

PROJECTS AND WORK AS PART OF EDUCATION

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Abstract

In EVTEK University of Applied Sciences project and work based learning is part of the curricula in many degree programs and R&D related work. In the poster there are shown two different types of examples of work based learning as part of the education curriculum and it shows how these address the challenges in a creative way. The first case is an innovation platform used by students in their final stages of their studies. The second example is related to working life projects in an adult engineering education programme.

Keywords

Work-based learning, innovation platform, project, engineering education, CDIO

Introduction

In today's working life the ability to apply theoretical knowledge to practical situations immediately at the beginning of a professional career is becoming increasingly important. This creates a growing demand for developing learning methods, such that as theory is learnt, it can be put into practice immediately. The whole expanded content of learning should happen in the same time scale as previously.

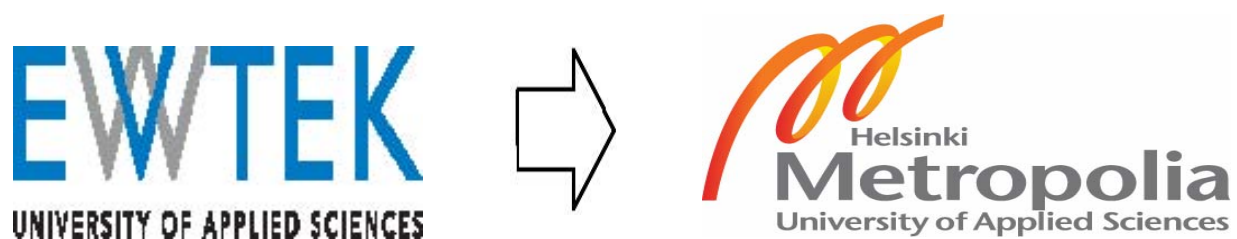


Figure 1. The New Challenge and Opportunity

Currently EVTEK University of Applied Sciences faces an exciting opportunity as it will merge with Helsinki Polytechnic Stadia at the beginning of the academic year 2008 – 2009. This new Helsinki Metropolia University of Applied Sciences will be the largest one in Finland and will cover programs in engineering, art, business, healthcare and social sciences. The organization will be open and receptive to innovations for creating new ways of teaching and learning.

