg. Tynjala, 2008) argue that schools do not sufficiently provide students with the relevant transferable skills necessary for work-place success. Although schools that explore work-based learning approaches and partnerships with employers tend to offer a range of valuable insights and perspectives (Major et al., 2011), it is not always clear which are the most valuable competencies students need to achieve, primarily due to constant changes in skill standards. Focusing solely upon short-term technical skills which are too often based upon narrowly focused and outdated curricula (Kossek and Perrigino, 2016; Schwab, 2017), brings poor results – poor performance of the student-apprentices,

dwindling retention and engagement, and graduates ultimately blaming companies for insufficient training and opportunities (Butler and Felts, 2006). Many authors state that companies prefer to choose students-apprentices who can reflect, analyze, critique and synthesize work-based experiences, and develop themselves accordingly (Harvey, 2003). Such students have the ability to think and work “outside the box” having embraced lifelong learning and development of conceptual and analytical thinking skills (Beardwell and Claydon, 2007). Moreover, schools are similarly responsible for managing the quality of the student’s learning experience, including within the workplace (Minton & Lowe, 2019). When professional competencies can be taught in the workplace, schools likewise need to prepare students for WBL and provide them with general, transferable competencies like problem-solving, as well as oral/writing/IT competencies which have a significant positive influence on productivity in commercial occupations (Jansen & Pfeifer, 2017), and which will in turn be further developed in the workplace. Anderson et al. (2012) notes that several schools have developed study programmes that are constructed to meet the needs of a particular company and linked to professional standards, thus integrating workplace learning activities within an academic study programme. A good WBL study programme integrates pedagogical approaches with professional competencies and transferable skills (Rowe et al., 2017). It is worth mentioning again that WBL study programmes need to adopt an approach of experiential and reflective learning, marks of quality, work-based learning designed in collaboration with employers (Smith and Paton, 2014).

Student-apprentices will furthermore confront challenges while participating in WBL activities. Most prominent among these is the student’s ability to cope with working and studying at the same time. But no less important are self-management skills, which express themselves in the student’s self-determination, independence and autonomy required to fulfil his or her role as a student and future employee (Mikkonen et al., 2017). Behavioural characteristics that predict success in a WBL environment include motivation, resilience, and a low susceptibility to stress (Jansen & Pfeifer, 2017). Students may, on the other hand, suffer if their work-based supervisor has him or herself developed poor work habits, and especially if personal and professional development are not already key features of the organisational culture (Tanggaard, 2005). Billett (2016) emphasized how “rather than viewing WBL as being just learning ‘on the job’, it is characterised as being mediated by learners themselves, rather than the kinds of activities and interactions through which others (e.g. teachers and practitioners) directly attempt to mediate that learning (e.g. teaching and direct guidance).”

In fact, the biggest challenge facing the schools and companies in implementing WBL is the ability to cooperate and agree on goals and the work-study balance needed for successful collaboration and the attainment of those goals. To overcome the above mentioned challenges all schools and companies will thus need support in their efforts to organise and implement WBL.

3.2 Aim, Objectives and Programme

The 3rd study tour was organised on 14th-16th of October 2019 in Ülemiste City, Tallinn, Estonia. The aim of the study tour was to share the Nordic and Baltic work-based learning (WBL) experiences from different universities and companies. With this in mind, the suggestions for activities aimed at each target groups (students, universities and companies) were made in order to produce the best possible outcome. A number of Ülemiste Smart City company/organisation visits were organised, along with a job-shadowing day, presentations made by universities/companies and a workshop where best practices were exchanged between experts, students, lecturers and company representatives.

The objectives:

1. To provide students and lecturers opportunity to meet companies and ask questions direct to experts in their fields.
2. To hear about different international work-based learning cases/experiences.
3. To participate in a work-based learning workshop, inclusive of teamwork.

