Learning Management Technology and Preservice Teachers

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Molly Y. Zhou
Dalton State College, USA

INTRODUCTION

Instructional technology has been introduced in education although the integration of it is far behind other disciplines, such as medicine, business, and economics. Instructors are compelled to incorporate educational technology in the classroom, but often these technologies are used as information delivery tools rather than as to support cognitive learning (Juniu, 2006). Research on the use of technology in education yielded various results in perceptions, usefulness, and effectiveness. In other words, simply using technology tools does not ensure a quality education. The purpose of this paper is to explore the impact of the learning management technology DesireToLearn (D2L) on preservice teachers. Three research questions guided the study on the use of learning management technology: 1) How has D2L enhanced preservice teachers' learning of technological skills? 2) How has D2L supported blended learning impacted preservice teachers' learning? 3) How have D2L supported blended learning experiences impacted preservice teachers' disposition towards the use of technology in their teaching and learning?

BACKGROUND

Technology has been introduced into education but the results of technology integration in the classroom needs improvement (Fluemerfelt, 2013). Instructors are compelled to incorporate educational technology in the classroom, but often these technologies are used as tools for information delivery rather than as means that enhances cognitive learning (Juniu, 2006). Vallance and Towndrow (2007) suggested that educators are not always able to decide what is pedagogically desirable in teaching and learning in terms of technology integration and effective use of technology. In other words, educators need help in building their capacity to integrate technology in education and to practice informed use of technology in the classroom.

The gaps between technology integration and informed use of the technology were obvious in literature. Lim, Zhao, Tondeur, and Tsai (2013) revealed two significant gaps in educational uses of technology: first, usage gap-compared to how and how much today's students' use technology outside school, in-school technology usage is much less intensive and extensive; second, outcome gap-compared with the outcomes achieved through investment in technology in sectors outside education, the gains in terms reduced costs and increased productivity achieved by schools is significantly smaller. To maximize technology integration and informed use of technology in teaching and learning, Vallance and Towndrow (2007) recommended four areas of examination: activities, training, collaboration, and shared space. To be successful in integrating technology in education, purposeful reconfiguration of the curriculum to incorporate productive new technologies and to engage forward-looking attitude is necessary (Corbett, 2013; Schrum & Levin, 2013).

In addition, literature suggests the integration of technology be addressed at the pedagogical level (Okejie & Olinzock, 2006; Payne & Reinhart, 2008). Powell and Kalina (2009) discussed the impact of constructivism in effective classroom. Essentially, there is no difference in effectiveness in the classroom vs. online learning environment. Teachers' understanding of constructivism and instructional strategies in online environment promotes best practices to differentiate learning in the meanwhile to encourage interaction and collaboration among learners (D'Agustino, 2012).

In that regard, blended learning has been recognized as a form of technology integration with great potential

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in education. Successful blended teaching and learning occurs when technology and teaching inform each other in a blended environment. Hosler (2013) commented on the potential of blended learning in that materials become dynamic to learners when they reach students of varying learning styles. As a teaching and learning method of the 21st century, blended classrooms has the potential to engage students in a truly differentiated way to meet students' diverse needs (National Association of Independent Schools, 2012).

To successfully differentiate instruction addressing students' needs, teachers and students need to have solid training on technologies. Moreover, Delaney (n. d) suggested instructors of blended design need to manage students' expectations and not to be too flexible on due dates. With proper training and clear understanding of expectations and technological skills, teachers and students can thrive in blended learning. The implication of that is extensive: more time for reflection, more critical thinking, increased technological skills, more mobility and flexibility, increased student engagement, and enhanced collaboration among teachers for resources, planning, and instructional practices (Adams, 2013; Chai, Joyce, Ling, & Tsai, 2013; Charles & Dickens, 2013; Nussbaum et. al., 2009).

What does the future hold for technology integration in education? Opportunities and barriers blend. There are opportunities in that technology will impact teaching and learning and there are barriers in that pedagogical use of technology is an ongoing debate. In terms of integration, common complaints were time needed for planning and implementation was not always in place, and technological support was not always available (Jokic, Pardanjac, & Radosav, 2009). Recent emerging technology cloud computing has offered some solutions for educators in that sense. It has provided effective IT administration, low cost service, equitable access, enhanced student engagement, easy and shared planning, more collaboration and increased continuity in teaching and learning (DeNisco, 2013; Ovadia, 2010). Furthermore, proper integration of technology in education extends the boundaries of the classroom to facilitate international communication and global cultural education (Stephens & Hennefer, 2013; Wang, 2011; National Association of Independent Schools, 2012). New technologies, such as cloud computing, are more than a possibility for preservice and in servive teachers to facilitate students' learning experiences.

MAIN FOCUS OF THE ARTICLE

The main focus of this article is to examine the impact of the learning management technology DesireToLearn (D2L) on preservice teachers. Three research questions guided the study on the use of learning management technology: 1) How has D2L enhanced preservice teachers' learning of technological skills? 2) How has D2L supported blended learning impacted preservice teachers' learning? 3) How have D2L supported blended learning experiences impacted preservice teachers' disposition towards the use of technology in their teaching and learning?

The setting of the study was a small four-year college in north GA. Participants of the study were 75 preservice teachers enrolled in the school of education at the study site. The instrument of the study includes 25 5-point Likert scaled questions on preservice teachers' use of D2L for their learning and four open-ended questions. Data were collected at the beginning and the end of a 16-week semester in 2013. Quantitative data were collected and analyzed by using SPSS. Qualitative data were collected and analyzed to see themes and patterns.

Issues, Controversies, Problems

With the use of technology in education, one fundamental question asked was how to use technology to benefit teaching and learning. Instructors are compelled to use technology in teaching but many use technology for information delivery rather than for cognitive development and thinking (Juniu, 2006). In other words, simply using technology in education does not ensure a quality education. Research on the use of technology in education yielded various results in perceptions, usefulness, and effectiveness. At the pedagogical level, debates exist between behaviorist approach and constructivist approach. The building principals of Learning Management System (LMS) technology could favor one or the other or both (Payne & Reinhart, 2008).

How does the use of the Learning Management System that was built on principles above impact preserve and in service teachers? In many ways a Learning Management System could impact preservice and in service teachers. Studies showed that perceived importance of tasks, perceived usefulness, ease of use,