Discussions of different frameworks

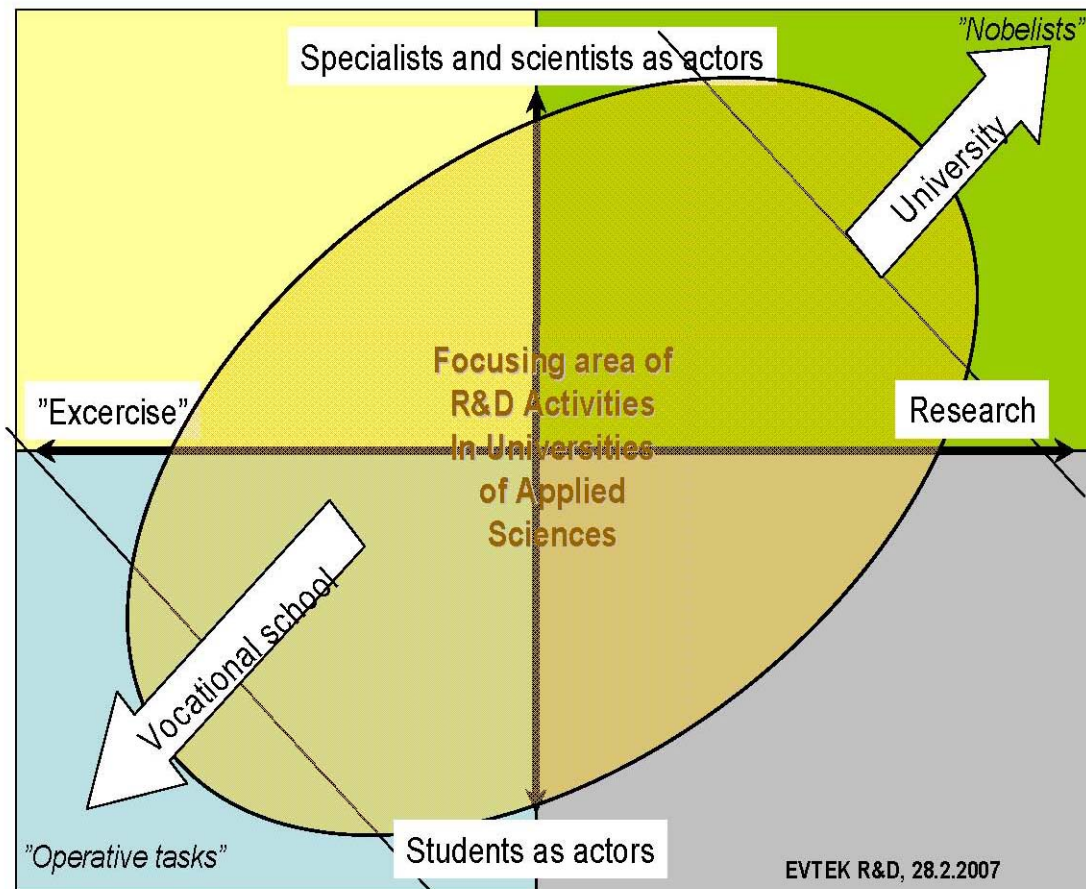


Figure 2. The position of the R&D work done in different institutions

Universities of Applied Sciences have their role in applying science to practice, in best cases in new ways, not to create new theoretical science as such.[1] Scientific work and R&D are matching together as the scientific work in many cases in engineering needs empirical experiments to have evidence to work and be shown true.

Using projects and different types of work based learning brings up a challenge of how to assess the learning outcomes and the student's performance. The learning outcomes are not as simple to set as in traditional teaching. One of the key issues is that the frame for assessment needs to be planned in advance, but it has to allow for flexibility as well as unforeseen change.

Examples of the project and work based learning in EVTEK

In EVTEK University of Applied Sciences project and work based learning is part of the curricula in many degree programs and R&D work. Here are two different types of examples of work based learning as part of the educational curriculum and show how these address the challenges in a creative way. The first case is an innovation platform used by students in the final stages of their studies. The second one is working life projects in an adult engineering education programme.

The innovation platform as a solution for combining learning and R&D work

In the innovation platforms learning can happen via multi-disciplinary projects. Each of the platforms can include several teachers from different programs, who take responsibility for the relevant projects [1], and their learning outcomes, as well as the evaluation.

“center for competence”
a test bed for learning
promote and encourage active learning by creating surroundings that are ideal for learning and training

Work based learning in adult engineering education

The degree program in Information Technology provides students with the basic knowledge and skills in structures and functions, hardware and software, and systems in the information technology. In addition to professional learning aims, generic working life competences are emphasized in the programme

The student is responsible for the whole project cycle. The project cycle and management responsibilities do not differ from professional project management and implementation. The student is supported in this process by a tutor in the workplace and by a supervisor in the degree program.

An example of the innovation platform: Mobile Application Laboratory

Administrative processes and technical infrastructure of the university also act as a test bed for novel applications. An example of projects successfully completed in the Mobile Application Laboratory is an ordering system:

