

IBS Report

IBS Tallinn – E4 Dissemination Year

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Abstract - Summary

The title of this IBS was “E4 - Dissemination Year”

Trough this IBS, we in BEST wanted to present to the participants what E4 is and what are more or less the results of the work done by this Thematic Network.

The main topics of discussions were: mobility of students, recognition of studies, system of degrees and innovations in the field of engineering education in Europe.

Also the participants had the opportunity to get to know what E4 is from the presentations held by Anders Gustavsson, from EduCo and by the rector of the Helsinki University of Technology and member of E4, Matti Pursula.

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Introduction

Since E4 is not well known among the students, the IBS started with that a presentation were given to the participants by Anders Gustavsson, BEST member and E4 project coordinator within the EduCo, the Educational Committee of BEST. Also BEST was presented by members of Tallinn local BEST group and we were greeted by several officials from the Technical University of Tallinn.

Also, during a presentation session Mr. Matti Pursula, Rector of the Helsinki University of Technology and E4 member, made a presentation of E4 and some discussion took place. The main topic of this discussion was E4's Activity A5 and e-learning based problems. In addition to this session Professor Kaps from Tallinn Technical University made a presentation.

After the introduction into the topic, the participants were divided in two groups, and mainly both groups were discussing the same topics.

Innovation in engineering education in Europe

Innovation in engineering education in Europe was one of the first topics discussed at this IBS.

In both groups it was presented the concept, and the participants were asked to go deeper in some specific problems.

We started the discussions with a short brainstorming about teaching methods, old ones and new ones.

Here are the results:

- Seminars
- Presentations with multimedia
- Laboratory-work
- Research projects
- Demonstrations
- Articles and reports
- Summary
- Group work
- Group discussion
- Company visits
- Homework
- Self study

- E-learning
- Case studies
- Videotaping the lessons
- Internet (depends on the teacher) – material, information, exams, online seminars (forum and online chat), choose classes
- Laboratories (content, software)
- Contacts in industry (in Paris they interview people from industry for getting new knowledge etc)
- More practise PBL (problem based learning – some kind of problem in factory, like study case for students)

After this brainstorming we developed some traditional teaching methods, and also some innovative teaching methods.

Traditional teaching methods

After the brainstorming on teaching methods, we discussed a little bit about the traditional teaching methods, what are the problems and how can they be improve in order to be more efficiently.

Here are some ideas:

- Merging the theory and the practise – make the teachers explain why students need the knowledge
- Practice shortly after the theory
- Few labs (Norway, Greece) – more practical work
- Lazy students
 - to try to motivate students to learn
 - Tutoring and follow the students, Professors show that they are interested in the students
- Students only active in the last part of the semester (exam period), first 3-4 months without being so very active – more assignments all the semester
- Practice during the education, evaluation later
- Research based education
 - Students more active in the research of the Professor
 - Professor presents their research for the students
 - Students get to see what they can use their education in research projects
- You see the end of some work by participating in research projects
- Environmental issues - full classes, no audibility and no visibility from back, no or too many breaks.

E - Learning

Using the computer and Internet in the teaching process is valued as an important aid, but has advantages and disadvantages.

After the discussion the group members reached the same conclusion: e-learning can bring an additional value to the teaching procedure, by easing the communication between teacher and students, providing more information in an easy way (materials are available before the course) and spreading the information more easily.

As advantages we identified:

- The materials are available before the course
- It help the students for their self studies
- The students can choose the classes more easily (it is easier for students and for teachers)
- Online evaluation and exams
- The Curriculum is changing and is easier to provide the materials to the students (it is easier to put the materials online than to publish a book).
- Better for people who live away from the university (long distance learning, in the country)
- Safe a lot of time

As disadvantages we identified:

- Lose the human contact, loses the social aspect of teaching
- Not possible to be used in all the countries

One important conclusion, which we reached during the discussion, is that the e-learning methods of teaching must be combined with the traditional one in order to be efficient.

Evaluation of teachers

Also during this session a short discussion about evaluation of teachers took place.

Is often that it happens that the teacher is stuck with its own methods and don't what to search for new one's or he/she does not do his/her job properly.

