Abstract

Realizing the importance of personalization and interactivity in management education, this research-in-progress paper introduces an ongoing study that investigates the benefits of using blogs as a communication platform for pedagogical purposes. Based on Alavi and Leidner’s 3-tier framework for Technology-Mediated Learning (TML) and classic learning theories, this study intends to explain how blogs would enhance management education by identifying key indicators of blog users’ psychological learning processes as well as examining how these processes will be affected by the blog technology. The experimental design and data analysis methods are also explicated.

Keywords: Blogs, Constructivism, Technology-Mediated Learning, Management Education

Introduction

Current knowledge-based economy and turbulent business environment both pose tough requirements for management education offered by universities (Alavi and Gallupe, 2003); however, traditional classroom instructions seem inadequate to meet the increasing needs of business-school students for lack of involvement, flexibility and interactivity (Leidner and Jarvenpaa, 1995). Some schools have attempted to deal with this problem through the implementation of technology-enabled alternatives. Although a number of empirical studies found “no significant difference” on student learning when technology-mediated learning are compared with traditional pedagogical methods (Alavi, et al., 1995; Arbaugh, 2000b; Hiltz and Wellman, 1997), most researchers have acknowledged that the effectiveness of applying IT and Internet in learning depends upon how well the technology supports students’ learning processes, as well as its appropriateness for a particular learning situation (Leidner and Jarvenpaa, 1995).

In the current research, we plan to investigate the effectiveness of using blogs (also known as weblogs) in management education. A blog is defined as “a frequently updated website consisting of dated entries arranged in reverse chronological order so the most recent post appears first... Typically, weblogs are published by individuals and their style is personal and informal” (Walker, 2003). The present-day format initially appeared in 1996, and the term weblog was later shortened to blog and spawned diverse grammatical uses such as verbs, as in blogging, and nouns, like blogger (Javier, 2005). Since mid-1999, blogging as an online activity has been increasing exponentially. The well known blogosphere watcher and blog search engine Technorati tracked around 56 million active blogs last October. By January 2007 that number had grown to 63.2 million, with 175,000 new blogs each day (Dalton,
Blogs afford features such as hyperlinks to other blogs and related Web sites, instant online publishing without requiring much technical skill, and ways for others to post comments/feedbacks (Du and Wagner, 2005a). These characteristics make blog an ideal learning platform in management education.

Research on applying blogs in management education is still in its infancy. Although a few conference papers have studied success, motivations, and communications of blogs (Du and Wagner, 2005b; Herring, et al., 2005; Ma, et al., 2006), very few of them have focused on applying blogs in education except Du and Wagner’s (2005a) work exploring the impact of blog use on learning. Therefore, the objective of this study is to examine whether or not blogs could be applied to facilitate management education and improve students’ learning outcomes. We will also investigate how students’ internal psychological learning processes are influenced by the specific properties afforded by this new Web-based technology.

Research Framework

**Technology-Mediated Learning**

Technology-Mediated Learning (TML) refers to a learning experience that is significantly moderated through the use of information and communication technology (Leidner and Jarvenpaa, 1995). Most relevant studies have compared various forms of TML, focusing either on the influence of technology features on learning outcomes, or on the comparison of psychological processes through which learning occurs. However, the relationship between the Information Technology (IT) and internal psychological learning processes has been largely missing.

Based on a brief review of TML research in the IS field, Alavi and Leidner (2001) developed a three-tier conceptual framework for TML research, contending that technology features can engage psychological processes of learning that will in turn result in the desired learning outcomes. This framework could answer the important research question of “How does technology enhance learning?”, and thus is adopted by this study as a theoretical foundation. This framework is also consistent with Zigurs and Kozar’s (1994) integrated research framework using an Input-Process-Output (IPO) model.

**Learning Theories**

Over the past several decades, a substantial amount of research has been conducted on the construction of learning theories and models so as to provide a theoretical foundation for effective education. However, there is still no single or unified theory. Leidner and Jarvenpaa (1995) made a comprehensive review of major learning theories, such as objectivism, constructivism, collaborative constructivism, cognitive constructivism, etc.

