



European Union

European Regional
Development Fund



Interreg
Central Baltic

Orientation period to on-the-job-learning (2 ECTS)

Cargo Handling

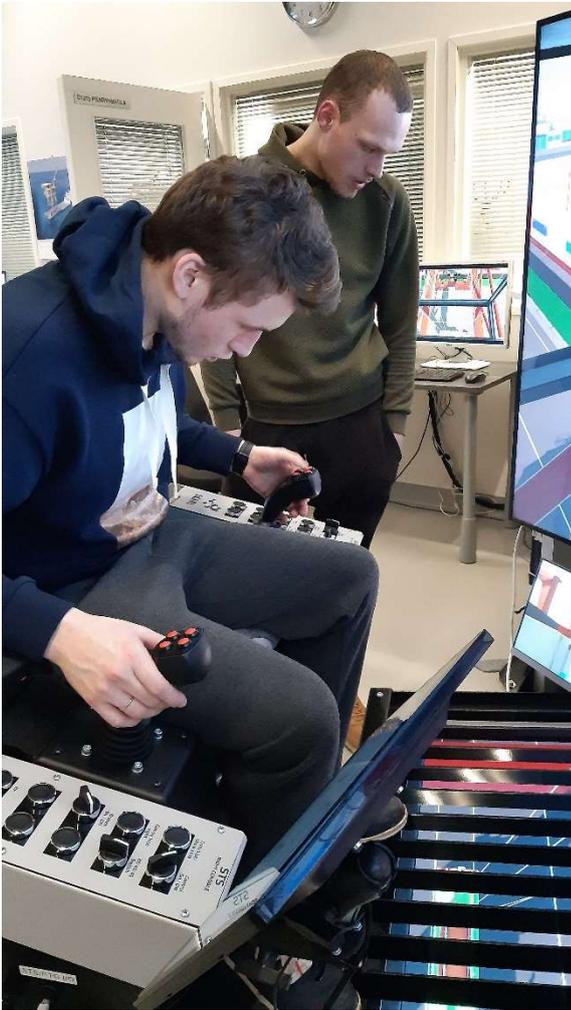
1. Introduction

The structure and content of the vocational degree in cargo handling have been made to correspond to the tasks related to the handling of goods in the port. The tasks are very different and require a wide range of skills and solid professional skills from the author. The vocational qualification is made up of a few compulsory parts, which include a kind of general knowledge of port cargo handling. In addition to the compulsory parts, the entire graduate must choose at least one optional part of the degree. The versatility of the optional components helps the graduate to specialize in acquiring the skills needed in his or her workplace. To some extent, the contents of the different parts of the degree overlap, but they also provide the necessary skills when completed separately.

Ports can be very different from each other and therefore it is not conceivable that there would be only one degree with a certain content that would provide the necessary skills for work in each port. For example, the optional degree section "Shore Crane Operator" includes three different types of harbor cranes, each of which requires its own user to have a separate qualification. This makes it possible to complete the required part of the degree, regardless of the type of port and the cranes used. In some ports only one type of crane is required, while in others all three qualifications may be required..

2. Phenomenom-based learning

Phenomena-based learning is based on a phenomenon, not a compilation of the contents of different subjects. Students are aware of the goals from the beginning as well as during the process and the student has the opportunity to influence the contents and working methods of the phenomenon. Content may not be covered by subject.



Phases of phenomenon learning

- what is already known?
- objectives
- design (contents, working methods)
- working
- evaluation
- revision of objectives
- design
- working
- assessment (self-assessment, peer review, teacher assessment)

The role of the teacher in phenomenon-based learning is to act as an expert and help find new perspectives. The teacher acts as a facilitator of learning and takes care of the progress of the overall process, as well as points out various suitable working methods and sources of information.

Why phenomenon learning?

- student involvement
- the goals set by the students themselves are motivating
- the thing to be learned builds on / alongside what has been learned before
- perceiving larger entities
- interaction in learning

3. Learning by doing in VET

a. Finland

Systematic training in the port sector can be seen to have begun in Finland in the 1950s. At the time, the work was very physical and a lot of labor was needed because there were few machines and the goods were not unitized. Employers already saw the need at that time to provide training for employees. The employers co-founded a private educational institution where short courses were organized for employees and management. In practice, however, most of the learning took place through work in the workplace.

Later in the 1970s, apprenticeship training was introduced in Finland. It was also a very popular form of training in the port sector, and all the operators of Finland's largest ports used apprenticeship training in their recruitment until the 1990s. In this form of education, the principle is precisely learning in the workplace. In the educational environment, subjects related to vocational management and in-depth study are sometimes studied. The "Further Qualification of Cargo Handling" under the current qualification system was created for the port sector in the early 2000s. The degree was built on top of the stevedore's job description and covers the most important cargo handling work in the port.

b. Estonia

Apprenticeships or workplace-based learning is a form of vocational education where the share of learning in a company, i.e. at work, is significantly higher than usual and makes up at least 2/3 of the total study. Apprenticeship is study format which rises as a result of effective cooperation of a VET institution, a student and an employer. The basis for apprenticeship is a VET curriculum. Learners perform tasks under the supervision of a supervisor at the workplace, which help him / her to achieve the learning outcomes described in the curriculum. Besides this, theoretical learning is organized at a corresponding VET institution.

