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

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About TUAS

- 9500 students
- One of the largest universities of applied sciences in Finland
  - 7 fields of study and 37 degree programmes
  - 10 degree programmes leading to Master’s
- The unit of telecommunications and e-business
  - Aims to educate international experts and future entrepreneurs in the field of ICT
  - Active learning and relevance to working life
  - Students are encouraged to work with industry in the region and take part in projects and practise enterprises
Field of telecommunication and e-business

- Degree programmes
  - Electronics
  - Library and information services
  - Information Technology (Finnish+English)
  - Business
    - Business Information Technology
    - Technological Competence Management

Company-like learning environment - ESCfi

- ESCfi (Education Support Centre Finland)
- Company-like learning environment
  - Operates like a company
  - Students run the operation
  - Different roles
    - Customers, management board
- Students from mainly two degree programmes; from Finnish and international degree programmes in Information Technology
About ESCfi

• Experiences and student opinions
  – Working in a company-like working environment has become the backbone of their competence development
  – Students have been able to achieve such experience and competences that would not have been otherwise possible

ESCfi in operation

• Provides software support and project implementation and design
• Students run the operation independently; different roles from technical specialist to marketing, team leading
• Teacher’s role is to mentor and guide; take part in planning of the operation, financing, recruiting etc.
ESCfi in operation

- Student’s responsibilities
  - Customer work
  - Cooperation with other organizations and companies
  - Organizing and resourcing the work and projects
  - Project management
  - Operational reporting, documentation
  - Learning
ESCfi roles

• Team leader
  – Organizing the work, resourcing, leading the team, following-up projects, marketing, making new customer contacts
  – Offers, contracts, budgeting

• Technical specialist (senior / junior)
  – Solving problems, taking part in projects (project management in some cases), customer contacts, documentation, cost evaluation, bidding

• Marketing
  – Customer retention and satisfaction
  – Marketing material, billing

ESCfi as part of studies
ESCfi learning modules

• ESC work
  – First phase of working in ESCfi
  – Support centre customer work
  – Problem-solving and trouble-shooting
  – Phone / email
  – Objectives
    • Achieve technical knowledge about supported products
    • Achieve customer work experience
    • Achieve team work experience

ESCfi learning modules

• ESC certification
  – Making certifications and exams
  – Part of quality assurance of the service
  – Mainly Microsoft certifications at the moment
    • Also Cisco certifications
    • IPMA project certification
  – Highly motivating; valued by employers after graduation
ESCfi learning modules

• ESC projects
  – Project size and topics vary a lot
  – Topics interrelate to other subjects
  – Students take part in projects after they have achieved basic knowledge of products and operation
  – Design and implementation projects
  – Feasibility studies

• Work placement
  – Fulltime work for 10 weeks
  – 2. and 3. year students

• Thesis
  – ESCfi development projects
  – Topics and assignments from customers and partners
ESCfi learning process

• Introduction period
  – Tutor assigned to all new students
  – Tutor helps to get started
  – Documentation, processes, routines, organization, systems and products

• Meetings (team, development, management)

• Appraisal interviews (1-2 times / semester)
  – Learning objectives, amount of working hours, certification schedule, taking part in projects, tasks and responsibilities, follow-up of last period

ESCfi learning process

• Learning plans
  – For every two weeks period
  – Learning objectives; different tasks and projects, amount of hours

• Learning diaries
  – Reporting the plan
  – Accomplishments and self-evaluation of learning
  – Evaluation of their operation in respect to other students and customers
  – Changes and problems reported also
ESCfi learning process

• Introduction period is the most difficult and creates anxiety in some students
• Most previous courses are teacher-led lectures or laboratory assignments
• In ESCfi the responsibility of learning and setting learning objectives is left to the student
• Independency, initiativiness, communication skills are required

Learning in practise

• Students work from 5 to 30 hours / weeks
• Work placement 40 h / week
• Support centre is open from 9 to 15
  – Team leader organizes so that somebody is always present / available by phone
  – No fixed working hours
  – Students work when they have free in their schedule
Competence development

• Students perceive that *they have achieved such experience and competences by working in ESCfi that would not have otherwise been possible*
  – Most importantly strong technical experience and knowledge including hands-on experience of solving real problems
  – Best practices from specialist in ESCfi network

Competence development

• More important competences
  – Social skills; customer work, team work, presentation, negotiation, project work, project management, team leading

• Other competences
  – Financial skills; budgeting, cost surveillance
  – Multicultural competences; both Finnish and international students involved
  – Business; learn the laws of IT sector
Linking students with industry and working life

– Active working
– Seminars, conferences and fairs
  • Students are encouraged to attain new contacts
  • In the beginning students go as pairs
– Customer contacts and projects
  • Satisfied customer is a valuable contact and reference
– Thesis
– Linked too early and too well?

Conclusion

• Best learning experience
  – Students have had to do all the work and solve all the problems themselves; "teacher has not saved us"

• Students see themselves as privileged
  – They can start their “career” early during their studies
Conclusion

• Feedback from companies and partners
  – Very satisfied with recruitments and service
  – They can rely on the student’s experience and competences in a way that is very supportive

• Other company-like learning environments
  – Network Support Centre Finland
  – More different contexts planned