Using Software Technologies to Enhance Students Learning: An Experience in Software Project Management Course

Mohammad Alshayeb, Information and Computer Science Department, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia

ABSTRACT

The use of Information technology (IT) tools in teaching provides innovative learning environments that increases students’ interaction with instructor and among students themselves. It is expected that the use of technology to enhance student learning experience. In this paper, I report my experience in teaching software project management course using different technologies. A survey was conducted, at the end of the semester, to evaluate students’ experience; the student feedback indicates that using technology in teaching enhanced their learning experience.

Keywords: Course Communication, Instructional Technology, Students Learning, Technology in Teaching

INTRODUCTION

Many universities adopted different computer related technologies in education, such as and communication technologies (Alavi & Gallupe, 2003) and multimedia (Cutrim Schmid, 2008; Proserpio & Gioia, 2007). Other engineering education (Iskander, 2003; Stern et al., 2006) tools have been also recognized due to the growth of web and other computer technologies. Many new technologies have been proposed such as wiki, synchronous chat environment, email, instant messaging, and Facebook (Connell, 2006; Farmer, 2004; Fichter, 2005). Babur used technology in teaching a computer engineering course and found that teaching was improved when using computer technology. He found that the approach helped students to increase their capability for understanding (Deliktas, 2011).

Beichner et al. reported that students taught with a technology-rich and collaborative approach outperformed those who were taught with the traditional teaching method. They also found that students’ satisfaction and retention rates were also higher (Beichner et al., 1999). Aziz presented the design and implementation of collaborative methods of teaching using virtual

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collaborative environments such as cooperative learning and problem-based learning. He found that computer-based techniques enhance the teaching and learning processes in mechanisms and machine dynamics (Aziz, 2011).

The use of electronic media has been recognized as an effective tool in delivering course materials (Aggarwal & Bent, 2000; Borkowski, Henry, Larsen, & Matelik, 1997; Grasha & Yangarber, 2009). Barbosa et al. presented an experiment that involved the intensive use of mobile technologies in the activities of a Computer Engineering course. They found that the use of mobile in teaching improved the learning in addition the interaction between learners is also enhanced (Barbosa, Hahn, Barbosa, & Segatto, 2012). Boticki et al. presented a study on using smartphone devices in computer engineering education. They developed an Android-based smartphone application for learning sorting algorithms. They concluded that the approach is an effective way to learn sorting algorithms (Boticki, Barisic, Martin, & Drljevic, 2013).

Apart from mobile learning (Romero, Ventura, & Bra, 2009; Vavoula & M. Sharples, 2008), other technologies were used such as video gaming (Watson, Mong, & Harris, 2011) to study history classes. Game-based learning was also used in the learning process. Gaming-based learning may use games in learning or can stimulate the elements of games such as awards, collecting points and achieving high scores in the games. These motivate students to be involved in the game more and hence enhance their learning process (Ebner & Holzinger, 2007).

However, research has also shown that technology may have its negative effects (Austin & Brown, 1999; Chou, 2004; Lim, 2002; Mayer, Heiser, & Lonn, 2001; McCabe, Butterfield, & Treviño, 2006; Rockwell & Singleton, 2007). In this paper, we investigate whether using technology can enhance student’ learning. This is done through applying different technologies while teaching the software project management course.

THE COURSE DESCRIPTION

Software project management course is a required course for software engineering students and can be taken as elective for the other engineering students. It is a sophomore level course that requires junior standing as a pre-requisite. In involves three 50-minute lectures per week. The main objective of the course is to teach students how to apply appropriate project management techniques in managing software projects.

The course includes two projects, which are team-based projects. The course has four main outcomes that is upon completion of the course, students should be able:

1. To apply all appropriate project management techniques.
2. To enhance communication and writing skills.
3. To learn how to work in teams.
4. To instill life-long learning skills.

Since all students who are taking the course have good IT background, it was easier to use many technologies in teaching the course. In this particular offering, there were 25 students in the class distributed as follows: 9 software engineering, 9 computer engineering, 5 computer science and 2 systems engineering students.

To measure students’ learning we used the direct survey questions, for example using questions like “Using technology in teaching this course enhanced my learning experience”. It is hard to quantify students learning
Global Trends in Digital Governance: A Longitudinal Study
www.igi-global.com/article/global-trends-digital-governance/57974?camid=4v1a