Apprenticeships are regulated by the [Decree](#) on work-based learning of the Minister of Education and Research.



4. Planning the process

The planning of the implementation of the training is based on the need for training. The employee himself feels that he needs additional training or the employer sees a need to raise the level of competence of his employees.

The educational institution that provides training in the field in question plans and organizes the training together with the trainee and the employer. Initially, the trainee is personalized in which his or her current competence is stated and documented and compared with the competence requirements of the degree to be completed. In order to acquire the missing skills, a plan is created which states what skills are acquired in the educational institution and what in the workplace.

In the workplace, the student has a workplace counselor to support learning, who is able to help and guide the student if necessary. The teacher and workplace supervisor work together to monitor the student's progress.

Cooperation between the educational institution and the workplace in crane training

The educational institution organizes knowledge-based teaching and the things to be learned can be practiced and applied in practice in the workplace. First of all, even before the contact teaching in the educational institution, the student must receive an introduction to the harbor crane at the workplace. In this case, the theory is easier to understand and put into practice when the student already has some understanding of the crane and its use.

The instructor is an experienced crane driver.

Indicative content of the orientation (applicable according to crane type):

Technique

- crane structure

- engine and transmission
- electrical equipment
- cooling and fuel system
- hydraulic system
- daily checks on the driver

Safety

- controls and their use
- load monitoring equipment
- boom / hoisting rope inspection
- checking the auxiliary equipment
- cab equipment and visibility
- workplace safety instructions

Operational training (guided by an experienced driver)

- commissioning of the crane
- adjust of stabilizers
- moving the crane to the work site and selecting the location
- driving without load
- trajectory training
- loading the crane
- finish line training

The duration of the orientation must be sufficient so that the student has the opportunity to learn new things. Depending on the case and implementation, the length of the orientation could be from a few days to a few weeks.

5. Best practices

a. Using IT in on-the-job-learning

Distance learning

Various web-based learning platforms are used in teaching between a person working / studying in the workplace and an educational institution. In this way, studies can be carried out more efficiently and appropriately, regardless of geographical distances. Currently, distance learning is also very topical due to the Covid-19 pandemic.

b. How to measure learning outcomes

Showing skills remotely

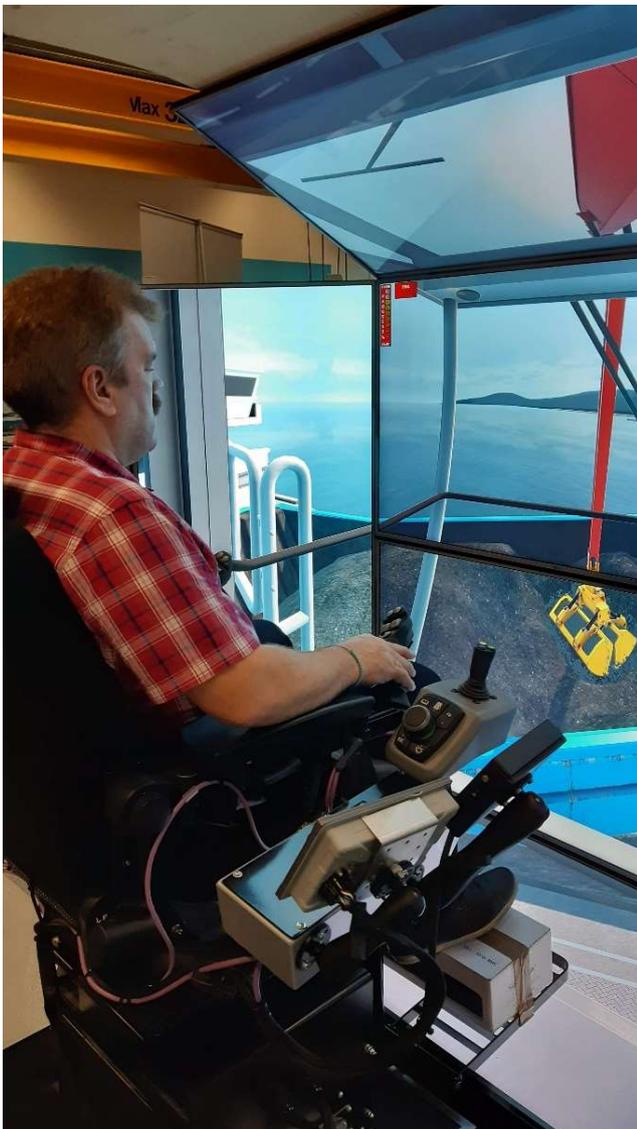
In degrees, competence is demonstrated on real work. The student performs the work tasks mentioned in the degree criteria and his / her performance is assessed by the teacher and the working life representative. Evidence can be accumulated over a longer period of time, for example in the form of various documents and reports. In a functional display, evaluators have traditionally been physically in the same place as the display provider. This, of course, has provided good opportunities for making observations and discussing with the assessee during the screening.