Objectivism represents a traditional view of learning, consisting of transmitting knowledge from the professor to the students and allowing each student to master this knowledge independently. In contrast, constructivism shifts from instruction-focused learning to a learner-centered learning and teaching style, where the instructor’s role is to support rather than to direct. Correspondingly, management education particularly emphasizes cultivating the capabilities of applying knowledge from textbooks to practice and participating in team-based learning. Constructivism underlines authentic tasks in a meaningful context rather than abstract instruction out of context (Arbaugh and Benbunan-Fich, 2006; Leidner and Jarvenpaa, 1995), which make it particularly applicable for management education.
Constructivism is based on the assumption that knowledge is created or constructed by every learner, and students learn better when they are enabled to discover concepts themselves rather than when they are instructed (Leidner and Jarvenpaa, 1995). Students will benefit if they actively engage in learning activities, allowing them to repeatedly construct new knowledge and improve their understanding (Du and Wagner, 2005a).

A distinctive feature of blogs is personalization. In addition to owing absolute control of the website’s contents, bloggers could even determine some of the presentation features (such as the layout of their websites, the labels to categorize entries, and whether or not visitors could leave comments, etc.). This characteristic is particularly appropriate to support the learning theories of constructivism, assuming that learning is best accomplished by engaging students in constructing knowledge themselves. Research has shown that even introvert students who typically don’t participate in face-to-face discussions are participating in blog writings and discussions (Lowe and Williams, 2004). Thus, we assume that:

H1a: Students will participate more in blog-mediated courses than in traditional learning environments.
H1b: Participation will be positively associated with students’ learning outcomes.

Constructivism also contends that students, rather than the instructors, must control the pace, sequence and content of learning (Leidner and Jarvenpaa, 1995; Milheim and Martin, 1991), making flexibility another imperative factor in instruction. Flexibility here means being both place and time independent, allowing course conversations to continue over extended period of time (Arbaugh and Duray, 2002). Some researchers have found that the flexibility of courses may in fact enhance student learning and foster positive attitudes (Arbaugh, 2000a; Hiltz and Wellman, 1997).

Compared to other journal keeping and interaction platforms, blog offers its users a much higher level of flexibility, thanks to its Web-based characteristics. This is particularly crucial for students as they could now select more freely the time and place that they would like to engage in the learning processes. As students could publish/edit blogs whenever and wherever they like after class, this delivery medium greatly facilitates students’ learning activities. Therefore, we posit that:

H2a: Students will experience more flexibility in blog-mediated courses than in traditional learning environments.
H2b: Flexibility will be positively associated with students’ learning outcomes.

Collaborative Constructivism and Cognitive Constructivism

Constructivism has two major extensions: collaborative constructivism and cognitive constructivism. Collaborative constructivism emphasizes sharing and interaction (Slavin, 1990). It assumes that learning occurs most effectively when students interact with other students to develop a new, shared knowledge. As suggested by Alavi (1994) and others, collaborative activities enhance learning by allowing individuals to exercise, verify, solidify, and improve their mental models through interacting with others and sharing their thoughts, ideas, and information.

Since Web-based blogs provide several interactive features such as comments, trackbacks, and hyperlinks (Blood, 2004), students could easily share with each other their daily entries
as well as read visitors’ feedback and comments. Therefore, the use of blogs could provide further support for learner-to-learner interactions:

H3a: Students will have more learner-to-learner interaction in blog-mediated courses than in traditional learning environments.
H3b: Learner-to-learner interaction will be positively associated with students’ learning outcomes.

Cognitive constructivism adds another dimension to the learning theory of constructivism. It posits that learning involves processing instructional input to develop, test, and refine mental models, and transferring new knowledge into long-term memory (Leidner and Jarvenpaa, 1995; Shuell, 1986). According to Bovy (1981) and Bruning (1983), an important implication of the cognitive constructivism is the need for individualized instructional support and prompt feedback, since learners differ in terms of their learning style and prior knowledge.

As students’ thoughts and ideas could be externalized in blogs, instructors could now easily keep track of their learning processes and provide more prompt and targeted feedbacks. Such convenience is impossible in traditional classrooms, where students and teachers usually meet only once or twice per week. Thus, we hypothesize:

H4a: Students will have more learner-to-instructor interaction in blog-mediated courses than in traditional learning environments.
H4b: Learner-to-instructor interaction will be positively associated with students’ learning outcomes.