In accordance with the stated objectives, three main target groups were involved in study tour activities: students, lecturers, and business companies. More than 40 students, teachers and entrepreneurs from six different countries attended. The programme was planned specially to present various activities for all three target groups (see Study Tour Programme, Annex 1).

During the first day the students and lecturers received welcome words from the moderator of the Mainor Study Tour, Mrs. Katrin Sulg, and the rector of Estonian Entrepreneurship University of Applied Sciences (EUAS), Prof. Mait Rungi. The Ülemiste City introduction was made by Mainor Ülemiste Customer Experience Manager, Mr. Teet Raudsepp. A representative from Innove, Development Manager for Work-based Learning, Mrs. Piret

Lilover, presented an introduction to work-based learning in Estonia: What is work based learning? What opportunities does it present and how is it working in Estonia? Apprenticeship training in Estonia (VET) consists: 1/3 of the curriculum is delivered at a VET institution with an emphasis on theoretical training, and 2/3 at an enterprise offered at EQF levels 2-5, the same curriculum as for school-based programmes and with the same learning outcomes and final exam (either a school exam or professional qualification exam). The total study duration is from three months to three years. VET institutions cooperate with employers to design curriculum modules and an implementation plan.

On the second day students and lecturers participated in company visits and a Job-Shadowing Day at Ülemiste City companies (Magnetic MRO, Tallinn Airport, Zone Media, Healthcard, Securitas Eesti, Ülemiste Health Centre). After lunch there was an Open Feedback Discussion about what students and lectures experienced during said company visits. An international group, G4S, which specialises in providing security services, shared its experience implementing a WBL programme in collaboration with Estonian educational institutions.

On the third day a group visit was organised to The North Estonia Medical Centre where students and lecturers had a tour of the hospital and received an overview of how the worked-based learning programme for nurses has been running there. After that the international group turned back to Ülemiste City and the Work-Based Learning Workshop was taking place together with 5 key speakers. After the event EUAS Rector Mr. Mait Rungi gave diplomas to all the participants.

Company visits, Job Shadowing Day ¹

The Ülemiste City company visits and job-shadowing day for lecturers and students took place in following companies: Magnetic MRO, Tallinn Airport, Zone Media, HealthCard, Securitas Eesti, Ülemiste Health Centre, G4S, The North Estonia Medical Centre.

After the the company visits and job-shadowing day the organisers of the event carried out an open feedback discussion among lectures, students and company representatives. Participants were given two questions: 1. What did you learn? 2. What was the highlight for you?

¹ Prepared by using Report of the Open Feedback Discussion made by Katrin Eha - EUAS

Please find a summary of the answers received, below:

	What did you learn?	What was the highlight for you?
HealthCard	Great, a lot to learn, amazing. Health app, sporting experience. Very inspiring. How to do 14 hours sport? Medical, genetical, physical properties - data analysis and making conclusions.	The person has started ski jumping (person who had never ski jumped before). Voluntary work during different events. Organizing events with volunteers. It's good to be a volunteer and help to make things happened.
Zone media	Had learned a lot. Was surprising - the system. Interesting. There is a big difference between what is on paper and what is real. The structure was inspiring. The area was interesting. Different examples, areas they had in mind, haven't heard about them before.	Good company with more than 20 years, different from start up. See the new place and areas.
Securitas Eesti	Different assets. Hance to do by himself something. Great learning in the field, haven't had a lot of knowledge before. To solve the problems together. To hear how HR manager works - the system, how the system works, how they track etc.	IT solutions, the schedules in the programme, meet other HR people, was interesting and useful. Was nice to get to know about HR daily work.
Tallinn Airport	Different job positions, training programmes. Expanded the view how airports work. The procedures, roles and rules, the communication between different companies. Impressive equipment.	The tour, background and the history, baggage handling, to see behind the scenes. To see what happens after you drop your luggage. Machines - for example cleaning snow. Highlight – entire tour! Also job opportunities / internship etc. To see what happens if things don't work smoothly.
Magnetic MRO	Being close to an aircraft maintenance company, getting to know the system, the textures, different fabrics, sustainability, biometric signatures - new things, new technologies. To communicate the customers, the maintenance. Using technologies. Was interesting how difficult was to get in. How to organize inventory, the system. Surprised - many things are done by hand.	Whole process, running e-platform. To see those big machines working. Opening the eyes from different perspectives. Maintenance things. Challenge how easily track.

