

Developing competencies and linking students with industry in a company-like learning environment

Maria Leivo

Turku University of Applied Sciences

Education Support Centre Finland

maria.leivo@turkuamk.fi

Abstract

Education Support Centre Finland is a company-like learning environment where engineering students work and learn. The experiences from ESCfi are indicating that working in a company-like learning environment is becoming the backbone of competence development for these engineering students that are involved in this operation during their studies. According to students own opinion they have achieved such experience and competences by working in ESCfi that would not have otherwise been possible. These statements and conclusions are based on interviews of student's perception of their learning experiences while working in ESCfi.

Introduction

Education Support Centre Finland (later ESCfi) is a company-like learning environment in Turku University of Applied Sciences (TUAS). ESCfi operates in the educational unit of Telecommunications and e-business. Students working in ESCfi are mainly students from two degree programmes; from Finnish and international degree programmes in Information Technology.

The operation of ESCfi focuses on providing software support and implementing projects for schools and other educational institutes and organizations in Finland. At the moment ESCfi employs 15 engineering students and the amount is increasing due to the increasing amount of customers and projects.

From TUAS's point of view, ESCfi aims to provide a learning environment which is very close to working life and guides students towards entrepreneurial behavior; customer support requests and projects are authentic and the operational principles promote initiativeness, independent way of working and entrepreneurial attitude. The operation of ESCfi is organized so that it resembles authentic company in as many ways as possible.

Operation of ESCfi

In ESCfi students work in different roles from technical specialist to marketing and team leadership. Students run the operation themselves independently. Lecturer mentoring and steering the operation takes part in planning and developing the operation of ESCfi, making contracts, budgeting and recruiting. Lecturer's role in these tasks is mainly mentoring and guiding. Students themselves have the major responsibility of customer satisfaction, cooperation with companies and different organizations, organizing the work, resourcing and most importantly, learning.

Typically students start working in ESCfi during or after the second year of their studies and they finish when they graduate. Students have different possibilities to learn and do their studies in ESCfi; by taking part in everyday support centre work by solving customer's problems, by taking part in different projects or by making technical certifications that prove their skills. Technical certification process also has an important role in the provided service's quality assurance from customer's point of view.

Student's work in technical department in practice is to solve customer support requests which quite often also includes customer contacting. Customers can send these support request via ESCfi's webpage, by email or they can call. Students start to do this solving of support requests after the introduction period which can last from few weeks to several months depending on the working hours students has to put in. Later when student already has experience of problem-solving and customer work, student can take part in a

customer project. The length and extent of these projects vary. Student may take part in a project either in role of a project manager or in role of technical specialist.

Student's work in marketing department in practice is to follow customer satisfaction, make contacts to new and existing customers, make marketing material and also to take care of all internal and external communication and public relations. The student in role of a team leader takes care of everyday decision making, organizing the work, resourcing and following-up of projects. Team leader generally also takes part in the technical department's work and projects.

