

VET TOWARDS HYBRID MODEL WITH DIGITAL TOOLS AND E-LEARNING

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Abstract

Digitalization is an important enabler for both teachers and students in a complex educational world. Vocational education providers now have the means to develop digital or hybrid learning offerings that harness the power of e-learning. These ventures aim to provide students with flexible learning opportunities considering different levels of learning offerings. A key objective is to create a simple model of study and at the same time reduce the overall time spent in studies before students enter the labour market. Study modules in vocational education are being brought as a part of secondary and vocational degrees with a bespoke framework.

In the future, vocational education institutes need to produce more e-learning or hybrid modules that can be integrated as a part of upper secondary and vocational degrees. This helps those students who simultaneously complete either double or triple degree. The idea is to lower the threshold in multi degree studies. This takes place as students become more familiarized with digital learning and its possibilities and acquire some of the skills needed in working life well before entering that stage. These cross-system opportunities are an important part of generating attraction among students finishing their studies and contemplating also further education opportunities.

Kouvola Vocational Institute Ltd., Eduko has also been developing tailored digital services for immigrants who are in integration training and who are pursuing vocational training. Experiences with the pathway have been positive. Teaching Finnish language and language specific practices are part of the digital offering in these pathways. Simultaneously, we wanted to investigate the utilization of e-learning or digital tools in learning, student guidance, and other parts that specifically meet the needs of vocational schools' students. The project has provided an opportunity to share experiences and design a descriptive model of teaching co-operation between teachers and students.

The project also aims to improve the digital competencies of the teaching staff and the assessment of learning and guidance methods. E-learning and digitalization provide substantial advantages towards more effective teaching. It also assists in creating flexible learning opportunities for students without the limitations of the time and place. One of the aims, of course, to reduce the overall time spent in education or study time does not get unnecessarily long. Digital or hybrid study offerings provide on way to meet these goals. In our framework, students have access to a wide range of digital or hybrid studies. As a result, we are building an educational pathway towards upper secondary or vocational studies that eases the transition and reduces the total length of the students' education.

With more focus on e-learning, both upper secondary and vocational degrees provide important skills needed for pursuing higher education. The demands of the society also require new innovations of the vocational system to meet national goals in competitiveness. Moreover, our e-learning project shows implications that a student's ability to continue her studies in the next level or at work are improved.

Keywords: e-learning, digitalization, hybrid model, vocational education, immigrants, flexible learning.

1 INTRODUCTION

Finland's educational policy objective is to guarantee equal educational opportunities for each individual. The aim is that everyone will complete at least a secondary level qualification. VET is an important part of upper secondary education in Finland. 68% of all upper secondary students are enrolled in VET programmes, a higher proportion than the OECD average of 44%. High-quality VET programmes integrate learners into labour markets and open pathways for further personal and professional development. As the competence requirements in the working life are changing ever faster, the importance of lifelong learning continues to grow. In Finland, the share of adults who participated in non-formal job-related education over a four-week reference period is 10% among 25 - 64 year-olds with vocational upper secondary or post-secondary non-tertiary attainment, 11% among those with general upper secondary attainment and 16% among those with tertiary attainment. This compares to average

shares of 7% (vocational upper secondary or post-secondary non-tertiary attainment), 7% (general upper secondary or post-secondary non-tertiary attainment) and 14% (tertiary) across the OECD. (OECD 2023.)

The main features of VET in Finland are competence-based approach and personal competence development plan for each learner charting and recognizing previously acquired skills. In Finland early leaving from education and training is low and decreasing. Participation in lifelong learning is high, also due to VET participation. (Cedefop 2019) Another characteristic of a Finnish educational system is that vocational qualifications provide eligibility for higher education, and it is therefore important that, in addition to professional skills, vocational education and training also develops the learning skills needed in possible further studies.

The vision for Finland is to become the world's leading developer and user of sustainable digitalization in teaching and education by 2027. Digitalization promotes equal opportunities for everyone to learn and develop. Digital tools and learning environments support the individual needs of learners, promote equality and the accessibility of education, and also facilitate continuous learning at different stages of life. (Ministry of Education and Culture, 2023.)

Kouvola Vocational Institute Ltd, Eduko is a medium-sized, multidisciplinary vocational college in Finland, offering basic, vocational and specialist vocational qualifications in a wide range of professional fields. Currently, more than 60 % of students are adults, most of whom prefer flexible study options that allow them to combine studies, work, and family life. Also younger students highly value flexible study paths. Some youngsters combine vocational studies and upper secondary education through a double degree. Some of the students pursue a goal-oriented sporting career and complete a vocational qualification through the Sports Academy. Vocational students who want to continue their studies in higher education can include online courses offered by e.g., the open university as a part of their vocational studies.