In summary the international students and lectures were very thankful of the journey they have had in different types of companies, having learned a lot and being inspired by the job-shadowing day as one highly effective form of work-based learning.

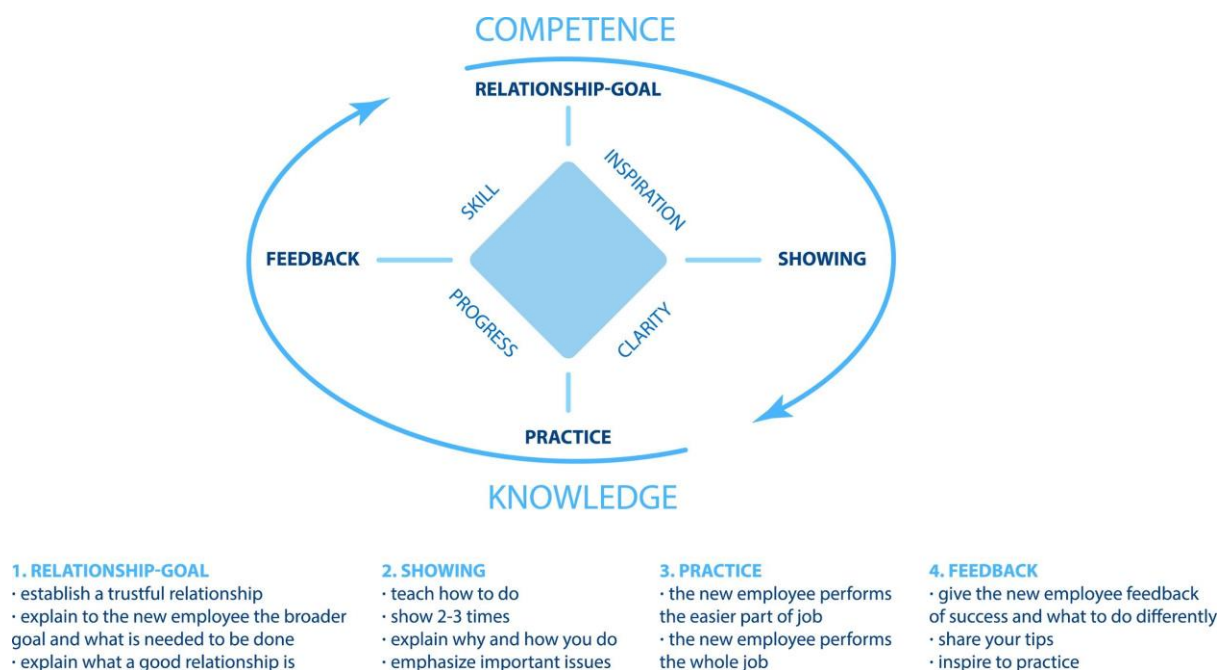
In addition to the job-shadowing day there were two companies that made a presentation to the whole international group regarding the way work-based learning is carried out in G4S and The North Estonia Medical Centre.

G4S - HR manager Indrek Sarjas gave a presentation about how their company have run a work-based learning programme: the G4S Security technicians guidance programme. G4S is an international group which specialises in providing security services. See the company introduction video here: https://youtu.be/_pyNzEC4FXY . The issue was that, in Estonia, three years ago, nobody was teaching security systems, yet the need for those security technicians was rising. The company understood that it was too expensive to teach personnel individually, so they organised a WBL programme and implemented it.

