Using EPO to Stimulate Learning in the Health Sciences

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ABSTRACT

Maastricht University is renowned for its use of Problem Based Learning (PBL) as the primary educational form since 1976. Although PBL has been immensely successful (Schmidt, 2001) it also has its drawbacks, such as the paucity of 'real' collaboration. This article describes an educational experiment aimed at implementing Project Centered Learning (PCL) for part-time students at the Health Sciences faculty supported by an Electronic Project Environment (EPO in Dutch). The results show that PCL is a good educational method for third year students in the Health Sciences and that the EPO offers a valuable support to the group work of these students who live all over the country. The study also reveals some aspects of PCL and EPO that need rethinking and possibly revision in further experiments.

Keywords

Collaborative learning, Project-centered learning, Computer Supported Collaborative Learning, Distributed learning groups, Part-time students, Health Sciences

INTRODUCTION

Problem Based Education (Barrows & Tamblyn, 1980) has been the central tenet of education at Maastricht University (MU) since its inception. While still successful, educational designers are beginning to question whether this educational method is suitable in teaching students to rely more on each other to find relevant information for solving new problems. To make thing even more complicated, these new problems are usually ill defined requiring excellent group decision-making skills.

One alternative to PBL is Project Centered Learning (PCL). PCL activates students to learn both the content and the processes of their chosen field by having them work collaboratively in teams on a project to deliver a product within a well-defined time span. Not only are the projects authentic, but also the work situation is authentic. Students work in teams performing the roles that they would perform if they were actually in a working environment.

This contribution describes an experiment in which a commercially available electronic project environment (EPO) was used to facilitate PCL with two groups of third year part-time students at the Health Sciences faculty at MU. The environment is based on the Basic Support for Cooperative Work project of the German National Research Center for Information technology. (Appelt, 1999; Bentley et. al, 1997) The primary goals of the experiment were to increase collaboration and active studying behavior. The students in this study are geographically dispersed, work differing shifts, meet only once a week, and have hardly any contact with each other between the meetings.

METHODS

Twelve third year part-time students from the Health Sciences faculty (3 males, 9 females) took the course *Making decisions about healthcare*. The students were randomly divided into two groups of six persons. Additionally, a tutor and a technical assistant were assigned to each group.

The project environment consisted of a private and a group space. The group space contained a document archive, discussion forum, project calendar, task and Gantt planning facility, contacts, participant's directory, wastebasket, group announcements, and web based help system. The environment is accessible through a web browser.

The course was consisted of three subprojects. The final task required an integration of the previous two subprojects. Each subproject ended with a joint report and an oral presentation by the members of the group. The course lasted for 64 days; each subproject approximately 3 weeks. Meetings took place on a Friday every fortnight.

To evaluate the experiment, three measurements took place: pre-experimental, intermediate, and post-experimental (all questionnaires). The first questionnaire contained items from the Computer Attitude Scale (CAS) (Nickel & Pinto, 1987), and from the Computer Understanding and Experience Scale (CUE) (Potosky & Bobko, 1998). Additionally, data was gathered from the daily activity logs produced by the electronic project environment.

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RESULTS

The results show that the experiment was successful in many ways, while at the same time providing insight into the problems of PCL that need to be resolved.

First, there is the pleasure the students reported about working in teams on a project. They enjoyed working together on an end product, and it stimulated them to combine theory and praxis. The students also reported that the study time was higher than in PBL, that it stimulated discussion more, and appealed more to relevant professional skills than PBL. However, the students also reported that the theoretical knowledge acquired was fragmented. The cause behind this feeling of fragmentation is the division of labor during the project. Each student studied a different part of the subject and had to rely on reports from others.

The EPO proved to be a very good means of supporting asynchronous collaboration. The results clearly show that the students appreciated the EPO capabilities to exchange documents, discuss problems and plan their activities. It is interesting to note, that the students' mediocre computer skills did not affect their achievements in a negative way. They experienced EPO as a useful tool and fun to work with. In other words, contrary to what is often reported, computer skills are not a dominant factor of success in using an electronic environment.

Finally, the results showed that the students clearly had to get used to this open-ended type of education. They had to learn how to plan their study, they had to spend more time studying, and that it broke up their normal studying routine. This was, however, exactly one of the objectives of the experiment.

CONCLUSIONS

Overall, the educational model, the project work and the collaboration all appreciated highly by the students, as well as the EPO. The experiment succeeded in increasing time spent on studying and in spreading study activities across the whole week. In general then, it can be concluded that this experiment met its objectives. PCL turned out to be a good educational method for third year students in the Health Sciences and the EPO offered a valuable support to the group work of these part time students who lived all over the country. However, there is room for improvement concerning the fragmentation of the acquired knowledge, the clarity of the learning objectives, and the size of the projects. Some questions remain. This study was done with part time students who lived far apart from each other. This does not mean that the EPO works in the same way for full time students who meet each other frequently in the faculty buildings. A next experiment will address this issue.

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