Digitalization has been identified as one of the development priorities in Eduko's strategy to 2030, with the idea that digital learning solutions will promote personalized learning according to the needs of different target groups. To increase flexible and student-centred learning opportunities and to facilitate a functional and high-quality e-learning experience, Eduko launched an internal development project in 2022. To improve user-friendliness for both teachers and students, the aim was to systematize e-learning into a single, common model instead of different teachers using different learning platforms of their own choice. Both the national guidelines of digital learning and the experience gained during the Covid-19 pandemic were used as a starting point for the development work.

2 E-LEARNING ON EDUKO'S E-CAMPUS

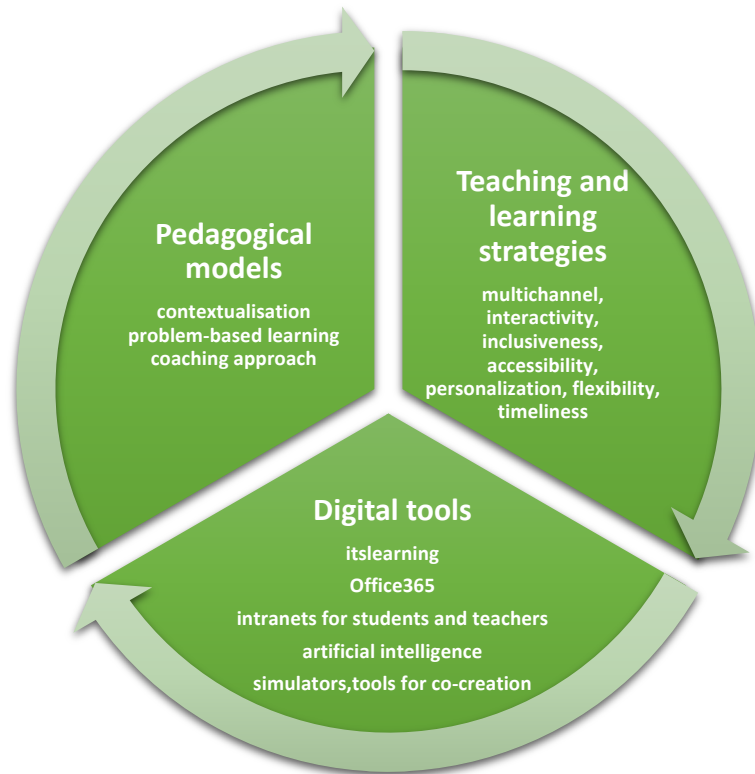
Based on the educational development goals set in Finland and the specific characteristics of vocational education, we started to investigate how digitalization and online pedagogy could be optimally implemented in vocational education. The starting point was the understanding that for some training programmes full e-learning is well suited, but for some professions, practicing manual skills in authentic work situations is essential. Even though there are big differences between different qualifications and fields of education, the objective was that all teachers should use digitalization in some way. To digitalize at least some learning experiences of the most traditional craft-based educational sectors we set out to explore innovative pedagogical solutions for developing practical work skills, such as simulation pedagogy and AR and VR technologies. The starting point was to create a hybrid teaching and learning model, that could be used by different educational sectors according to their needs and specific features.

Digital tools and learning environments were not entirely new to Eduko. In the past, there were several different e-learning tools based on teachers' personal preferences. This could potentially make the learning experience very confusing for the student, who had to navigate between different learning platforms and e-learning practices. The aim was to move from this situation to a coherent and co-created e-learning system. Eduko's eCampus can be described as a learning environment similar to physical learning environments. Learning activities on the eCampus are based on commonly agreed cornerstones of digital pedagogy, on which the technical solutions are built. The principles of Eduko's e-pedagogy are:

- 1 The use of commonly agreed digital tools, with adequate support and training.
- 2 Accessibility and student-centredness of the e-learning environment.
- 3 Appreciation of students' different abilities and learning styles.

- 4 Supporting interaction and community.
- 5 Regular communication between teacher and student.
- 6 Co-development of online content by teachers.

The development work started by defining a common vision of pedagogical models, teaching and learning strategies and digital tools. The components form an interlinked cycle and have a strong connection with the continuous development of pedagogical quality as well as technological innovations and infrastructure.



Picture 1 Common vision of the eCampus components

The pedagogical models used in vocational education must support the development of the students' professional skills, professional identity, and growth as professional actors. The aim is also to support the development of learning skills and general working life skills. Contextual learning, problem-based learning and pedagogical coaching approach were chosen, because they suit both vocational education and e-learning.

Contextual learning is based on the student's previous experience and real-life situations. The student is an active participant in the process and the teacher guides him/her in the right direction towards the goal. At the center of the learning process are observation and reflection. This approach leads to an understanding and conceptualization of the phenomenon.