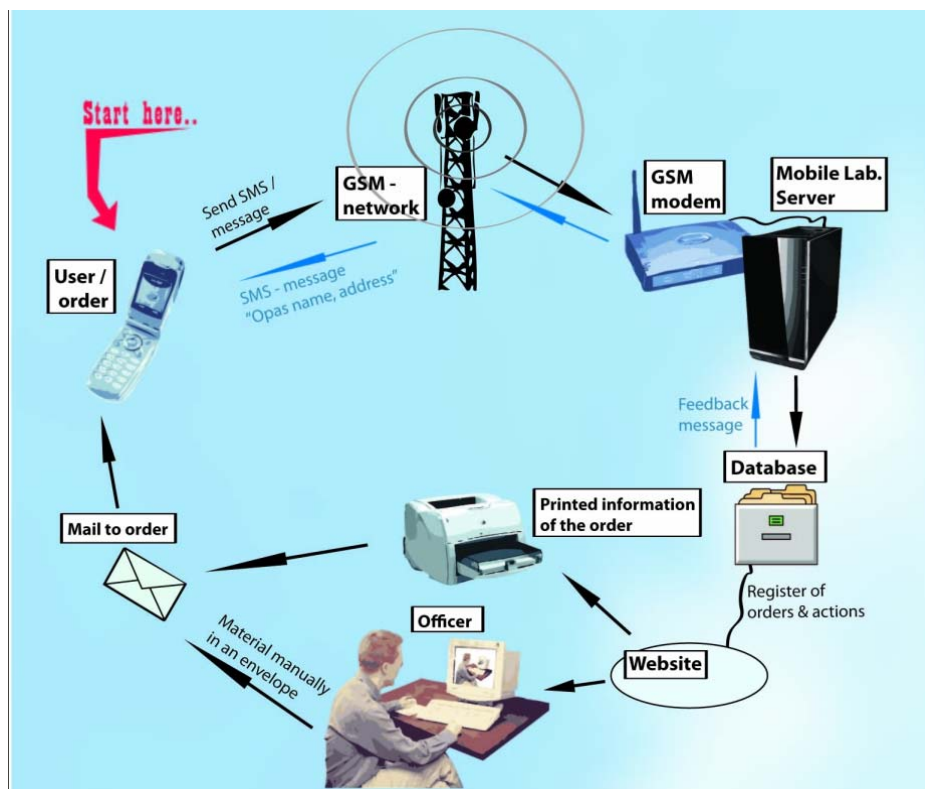


Figure 3. An ordering system developed by Mobile Application Laboratory

When a customer wants to order material from EVTEK, he or she can simply send a SMS message from a mobile phone to a given number. The server in the Mobile Application Laboratory receives this message via a GSM modem, and stores the order information in a database. It automatically sends a feedback message to the sender, telling whether the order is accepted or whether more information is needed. If the order is correct, the database produces a form for the ordered materials and orderer's information. Then the officer can simply insert the material requested into an envelope and the address form on it and post it. Now with the system working, all this sounds straight forward, but the designing needed significant innovation and knowledge.

Achieved competencies in innovation platforms and working life projects

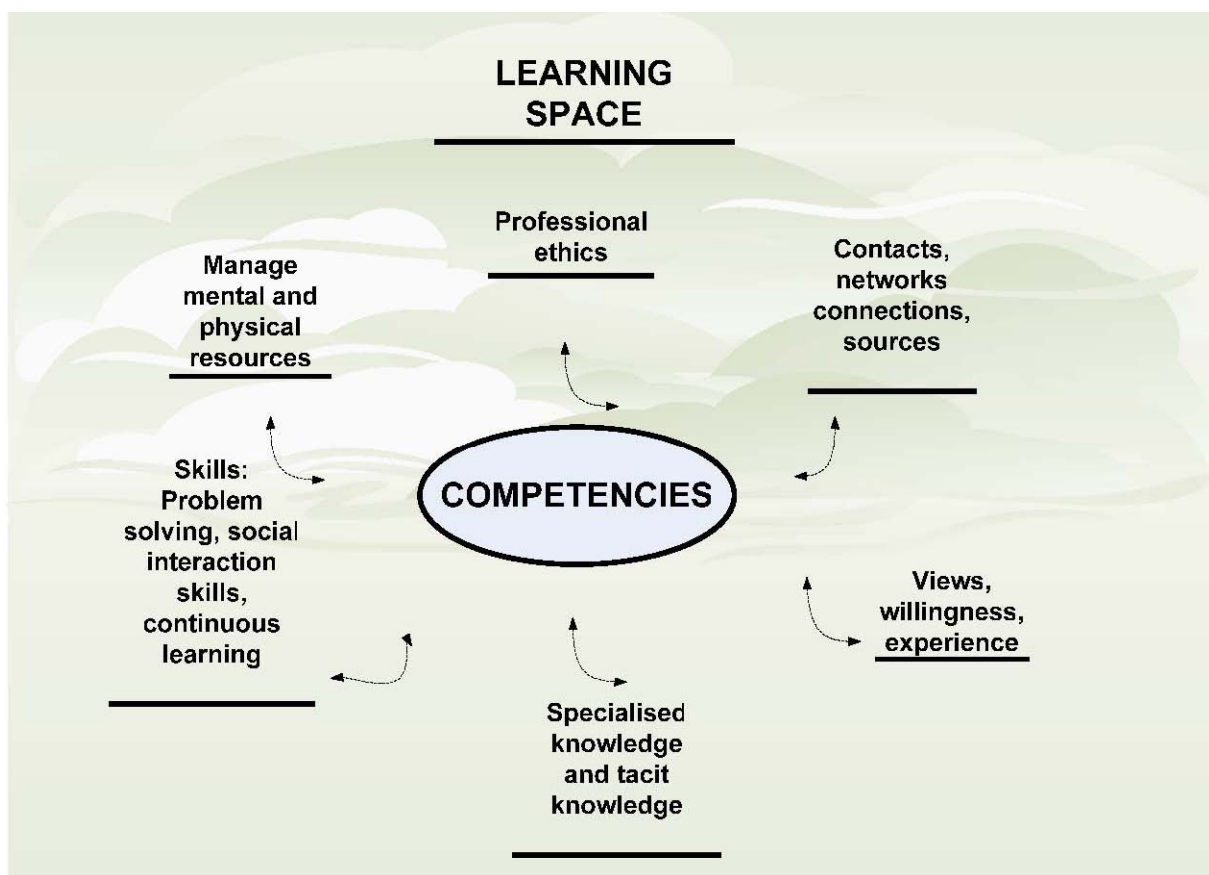


Figure 4: Relationships in competence development

A key issue in work based learning in general is the evaluation of the learning outcomes and competencies. This requires thorough planning of which learning outcomes the evaluation is based on and how the development of competencies and learning outcomes are evaluated and measured.

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