The G4S WBL programme was advertised as follows:

- We sign an employment contract and pay you for your time.
- It's practical - you learn exactly what you need in your daily work.
- You will be guided by the best G4S professionals.
- Teaching lasts only a year - only lectures are required at school.
- You can seamlessly combine your work with your studies, and work time is included in your studies.
- The study ends with a professional exam and is free for students.
- You can develop further within the company and gain new knowledge.
- Get some of the sporting opportunities through the G4S Sports Club.
- You will receive the same benefits and benefits as any other student during your studies.

G4S used Technician Guidance Model below:



In summary the G4S HR manager, Indrek Sarjas, explained that at first the people who joined the programme did not understand what they were learning or why, but in the end they did not want to leave and simply remained working for G4S. He recognised it is a successful programme and said the company will continue to use it.

The North Estonia Medical Centre is one of the top healthcare providers in Estonia. As a regional hospital, it has the highest-level competency to provide specialised medical care. See the web here: <https://www.regionaalhaigla.ee/en>

The international Nordplus programme students and lecturers had a tour of the hospital. Mariken Ross, the Head of the Department of Hematology, introduced the work that nurses perform everyday and talked about the training programmes. Aleksandra Sandre, the Nursing Manager in the Hematology Department, introduced work-based learning as key to her becoming the first specially-trained nurse in the hospital.

3.3 Workshop

The workshop “Different Practices of Work-based Learning: how to prepare students to be better specialists and what can universities and employers do?” was held on 16th of October 2019 at the Estonian Entrepreneurship University of Applied Sciences. It was moderated by Helna Karu-Baher, SA Innove, who also gave a summary presentation.

The workshop itself was divided into two sessions. In the first session there were 5 key speakers from Denmark, Finland, Estonia. They all shared experiences in work-based learning in their own country, whether from a university’s perspective or that of a company.

3.3.1 First Session: Key Speakers

- Aalborg University experiences in work-based learning – Mrs. Janne Bang, Teaching Associate Professor, Department of Communication and Psychology (Aalborg University).
- OAMK Labs and Incubator – Mr. Kimmo Paajanen, Senior Lecturer, Information technology, new technologies (Oulu University of Applied Sciences).
- Proakademia – Mr. Timo Nevalainen, Coach (Tampere University of Applied Sciences).
- Cleveron Akademy – Mr. Kristjan Oad, CEO (Estonian Entrepreneurship University of Applied Sciences).
- Scholarship programme at Hansab – Mrs. Anneli Laines, Area Manager (Hansab AS).

Aalborg University experiences in work-based learning

As is well-known work-based learning has been on the market for more than 30 years in Denmark. Mrs. Janne Bang said there are 5 universities that provide it in Denmark. There is a rule that if you offer an internship then it cannot be paid. Nevertheless, 95% of the students are interested in participating.

OAMK Labs and Incubator

OAMK Labs is a pre-incubator programme offering an inspired way to learn new competencies: developing, supporting and creating businesses and innovative solutions. In 2011 the well-known company NOKIA had fallen on hard times, with many NOKIA workers losing jobs. During this same period, the gaming industry was very active in the region. So the city of Oulu turned to OAMK and asked whether gaming industry employees couldn't come out of their university. The university thus decided to encourage students to found start-up companies. OAMK developed an Oulu-Based Learning Model that helps to implement work-based learning in different fields like Mobile Apps; Entertainment Games; Health+Wellness; IT; Sustainability and Green Care; the Construction Industry, etc.

See more www.oamklabs.fi

This same model has also been used internationally. See the countries below.

Oamk LABs activity around the globe



Proakademia

Mr. Timo Nevalainen gave a presentation on the theme of how to prepare students to be better specialists. TAMK has an Entrepreneurship unit, Proakademia, within TAMK. It encompasses a BBA programme in Entrepreneurship and Team Leadership and an MBA programme in

Entrepreneurship, with about 150 students, and 9 + 2 coaches. See more: <https://proakatemia.fi/en/>

In Proakatemia students learn entrepreneurship through action. Proakatemia is a community where students study entrepreneurship and team leadership. They also actively develop teamwork and leadership skills. During the studies they carry out customer projects through which they gain experience and earn money for their team enterprises. Proakatemia's wide national and international networks provide students with a range of useful contacts during their studies.