Problem-based learning is based on the idea that learning is context-specific. Learning takes place by solving real-life problems rather than by theorizing about the subject. The process starts from a preferably work-related problem which can be a scenario, a case or a trigger given to the students. The task is then explored in more detail by working under the guidance of a teacher. Students utilize their own previous experience, search for information, consider solutions independently or in groups and may come up with one or several possible solutions to a task. Negotiation and dialogue between students and between students and teacher is also an important part of the process. The teacher acts as a facilitator of learning, not just a disseminator of knowledge.

The starting point and objective of pedagogical guidance is to empower students so that they are active participants in their studies, both individually and in groups. Pedagogical coaching approach strengthens the dialog between the teacher and the student. This means that the different phases and forms of education clearly and consistently promote the development of the student's actual professional and general knowledge as well as skills and competences needed in the working life. This implies a culture

of action and learning which takes place, as far as possible, in real or simulated work situations. Therefore, the key is practice, reflection, and self-reflection in order to become a professional.

2.1 A student-centered approach

To support and motivate students from different backgrounds and with different learning styles, Eduko's e-learning environment is built on a multi-channel approach. The learning experience consists of e.g., textual material, recordings of teaching sessions, videos, audio and podcasts, images, quizzes, simulations, and game-based exercises. Assignments, learning projects and other activities are carried out using a variety of methods. E-learning is interactive and guided. Implementation is inclusive and takes into account the diversity of the students. The eCampus is technically and content-wise accessible:

- Functional on all devices and supportive of assistive technologies.
- Simple to use, easy to navigate, functionalities are informatively named.
- Rich, multi-sensory, with comprehensible content and activities, in plain language where possible.

Guidance and interaction are cornerstones of the eCampus, because interaction builds presence and community. Social presence is created through interaction, based on the possibility to express oneself, the opportunity to be yourself, and to get to know the members of the learning community. Interaction also creates the basis for trust and productive learning experiences. Whiteside (2015) identifies various ways to create social presence:

- Affect, i.e., the expression of emotions, values and personality.
- Open communication, sharing awareness and mutual recognition.
- Expressing group cohesion and building and maintaining commitment.

Eduko's strategy puts the student at the center of its activities. This was taken into account in the development of the eCampus by providing a single "door" to log in via the student intranet "MunEdu". All courses have a similar structure and visual appearance, making it easy for students to navigate the learning environment. The teacher's personal touch is reflected in the learning materials and activities. Students also have access to learning analytics to monitor their own learning progress. Particular attention is paid to familiarizing students with the use of eCampus. This starts with an orientation period at the beginning of the studies. Support is also provided by the teacher and the eCampus developer. Additionally, students can come to a support workshop to do their eCampus assignments and receive guidance on the use of the e-learning platform.

2.2 E-learning supports individualization and serves diverse target groups

Both working life and students appreciate flexible educational pathways that are not unnecessarily long. In Finnish VET, this is made possible through the recognition and validation of prior learning, personalization and diverse learning paths. According to the law of vocational education, a personal competence development plan is drawn up for each student by a teacher or guidance and career counsellor together with the student and, when applicable, an employer's representative. This means that the prior learning of the student must be recognized and different forms of learning, such as contact teaching, e-learning and on-the-job learning, are used, taking into account the student's abilities, objectives and life situation. The national qualification criteria describe the competences and assessment criteria required for the qualification. This procedure ensures the uniformity of competences throughout the country.

The digital learning environment supports learning of a wide range of target groups. For those who are able to study independently, it can significantly reduce the duration of their studies. For those in employment, the digital learning environment offers the opportunity to combine work and studies, for example through an apprenticeship contract. Multichannel learning materials have also been found to provide good support for students with special needs, for example by providing the opportunity to review what has been taught as many times as needed.

Demographic change in Finland and severe labour shortages in many sectors call for an increase in labour based immigration and also promotion of the employment of immigrants who already live in Finland. According to employers, the main obstacle to the employment of foreign language speakers is insufficient Finnish language skills and specifically professional language and communication skills. In many cases also the vocational skills of the commers need to be updated. For students with an

immigrant background, the digital learning environment offers the possibility to learn, e.g., professional language and to review practical work instructions as many times as necessary. In the context of work- and education-based immigration, Eduko uses an intensive vocational Finnish language online course, which has proven to be effective. This training module with online contact teaching and supervised self-study takes place before the workers or students arrive in Finland and it also supports the students as a hybrid model implementation during their vocational studies in Finland.

As a new element, Eduko's eCampus introduced digital competency badges, which allow students to complete smaller competency units of a degree and receive a competency badge as proof of their competence. Students can collect the badges in their own digital portfolio. This approach is well suited for e.g., training company staff, where speed and company-specific content are critical. Small learning modules are also well suited for people in rehabilitative work activities, who do not yet have the resources for full-time studies. We have found that the completion of a competence badge motivates and encourages people towards a vocational learning pathway.

