A Framework for an Adaptive Virtual Learning Environment

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Abstract. This paper is actually an adapted M.Sc. proposal. Work on this degree has only just start so there are no results to be presented. However, during the CSAW presentation further details will be given about research problems and how they will be solved.

1 Research Problem

During the e-learning hype many Virtual Learning Environments (VLE) were developed and educational institutions started pushing forward towards offering E-Learning services. The problem that has been identified is that theses environments are not meeting a good educational level, the majority of theses solutions were being developed with the aim of rendering a profit. The solutions were filled with new technology features and gave less importance to the teaching techniques that a tutoring system should have.

A study has shown that 50% to 80% of students taking an online course tend to drop out before the actual termination of the course [2]. The speed to market, the focus on new technology and not on instructional design, boredom, lack of understanding of learning and teaching, and the lack of understanding of the unique teaching advantages of electronic media [1] can be identified as the main reason for which E-Learning is not being so successful.

When you analyse the learning process one identifies the following stages: a pupil forms a desire to acquire certain knowledge which a tutor possesses and is prepared to offer to the pupil; The tutor tries to deliver this knowledge to the pupil who is continuously assessed; The progress of the tuition is dependent on the learning progress of the pupil; The pupil acquires that knowledge when he/she proves to be able to solve a problem using the material and knowledge gathered during the tuition period.

Therefore a good VLE should, in my opinion, offer materials and support management services where tutors can manage the course material and offer support for such which students can acquire and use, offer research management services where students can research more on the course and finally offer assessment management services where the student is assessed on the his/her knowledge. With the use of these identified services the VLE should adapt the course delivery process so to give the ideal environment in which the student can acquire the desired knowledge.

This means that the way that the course is delivered to the student is dependant on the progress of the student. An essential part of the framework is the establishment of a standard for which any addition program interfacing with the framework should conform with. This standard would basically require that a foreign program should be able to related to the framework how much the student progresses in his/her understanding of a course by using the application.

Therefore a material delivery program would interface with the framework and report that the student received a certain level of knowledge through material. A research program would interface with the framework and report that the student was submitted to certain knowledge. An assessment program would interface with the framework and report how the student performed in solving a problem. With all this information gathered the framework would determine the suitable manner in how the course delivery should proceed.

References

1. Gary Woodill, Ed.D. - Where is the Learning in E-learning?, located at www.e-learningguru.com/wpapers/e-Learning_analysis.pdf
2. Delio, Michelle (2000) Report: Online Training 'Boring'. Wired News, located at www.wired.com/news/business/0,1367,38504,00.html