

INTERACTIVE LEARNING IN THE CLASSROOM – NOT A COMPETITOR BUT A PARTNER FOR E-LEARNING

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ABSTRACT

Today all advanced and ambitious universities are developing virtual learning applications. Virtual university, e-learning is expected to solve many acute resource and substance problems in the academic world. However, Internet-based education seems to suit only for a certain part of learners and teachers and it seems to solve only a certain part of university problems. Also it seems to have some disadvantages. Internet is a wonderful tool in connecting huge amount of people and transferring amounts of data very fast. However learning and teaching is much more than those. Sometimes learning needs inspiration and enthusiasm as well as certain atmosphere that can be created only by human experienced lecturers and their personal presence. On the other hand sometimes students need more a team than a computer and more concentrated thinking than lots of new information.

Problem based learning (PBL) has also been introduced since several years and in many cases it suits very well, it activates the students and give a natural learning motivation. PBL has been introduced in order to create an active learning process, at the same time it also releases teachers from routine lecturing and preparation of lectures. Sometimes in PBL work students, however, feel that they are just left alone while the teachers want to use their time to something else. Also the experiences show that both problem based project work and Internet based individual learning suit very well to the most talented students while those who are less motivated or not so well oriented will lose track of the studies.

Interactive learning in the classroom -approach happens in the traditional classroom. The teacher has made a syllabus for the course and the course sessions happen normally weekly, sometimes slightly squeezed, so that instead of two hours session there is a three-four hour session and the amount of the sessions is then smaller, respectively. Students come to the sessions that we call as “studios” like to a normal lecture. Normally the session starts with a short introduction to the theme, the lecturer gives a short presentation of the theme and the problems in it, this lasts for example one hour. The lecturer might use for example PowerPoint slides that are also printed as handouts and delivered for the students before the session. If Internet is used this material can be available there. The second part of the session is the working part. The lecturer has prepared material and problems for the students. Students work in small groups, 2-3 persons. Each group gets one problem with the required material, books or articles. Now they have 1- 1,5 hour time to read and solve the problem, as well as prepare an ad-hoc presentation about the results. During this part students are encouraged to move to another room if they need more silence, to have a coffee break and to discuss in the

group as well as to make questions. The teacher is there available, as well as dictionaries and other source books. This short working period is often quite intensive and students really try to solve the problem, because they are expected to give the presentation. The third part of the sessions is for the presentations. Each group of students give their solution to the problem, very informally but clearly. If they did not solve the problem, the teacher will be ready to present it. Each problem is presented and then the session is closed. If the time is too short the work can continue next time.

In Helsinki University of Technology, Department of Surveying we have used this studio-learning some Geoinformatics courses like a course called “Spatial Data Algorithms” in which a wide scope of algorithms is dealt with. In every session there is a theme, for example “Variations of Voronoi-diagram and their use in GIS – applications”. Every group gets an article and an algorithm to be studied and explained. The materials and problems are copied for each student and in the exam they only have to know as much as is explained in the sessions by other students or the teacher. Learning results in this course have been amazing. For example the well-known Delaunay –triangulation algorithm which earlier was difficult to learn by some students was learned by all in this method. Learning is based not only on information but also on interaction, discussion, intensive reading, slight stress because of the presentation – and most of all the personal presence of support and guidance available all the time.

In this paper an alternative for pure PBL as well as pure e-learning has been given. The difference between the two mentioned and our approach, which we call as “interactive learning in the classroom”, is that the role of the teacher is strong and he or she gives his or her knowledge and experience totally for the teaching session. The main goal is to make learning process more effective and the problem solving quicker – by giving immediate help instead of showing the way to the library or Internet. Also in this method the learning session is well prepared and all material is selected for each problem. The learning session is very intensive and sometimes stressing but the results are good. Interactive learning is very demanding also for the teacher because he or she must be all the time ready to solve minor problems, help with Mathematics and English as well as terminology

As stated in the title of this article, interactive learning in the classroom is not a competitor to Internet based e-learning, but rather a partner which makes learning and teaching more effective and adds the human intelligence and experience as well as communication and atmosphere to the sessions. In HUT we are going to develop both Virtual Academy and classroom methods in a balance.

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