The key focus in Proakatemia is that they help students to be prepared to become better specialists as well as generalists. How? Over 3 years the student teams lead themselves through the process of having the idea of the product or service, and up until the point of having their student business up and running ready for investment. Coaches are available for them throughout, if there is a need.

Cleveron Academy

EUAS CEO Mr. Kristjan Oad gave a presentation on work-based learning at EUAS: the Cleveron Academy project. Cleveron is the innovation leader in retail click & collect pickup solution companies by developing intelligent parcel lockers and robots.



Mr. Oad introduced the Estonian Industrial Policy Green Book:

- “Several key prerequisites for a rise in added value are unmet – there is a shortage of skilled labour (e.g. developers, engineers etc)”
- “The electronics industry is developing rapidly and needs more engineers.”
- “If we wish to apply the Industry 4.0 approach, the education system must be flexible and adapt to changes.”

In the year of 2018 Cleveron CEO Mr. Arno Kütt turned to EUAS and asked whether they might prepare a work-based learning programme together. The answer was “Yes, let's do it!” So, the Cleveron Academy started with its first 20 students on September 2019.

Cleveron Academy's work-based learning programme “Robotics software development”

- Applied higher education programme, 3 years, 180 ECTS

- Work based learning: 60 ECTS internship + problem-based learning, study tasks input from Cleveron
- Applied problem-solving individually and in teams; knowledge creation in cooperation with the students
- Study rhythm: Monday-Friday at Cleveron, 50% in classroom, 50% hands-on
- Group of 20 students, divided into 4 teams
- Engaged by Cleveron as R&D teams, with actual tasks and goals. Mission: self-driving parcel delivery vehicle

Read more about the Cleveron Academy here: <https://cleveron.com/news/cleveron-will-open-a-robotics-academy>

Work-based learning at Hansab

Area Manager Mrs. Annely Laines introduced the company Hansab and explained how it offers Innovative Technology solutions for businesses: complete solutions involving consultancy, software development and integration, installation and after sales services, together with service export.

Hansab faces several challenges nowadays like:

- Wide products & solution portfolio
- Pre-sales consultation, project management and service
- Constant development of new solutions & business areas
- Specific professional knowledge needed

To face those challenges Hansab is doing regularly:

- Regular interns in Estonia, Latvia and Lithuania
- Scholarship programmes for technical / IT students
- Other activities in cooperation with schools/ students

To finance the above the company has scholarship programmes running together with universities like TalTech etc. They also have a stipendium. Mrs. A. Laines added that they are primarily looking for personality and potential from participants: general background fit as opposed to specific skills, as the company can train anyone whose motivation is in the right place.

3.3.2 Second Session: Workshop

Topics:

1. Is every company suitable for WBL? How to choose?
2. What kind of support/motivator/mentor the learning employee needs?
3. What is meant by a working student (studying and working in the same field at the same time)?

4. How to bring together the three key WBL parties (school, company, student) and start learning? How to prepare and organise collaboration?
5. What it means for a company to have an employee working and studying in the same field and at the same time? Challenges? Benefits?
6. What kind of support/motivator/mentor does the company need?

Participants were divided into 6 groups and given one of the questions above. Brainstorming was used to look for answers and to draw out ideas that could work for development in each specific area. For increasing participant inspiration before the workshop, there were also a number of short presentations regarding work-based learning in different countries.