In some countries, mostly the Nordic countries, there are evaluation methods also for teachers.

During the discussions some questions and solution arise:

- Questionnaire for every Professor, feedback to the Professors from students. This evaluation of the teachers is necessary, but do they look at it afterwards?
- Motivating Professors, make more students do their thesis with them as tutors
- University need to teach the teachers how to teach
- What to do about the old Professors? Legal retirement age for the old, "not motivated" Professors
- Some labs are irrelevant because of the old teachers who are not up-to-date
- Rewarding Professors
- Suggestion: student response to the teachers
 - Good response: good salary
 - Bad response: bad salary
- In France feedback from students can be the reason for firing (let go) of Professors, for example in Finland it doesn't change a lot, but can for example influence the Professor to make better. In a few countries it is believed that students have no influence.
- Can Professors choose what to teach?

Recognition of studies and diplomas- Mobility of students

In the last years, mobility of students was a big issue. After years of discussions the countries from Europe reached an agreement, which was materialised in Bologna declaration.

During this session, all the participants had the possibility to present the system from their own countries, to learn more about recognition of studies, ECTS credits and about Bologna declaration.

As we know each country, sometimes even each University, has its own system. The number of abroad study programs grew in the last years, and also the number of students. Even if these programs are running from some time already, there are still some problems. Some of them are well known and every country and the European Union are making efforts to resolve them.

After a short presentation of the recognition system in each country (more from the one's from where the participants were), the discussions upon recognition of studies and diploma, Bologna declaration, and how it will influence them, took place.

Problems:

- Taking exams again...
- Compatibility between the systems, you can find yourself in a position where you are studying the same subjects in two places.
- ECTS – not all the countries are using them yet.
- Different schedules – mainly the dates of the semester
- Quality of education – there are countries where the quality of courses is low
- Language – mostly the courses are given in the language of the country, and there are not so many programs in English
- Legal issues - traveling, visas (work/study), translating documents etc.
- Name of degrees
- Bachelor and Master are not separated in some countries (one cycle)
- Getting accepted / entering
- Accommodation, money, lifestyle, different cultures... internet connection
- Information before going as an exchange student.

Recognise your diploma abroad – important or not? Why

- Important because of mobility
- Other people know what your knowledge is
- Don't need to start all over again if you go in another country
- Work will be more important later
- A diploma doesn't say that you have the knowledge, but it shows what you've studied.
- USA: new test to prove that you've good enough to work, a test to show you know your basic subjects
- Certain level of quality (in the university)
- General tests: if you perform well, you can choose between several good schools
- Quality system of universities so you know which is the best, and you know how good your university is (some kind of voluntary accreditation for universities across Europe)

Mobility → Quality? How to preserve quality? And be mobile? Which obstacles are there? These were some questions that arise during the discussions, and the participants tried to find an answer.

- Projects: multi-disciplinary (example: co-operational teamwork with students from different faculties to work with current problems)
- Management & economy, marketing for engineers
- Case-study with companies, realistic
- Technical English
- Practical skills

The last question related with mobility of students and work was related with the diploma supplement. Most of the participants didn't know about this, and they don't see to much use of it. It can tell what you, as a student, know, this besides the grades, It shows your knowledge concerning a certain field. Should the grades be on the diploma supplement or not? Was a big question that rose from the discussion but the participants were not able to give an objective opinion, because they don't really know yet what actually a company is looking at when they ask you degree.

Also the universities are separate from the companies, and here are some opinions of the students concerning this problem.

- As a fresh graduate, you don't know everything before you start to work, but you should be prepared. It's important for students to know to **LEARN HOW TO LEARN**
- Companies do their part, get more involve in the process of learning.
- Learn the basic, and know what is basic and what is not
- Learning is a long process, so it has to be done continuously.

Conclusions

During the four days of the IBS, the participants learned more about E4 and their outcomes. The facilitators or the discussion groups presented them some "hot" topics related with education in Europe. Also they presented to the participants what was done until now, by E4 and different others organisation, concerning the topic that were discussed.

Also, one of the goals of this IBS was to make the students get more involve in education matters, and to know that they can influence what is happening...their opinion counts!