2.3 Hybrid model in VET

There are several slightly different definitions of the hybrid model. In Eduko's case the hybrid model refers to combining face-to-face teaching in the physical learning environment and online teaching including both real-time teaching sessions and independent but guided on-line learning.

Vocational education has a long tradition of face-to-face teaching. In addition to theory, manual skills are studied in professional learning environments that simulate working life. It is clear, that there are many areas of vocational education with a strong emphasis on manual and practical skills where e-learning alone is not a viable solution. In some areas of education, on the other hand, teaching can be done mainly or completely online. However, we believe that there are subjects in all qualifications that can be taught online. We therefore expect all teachers to use the eCampus at least as a support for face-to-face teaching and as a way to differentiate teaching and to give assignments to the students.

Keeping in mind the different starting points and abilities of students, hybrid education should pay attention to the equality of students by identifying different learners and learning difficulties and by activating and engaging the students equally. To be successful, hybrid education requires careful prior planning of the pedagogy. This needs to be complemented by effective and user-friendly technological solutions.

3 ORGANIZATION OF THE DEVELOPMENT WORK

For internal development, an eCampus development group was appointed, with representation from different fields of education and staff groups. The team was led by the development director and assisted by an eCampus developer who is responsible for teacher support and teacher training. The eCampus development team was divided into sub-teams: technical implementation, guidance and interaction in the digital environment, learning design and model courses for teachers, and communication within the organization. The development was based on teacher co-creation, peer review and sharing of best practice.

The eCampus developer is an expert in both IT and online pedagogy. For technical solutions and overall architecture, she worked closely with the IT management team. The eCampus developer trained 14 teachers to become "power users", whose role is to provide close support to their teacher colleagues. Teachers had very different levels of digital and digital pedagogical skills. The courage to dive into a new digital environment varied widely. For this reason, training for teachers was implemented in a phased approach. First, the very basics were covered, and then the more advanced use was introduced step by step. Pedagogical thinking was involved throughout the process. In addition to individual and group tutoring, the eCampus developer also created videos and other tutorials to support the teachers. Also a pedagogical "Tip-Basket" was set up on the staff intranet, through which tips for planning online teaching were distributed and best practices were shared.

The success of the development project depends on the availability of adequate, timely and accessible support for teachers. Support was provided through individual and group guidance and digital guidance materials. One of the objectives in developing eCampus was to build integrations between Eduko's various digital systems. This ensured that the necessary information could be transferred automatically, reducing unnecessary work and allowing for more efficient allocation of human resources to teaching and guidance.

4 CONCLUSIONS

The findings made during the development of Eduko's eCampus correspond well with findings of Kwiatkowska-Ciotucha and Zaluska (2023, 2) that the barriers associated with online education can be divided into three groups: those arising from technical and technological constraints, those on the part of educators and those on the part of students.

The aim of the technological development was to automate and integrate the various digital systems as smoothly as possible. Interfaces were used to integrate e.g., the student management system with the eCampus. In addition, other digital software used in vocational education and training, such as digital textbooks and simulators, were added to the eCampus. In order to support teachers, a model course template was developed to provide ideas and tips for course design, facilitate teachers' work and provide students with consistent learning content. In all this, the aim was resource efficiency and user-friendliness.

For many teachers used to teaching practical work skills, the introduction of new digital tools is a major change process. For this reason, change management played an important role. Managing digitalization requires perseverance and consistency from the leaders. As part of this leadership, clear and timely communication proved to be very important. At Eduko, systematic communication of the various development stages was done via the intranet, in various learning community group meetings and also individually in face-to-face discussions.

On the other hand, strict guidance was required and on the other hand, encouragement and motivation. In this process, the eCampus developer in particular proved to be an extremely important person. It also proved essential that she was always available to help the teachers. In addition to technical assistance, the eCampus developer provided pedagogical tips for e-learning, with particular attention to interactivity and guidance in the digital learning environment. It can therefore be said that the right kind of personality and strong digital and pedagogical skills were needed for this task.

The eCampus development project confirmed the results of Tapani and Salonen (2019) that the fragmented work of vocational teachers raises a need to share expertise in their day-to-day work. By working in pairs or in teams it is possible to fulfil all the needs of the vocational teacher. Shared expertise enables everyone to concentrate on their own strengths. Co-creation by teachers proved to be important in many ways. Co-creation enabled peer learning and promoted the homogeneity of teaching and assessment. In addition, the procedure made it possible to allocate human resources in an optimal way.

Eduko's eCampus has been well received by students. It has proven to be a flexible learning tool and has also added value to the implementation of personalized learning pathways. We believe that the standardization of the digital learning environment has had a positive impact both in terms of usability and quality of teaching.

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