Main statements of workshop were:

Not every company is suited for work-based learning from scratch, but any company has the capacity to become a good work-based learning environment. Work-based learning is a meaningful collaboration between parties: student, university and company. All should gain something – it is a WIN-WIN situation. In the company there should be a flexible and trustful environment, where development-minded people work, who are ready to see things from different perspectives. They should also be able to gain from new expertise, skills and knowledge that the student him or herself brings into the company and at the same time share the knowhow which already exists in the company. Why not trust students to try to solve some challenges the company is facing? Students should be given a chance to take responsibility and plan their own work, as time management is important for students (indeed, he or she has double workload while studying). It is important that goals are set clearly. Students should feel they have become a part of company's team if they are to be motivated. Company supervisors must likewise support and coach for maximum development of the student. Regular communication and feedback are very important for development (360-degree feedback, whenever possible), between the colleague/supervisor and student and vice versa; company to university; university to company; company supervisor to university supervisor and vice versa, etc.

Some questions left open for next brainstorming sessions: Shall a student be paid a salary for the time he or she is at the company? Different countries have had different experiences, which also differ company by company. The general understanding was that some remuneration creates greater responsibility on both sides. One very challenging idea was also thrown into the air: maybe students should pay for the company...

Other areas of discussion left a bit open: How to be an attractive company/future employer for students? How to be an attractive student/future employee for a company? All participants of the workshop agreed that further discussions and developments are needed to support students in becoming better specialists and future employees in fast-developing smart companies.

3.4 Outcomes

At the end of the third study tour there was a Nordplus project summary event at Oulu University of Applied Sciences where the project partners had an additional workshop to

wrap up all the experiences during WBL study tour in Ülemiste City. There, suggestions were made with regard to future activities to help students, universities and companies to work more closely and successfully in work-based learning contexts. Please find the workshop findings below.

Activity	Target Group	Goal/Expectations Why?
• Pop-Up study programmes	• Companies and Universities	• Short-cycled programmes where groups can partner and train small groups and describe practices already in place.
• Government supports lecturers to do internships in companies	• Companies and Universities	• Lecturer competency. Pay for the travel and the lecturer if in addition to the workload. A kind of sabbatical is taken to work more in the labor market.
• Experts visit universities	• Companies and Universities	• Experts go into the universities to give recommendations on how universities can improve work-based learning in the classroom.
• Experts work with the students	• Companies and Students	• Experts are working with the students to help them be more competent with work-based learning
• Hackathon	• Companies and Students/Universities	• Companies give a task to a challenge and the students work on finding solutions
• Job Shadow	• Companies and Students	• Students go into different companies to see what is happening in the workplace.
• Volunteering	• Companies and Students	• Students have responsibilities within companies. Gives good experience.
• Cross-Border Assignments	• Companies, Students/Universities, and ÜC	• A company from one country gives an assignment to students from another country.
• Community Tourism Strategies	• Students and Companies	• Students are working with strategies to help with tourism within different places.
• Real-World Application Projects	• Students	• Students work on projects that can actually be implemented into the community. Supporting action.
• Hiring Process	• Students and Companies	• Students went to companies and worked on the process for how companies should hire. From the advertisements to interview

		questions. Students created all of the documentation for hiring within a company.
• Audit Book	• Students and Companies	• Students go into companies and audit in an informal way. Feedback is given to the companies and companies can decide to implement change if deemed necessary.
• Career Days	• Students and Companies	• Students are practicing the interview process and meet with companies to seek knowledge for the job process.
• Global Entrepreneurship Week	• Students and Companies	• https://www.genglobal.org
Ülemiste City with facilitate the process for the projects listed above.		

Conclusion

The study tour was beneficial to all the participants:

- Students had interesting innovative company visits. Participants enjoyed a Job-Shadowing Day outside their home countries. They got to know more about what is going on internationally in WBL, meet new friends, got further motivation that anything is possible. Moreover, they now consider Ülemiste City as their possible future workplace.
- The lecturers' experiences were quite similar to that of students, except the fact that all the experiences they had in WBL, as well as the knowledge they received, can be turned into action in their universities and immediately begin making a difference in their home countries.
- For the business companies and Ülemiste City it was a good opportunity to meet international talents, introduce Ülemiste Smart City and its innovative companies, and to further share their experiences in WBL and learn from the experiences of others.