ESCfi learning process

Part of engineering studies

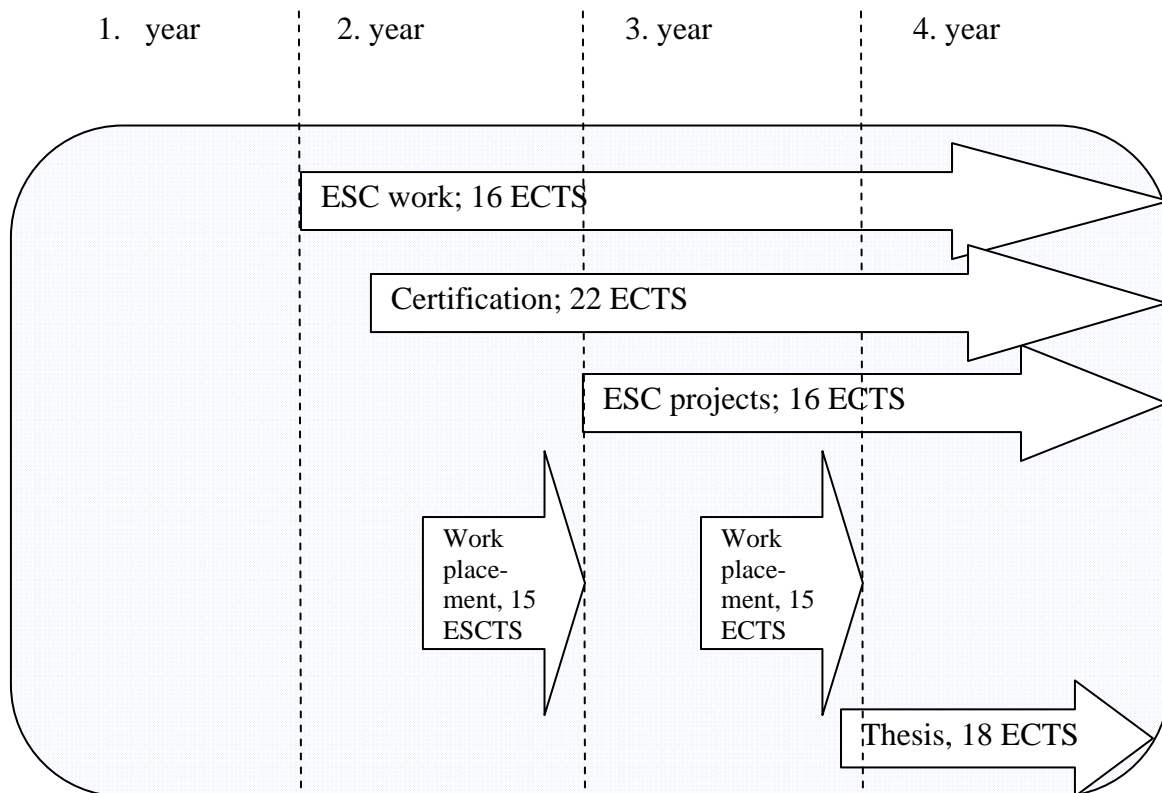


Figure 1. Engineering studies and ESCfi-learning

Figure 1 illustrates the ESCfi-learning from student's perspective. Altogether it is possible for a student to achieve 102 ECTS by working in ESCfi. It is possible for a student to choose some of the ESCfi learning modules and for example go and do the work placement period somewhere else.

Learning in practice

When student starts the introduction period of study module ESC work a tutor is assigned to him/her. Tutor student who is a senior student, helps new student to get started and solve customer requests and problems in the beginning. When a student is able to take responsibility and work independently, he/she is assigned to more challenging tasks.

ESCfi teacher conducts appraisal interviews at least once in a semester. In these interviews following issues are discussed: student's learning objectives, schedule for certification, amount of working hours, tasks and responsibilities and follow-up of previous semester. This interview is documented and updated if necessary.

ESCfi has a software based system for following up student's working hours and their tasks. There are no strict working hours in ESCfi, student come to work when it is possible regarding their curriculum and other courses. The objective is that ESCfi is a flexible learning environment so that working in ESCfi does not take over student's other studies. At the moment the amount of working hours vary between weekly 5 hours to 30 hours. Students make a plan every two weeks where they define their learning objectives for next two weeks. After this two weeks period they report in form of a learning diary how their learning objectives were achieved and what have they accomplished during this last two weeks period. They must also evaluate their operation in respect to other students and customers. Also all possible obstacles or changes in their plans are reported here.

Competence development

The experiences from ESCfi are indicating that working in a company-like learning environment is becoming the backbone of competence development for these engineering students that are involved in this operation during their studies. According to students own opinion they have achieved such experience and competences by working in ESCfi that would not have otherwise been possible. From student's opinion, the most important competence they have achieved is strong technical experience and knowledge including hands-on experience of solving real problems and learning best practices from specialists belonging to the ESCfi network. In addition to that they especially feel that they have achieved social skills like presentation, negotiation, customer work and team work skills, project work and management skills, some financial skills like budgeting and cost surveillance. They also feel that they have achieved valuable experience of working with public sector customers.

It seems that students perceive that they achieve best learning results by using problem-based learning method. This is mainly the method used in solving technical problems and customer support requests. Very rarely the support requests are such that the student would know the solution to the problem without actually putting effort into solving it. Project-based learning is another learning method that students themselves feel efficient, and actually in many cases projects are a mix of different learning methods. Some parts of the project student implement together in a group, some things they learn from other group members and some parts of the project when they do individual tasks problem-based learning is used then.

During these three and half years ESCfi has now operated the most difficult thing for students seems to be the introduction period when they start working. Most courses students have attended so far are traditional teacher-led lectures or laboratory assignments and when they come to work in ESCfi the responsibility of learning and setting learning objectives is completely left to them. In order to proceed in your work and learn, you must be independent, take initiative and communicate and often this phase

creates some anxiety in students. For some students this phase may just last for a few weeks and for some it may take several months. But in the end students perceive this as a best learning experience they have had. They have had to do all the work and solve all the problems themselves; teacher has not saved them from most difficult problems and setbacks.

Linking students with industry

Students are linked with industry and working-life in many ways when they work in ESCfi. First of all students attend regularly seminars, conferences and fairs. Students are encouraged to attain new contacts, find new customers and new cooperation partners. In the beginning students go to these events with their tutor or as a group member but in a later phase when they have achieved experience and knowledge they might go to these events and represent ESCfi also independently.

Due to the nature of operation ESCfi students are linked with industry and working-life also through their customers. Many of the customers are so satisfied with ESCfi's service that in addition to support contracts ESCfi is implementing different projects and trainings for them. These are also valuable contacts and references after graduation.

There is also an indication that ESCfi students might be linked with industry and working-life too well and too early. In Finland there is such a demand for IT professionals at the moment that customers, partners and other contacts try to recruit these students in the middle of their studies which is of course difficult considering ESCfi's operational principles. For example if there is a student starting his/her third year of studies, we have put in effort for a year to train an employee for ESCfi and are not planning to get a substitute or successor for this students at least in a semester. So if this student is suddenly recruited, it has an effect on the projects student is in, it has effect on the everyday support centre work and it of course has an effect in that sense that this student does not have time to tutor a new student.

All students who have worked in ESCfi see it as an opportunity they are lucky to have; they can start their career already during an early stage of their studies and they feel ready to enter the labour market when the time of graduation comes. The best part is that this is also the opinion of the companies that have recruited these students. All feedback and comments about ESCfi's operation and ESCfi as a learning environment has been nothing but positive. Companies feel that if they recruit a student that has been working in ESCfi they can rely on student's experience and competences in a way that is very supportive for the persons that are involved in this operation.

Conclusion

Based on these positive experiences, another support centre focused on networking has started its operation in spring 2008. The objective in general is to get all the more engineering students to work in these company-like learning environments during their studies to learn real working-life skills, get real experience from real customers and real problems.