



A case study on students' collaborative learning supported by a Webportal

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Abstract

The Department has 2500 students, its strategic development plan states that, due to globalisation and increasing use of technology, it will soon have a few hundreds students as local attendants and thousands as virtual or distant students, from within and outside the country.

The paper reports on a case study of a concurrent venture. The participants are the staff of the Department, its students and a technological supplier. Following the authors' experiences and Kolb's work, models of students learning were built, contents of courses were modelled and a synchronous/asynchronous webportal was developed as integral support. Collaborative activities and teamwork were introduced. The main clients –students– have had an enthusiastic and most positive response.

The paper begins with some of the characteristic of the case study, which includes authors' thoughts and a briefing to existing theories related to the project. The research approach is summarised and products developed are described. Finally, conclusions are presented.

Keywords

Education - collaborative learning - Webportal - case study.

1. Case study

Chile is an emerging country (formerly developing country and previously under developed country), despite recent governmental efforts, education in general is deprived and innovation in higher education is rarely conducted. With an educational milieu based on teaching, we thought we ought to try and change the centre to the students, making intensive use of technology (Nicolopoulou and Cole 1993 and Rosemberg 2000). We also beard in mind reported works in similar areas (Newlands and McLean 1996). Our desire was to move from a traditional towards a modern approach. From the role of the educator as transmitter, unique assessor, and decision-maker of what and how to teach; which makes students dependants and individualists. Towards educators as facilitators, managers, planners, designers, facilitators and guide student's learning; thus students are receptive, autonomous, participating, collaborative and engaged (Cervera and Gonzalez 1997). This

form of teaching and learning process, supported by information technology, or e-learning, are described and exemplified by Rosemberg (2000) and Salmon (2000).

For us, and as Gagne et al (1992), learning is understood as a permanent change of behaviour, as result of exercises, training, revision and experiences. Additionally, learning takes place through a continuous and recurrent sequence of experiences and, as experiences are insufficient, they must be accompanied by reflexive thoughts, abstract concepts construction and trying out these concepts in new experiences; beginning a new learning sequence (Kolb 1991).

To advance on alliances with suppliers, the strategic approach (Porter 1988) was employed and, to conduct evaluations of courses, the model developed at Heriot-Watt University was used (LTDI 1998).

To accomplish the change of approach a project was set out with four goals. To constitute a working party to research into the new approach to teaching and learning and to design and develop the technological support. To establish partnerships to update the departmental technological platform, including network, servers, PCs and software tools. To prototype and evaluate the new form of conducting the teaching and learning process, which is reported here. To expand this new form to a dozen of courses and then consolidate it in a greater number of courses of the Department.

Various methods were used to achieve these goals: Bibliographical analysis in both libraries and Web. Interviews with potential partners to explore and establish strategic alliances. Interviews and focus groups with students to model their approaches to learning. Design of courses, including content, activities and assessment to implement Kolb's view. Modelling of content navigation to harmonise with students learning styles to be supported by the Webportal. Interviews questionnaire construction and focus groups (Krueger 2000) to evaluate de courses.

2. Products of the case study

Four products were developed during the project: students' learning models; courses modelled; software tools and Webportal; evaluation instruments.

1.1. Students' learning

Students resulted to be either deductive or inductive. For deductive students, the content to be uploaded in the Webportal was modelled in three levels. The first level briefly presents the main concepts with links to a second level with a detailed insight into those concepts. Here the links are to primary material: articles, papers, lecturer's notes, URLs and others.

For the inductive students a Webportal map is provided, so students can navigate through different contents and make relations to achieve their learning.

1.2. Courses

Content and activities were developed for courses. Following Kolb's work, there was one conference per unit to construct the abstract concepts. The conferences presented the main topics involved in the unit, the pertinent navigation, the activities to be carried out with the Webportal support and the unit's reading assignment.

To provide students with experiences, teams of three students did a project throughout the course. The project had as goal the solving of a real world problem, which had to be taken from private or public companies. The project also provided opportunities for new experiences because teams had to analyse a problem -new for them- in a company.

To give students opportunities of thought and observation, seminars were organised with three or four teams. The seminar aim was to assess and feedback the advance of the project.

Additional support was structured through responses to students' e-mails, which were given within 24 hours. 'Chats' between the teaching team and students and among students were frequently conducted.

1.3. Software tools

Software tools were developed (Lopez et al 2001) to support lecturers work. Through a simple dialog box, the tool facilitates uploading content and activities. Preferentially, content ought to be modelled in the three levels previously described. The tool allows the lecturer to organise on line or of line tests and other assessments. Also, the lecturer can co-ordinate chats and interest lists. Lecturers can advice students with additional reading through the introduction of bibliography.

Another tool provides access to students to the content and activities for all courses they are undertaking in the e-learning manner. These courses had previously been modelled by their lecturers and uploaded into the Webportal. . Students through this tool can also know partial and final marks and participate in chats and interest lists defined for them.

Tools include an e-learning engine to connect software clients with both Web and database servers for asynchronous and synchronous content and activities. Software tools also comprise administration of the synchronous and asynchronous components of the Webportal.

1.4. Evaluation instruments

Questionnaires to be carried out before and after the course were designed and tested in focus groups. Later, these questionnaires were filled in by the seventy three students in the course. The initial questionnaire showed that only one student had used Internet for learning purposes and that 14% of them had used it for any use, that course organisation and Webportal were extremely useful; and that they appreciated the opportunities to have reflexive thoughts in the seminars.

In the final questionnaire showed that most students (95%) found that the course organisation (conferences, project, seminars) was good for them. A majority (61.3%) found that the e-learning activities incorporated into the course represented a greater workload, compared with other traditional courses. About a quarter of the students used the Webportal on regular bases, while the others visited the Webportal a couple of times per unit. The last question asked students whether they would take other courses organised in a similar way. Their response was encouraging: 83% said that they would do it.

1.5. Findings

The next remarks can be made as a way of conclusions.

Students remarked that they gained a deeper knowledge in the course because of the following reasons: the content and activities of the course were modelled and were supported by a synchronous and asynchronous Webportal. The Webportal could be used on students' own time and as often as they felt necessary.

Another important finding is that students realised that seminar and collaborative work had significant potential as a way of improving their study methods.

Students stated that they would repeat the experience, which was highly rewarding for the teaching team, but has a serious implication, in an appropriate time scale, should reach most lecturers and students. If not, there would be students with access to various e-

learning resources ('infowealthy') and students without ('infopoor'). Not a desirable discrimination!

The growing teaching activity of the Department will be highly benefited from this approach. It will not only facilitate course teaching locally, but also, and more importantly, those courses which are been given in other cities and soon abroad.

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