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Appendices

Appendices 1

Nordplus Horizontal 2019 Building Educational Cooperation in Ülemiste City

Nordplus Ülemiste City III Study Tour: **Challenges of work based learning in smart cities**

Where and when: 14th-16th of October 2019 in Ülemiste City, Tallinn, Estonia.

Time	Students	Employers	Project partners (admin.)	Lecturers	Location
1 st day, 14.10.2019					
14.00 – 16.00	Arrival and Opening of the Study Tour • Opening words from the moderator of Study tour – Mainor, Mrs. Katrin Sulg. Explanations, introduction and aims of study tour. Briefing about next day's doings. • Opening words from the rector of Estonian Entrepreneurship University of Applied Sciences (EUAS), prof. Mait Rungi • Opening words and Ülemiste City introduction by Mainor Ülemiste, Customer Experience Manager, Mr. Teet Raudsepp • Introduction to worked based learning in Estonia What is work based learning? How we understand it, different opportunities and how it is working in Estonia? Representative from Innove, Development Manager for Work-based Learning, Mrs. Piret Lilover. Snacks, small talk and settling in etc.				EUAS, Suur-Sõjamäe 10a, room 227
16.00 –17.45	Briefing meeting for Project partners (admin.) Nordplus Summary Event in Oulu, dissemination, articles, reports, handbook, final report.				EUAS, Suur-Sõjamäe 10a, room Sahver
18.00	Dinner at Pizza Restaurant POMO				Restoran POMO, Sepise 8
2 nd day, 15.10.2019					
09.00-13.00	Ülemiste City company visits for lecturers and students (Magnetic MRO, Tallinn Airport, Zone Media, Healthcard, Securitas Eesti, Ülemiste Health Centre)				Different companies
13.00 – 13.30	Lunch				Restoran Dvigatel, Lõõtsa 6
14.00 – 16.30	G4S sharing experience of work based learning				EUAS, room 227 (Suur-Sõjamäe 10a)
18.00	City tour and dinner at Old town http://www.talukorts.ee/et/kontakt				Talu kõrts, Viru 18, Tallinn Old Town
3 rd day, 16.10.2019					

9.15-12.00	Group visit The North Estonia Medical Centre	Buss waits in front of the Ülemiste hotel (Lennujaama tee 2)
12.00 – 12.30	Lunch	EUAS, Suur-Sõjamäe 10a, Room 228
12.30 – 15.30	Work-shop: “Different practices of work-based learning: How to prepare student to be better specialist? What can universities and employers do?” First session: Key Speakers (5x15min) • Aalborg University experiences in work-based learning - Janne Bang (Aalborg University) • OAMK Labs and Incubator - Kimmo Paajanen (Oulu University of Applied Sciences) • Proakademia - Timo Nevalainen (Tampere University of Applied Sciences) • Cleveroni Academy – Kristjan Oad (Eesti Ettevõtluskõrgkool Mainor) • Work-based learning at Hansab - Anneli Laines (Hansab AS) Second session: Work-shop, managed by the Key Speakers Topics: 1. Is every company suitable for WBL? How to choose? KIMMO 2. What kind of support / motivator / mentor the learning employee needs? TIMO 3. What does mean a working student for a school (studying and working in the same field at the same time)? INGRID 4. How to bring together three parties - school, company, student - and start learning? How to prepare and organise collaboration? JANNE 5. What it means for a company to have an employee working and studying in the same field and at the same time? Challenges? Benefits? ANNELI • What kind of support / motivator / mentor the company needs? HELNA Facebook: https://www.facebook.com/events/476974229700789/ Moderator is Helna Karu-Baher, Innove SA	EUAS, Suur-Sõjamäe 10a, Room 227
15.30	Closing	