Such an arrangement is easy to implement when the display takes place in a workplace that is close to the educational institution. When the distances increase, for example, the teacher's transfer to the workplace for display requires several hours of travel and perhaps even an overnight stay. In this case, the total time spent by the teacher on the screen becomes unreasonably large in relation to the time spent on the actual test.

During the Covid-19 pandemic, the school world has had to resort to many new solutions in the implementation of teaching. Companies have also switched to part-time work and imposed travel restrictions.

In showing related to harbor crane training, we are currently operating with the teacher evaluating the showing remotely via the mobile phone's video call app.

The student has a telephone in the crane cab set so that the camera looks ahead. The cameras of the phones are so high quality that especially in daylight the picture is very good. During the showing, the conversation is also possible either through the headset or the loudspeaker. The second reviewer can be normally present and can also be communicated with before and after the showing test.



6. Summary

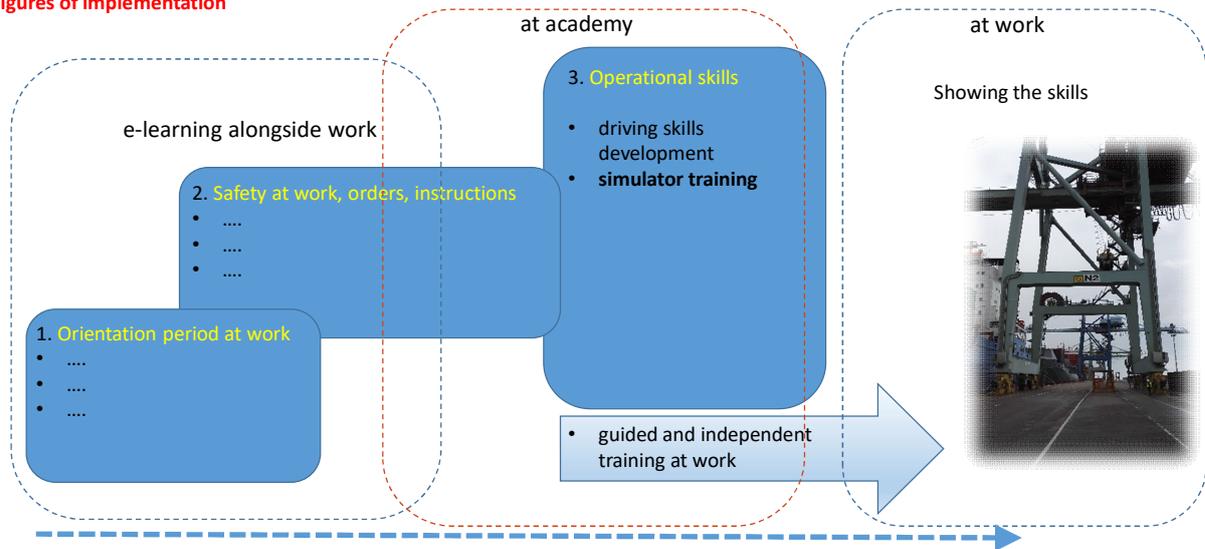
Diverse learning environments can be designed and implemented in educational institutions where the skills needed in working life can be acquired. However, it is not possible to acquire and practice all work tasks and related skills in an educational institution. The port industry has a long tradition of cooperation between the educational institution and the workplace in education. The workplace has the right tools and equipment in the right environment so it is naturally a great place to learn in terms of infrastructure. Workplace learning is very effective when properly planned and implemented. The challenge is to make arrangements for trainees to do the tasks they are learning alongside the normal operation of the company. It requires a lot of planning and organization but it also requires workplace commitment and a genuine desire for this activity..

Example of training process

Further Qualification of Cargo Handling

Optional part 8, Cranework

Figures of implementation



Content of 3 steps (picture above)

1. Orientation period

- knows the company's operating idea, the most significant customers and stakeholders
- knows the content of the crane operator's task
- knows the operating principle and controls of the crane
- knows the most important cargoes (goods) and how to handle them in their own workplace
- under the supervision of an instructor, training the crane's trajectories and control without cargo

2. Safety at work, orders, instructions

- safety orders at working place
- safety at crane work
- lifting equipments

3. Operational skills

- practicing of crane controlling with simulators
 - different conditions
 - safe way to handle cargo
 - various types of cargoes
 - efficiency at crane work