The Research Model
Based on the hypotheses presented above, we developed the research model as illustrated in Figure 1.

Research Methods
Subjects
A field experiment will be conducted at a university in mainland China. Students taking a typical public management course will be recruited to participate in this study. As the course
selected is open to multiple faculties/schools at different time a week, students from two majors, each having 80 to 100 members, will be utilized as two separate groups. By recruiting students from two academic sources, we attempt to avoid interactions or communications between the subjects from two groups.

One group of students (the “no blog” group) will be taught with traditional methods without using Web-based techniques, while the other group (the “with blog” group) will be encouraged to use blogs as an additional communication platform throughout the semester. A single instructor will teach both classes to ensure that the lecture content is consistent. In addition, the two groups will go through the same class schedule and have the same amount of time for lectures.

**Procedure**

In the first week, students in the “with blog” group will be asked to create their own blog accounts on the designated platform, and the platform provides each student with space to store files and a shared directory that links to the blogs of all other students in the same group. They will also be instructed on how to edit/publish entries, browse and give comments on other people’s journals.

During the 10-week semester, students in the blog group can express their reflections, go over the main points of the class, and give opinions to other students’ thoughts through the blog platform. The instructor will also hold his/her own blog (which is only accessible to students in the blog group) and leave comments on students’ blogs. In contrast, students in the “no blog” group will interact with each other and the instructor only through traditional communication means such as emails and face-to-face meetings.

In the last week, students in both groups will take a survey on perceived learning, satisfaction with the course, perceived participation, perceived flexibility, perceived learner-learner and learner-instructor interaction.

**Measures**

All items will be measured using a seven-point Likert-type scale, ranging from 1, ‘strongly disagree’ to 7, ‘strongly agree’.

*Learning Processes.* Perceived participation will be measured using the three items adapted from Alavi et al.’s (1997) study. To measure perceived interaction, we adapt the instruments developed by Marks et al. (2005), with thirteen items on learner-learner interaction and eleven items on learner-instructor interaction. Perceived flexibility will be measured with Arbaugh’s (2000a) eight-item measure, focusing on the course’s format and students’ ability to arrange their involvement in the course.

*Learning Outcomes.* Learning effectiveness will be assessed by both objective measures (test/exam grades) and subjective measures (perceived learning and perceived satisfaction with the course). We will give each student a pre-course test and a post-course test covering the content of the course and use the difference between the two scores as individual performance of actual learning. Perceived learning will be measured using the seven-item scale developed by Alavi (1994) and adapted by Arbaugh (2005). Perceived satisfaction with the course will be measured using a four-item scale adapted from Arbaugh’s (2000a) focusing on students’ perception of the course quality, and their likelihood of taking similar courses in the future.
**Control Variables.** Student age, gender, GPA, and prior experience with Web-based courses will be collected as control variables.

**Data Analysis**
We will conduct data analysis in two steps:
1) ANOVA test will be conducted with perceived participation, flexibility, learner-learner interaction and learner-instructor interaction as dependent variables. This step will tell whether the use of blogs could influence students' learning processes. Hypothesis 1a, 2a, 3a and 4a will be tested.
2) Structural Equation Model will be used to testify the 3-tier model as in Figure 1. This step intends to justify whether or not the selected constructs in learning processes are reasonable and consistent with learning theories.

**Implications and Contributions**
Firstly, based on the Alavi and Leidner’s framework of Technology-Mediated Learning, this study intends to extend existing literature on comparisons between Web-based and traditional learning environments, and to further investigate how blogs could enhance effectiveness of learning by supporting psychological learning processes. Four factors emphasized in learning theories are identified and integrated into the adapted framework. In addition, this study is one of the few studies that put Alavi and Leidner’s three-tier framework under an empirical examination.

Secondly, the introduction of blogs into management education could be of importance for practitioners as well. With its features of personalization and interactivity, blog could be an ideal candidate of supporting information technologies that could be utilized by business schools for pedagogical advantages. Despite its great popularity on the Internet, blogs have yet been formally employed by many universities. This pioneering work will provide empirical evidences on the effectiveness of applying blogs in teaching and learning, which are expected to benefit both the educators and their students.

**References**
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