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Learners' acceptance of e-learning in South Korea: Theories and results

Byoung-Chan Lee [a], Jeong-Ok Yoon [b], In Lee [c,*]

[a] Department of Business Administration, Graduate School of Business Administration, Keimyung University, South Korea
[b] Graduate School of Education, Keimyung University, South Korea
[c] Department of Information Systems and Decision Sciences, College of Business and Technology, Western Illinois University, Macomb, IL 61455, United States

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ABSTRACT

One of the most significant changes in the field of education in this information age is the paradigm shift from teacher-centered to learner-centered education. Along with this paradigm shift, understanding of students' e-learning adoption behavior among various countries is urgently needed. South Korea's dense student population and high educational standards made investment in e-learning very cost-effective. However, despite the fact that South Korea is one of the fastest growing countries in e-learning, not much of the research results have been known to the globalized world. By investigating critical factors on e-learning adoption in South Korea, our study attempts to fill a gap in the individual country-level e-learning research.

Based on the extensive literature review on flow theory, service quality, and the Technology Acceptance Model, our study proposes a research model which consists of four independent variables (instructor characteristics, teaching materials, design of learning contents, and playfulness), two belief variables (perceived usefulness and perceived ease of use), and one dependent variable (intention to use e-learning). Results of regression analyses are presented. Managerial implications of the findings and future research directions are also discussed.

1. Introduction

One of the most significant changes in the field of education during the information age is the paradigm shift from teacher-centered to learner-centered education. The emergence of electronic learning (e-learning) has further facilitated the wide adoption of learner-centered education and other changes in educational practices. E-learning has drawn significant attention from educational institutions, educational software developers, and business organizations due to the potential educational and cost benefits. Such benefits are reduced education cost, consistency, timely content, flexible accessibility, and convenience (Cantoni, Cellario, & Porta, 2004; Kelly & Bauer, 2004). Educational values can be also enhanced by customizing content for the learners' needs (Engelbrecht, 2003).

Many educational institutions are now offering innovative online degree programs, expanding their educational territories without time and space barriers, and complementing their traditional offline class with web-based online educational tools. For-profit and non-profit organizations are increasingly replacing traditional offline job training with online training programs. They claim that online training saves training costs and enhances learning effectiveness by delivering high-quality training services.

The success of e-learning in large part depends on the implementation of an educational model which addresses the learners' needs and educational objectives. Designing good e-learning services is a complicated task and requires a multidisciplinary approach. While a number of studies have investigated success factors and benefits of e-learning, there is still a lack of empirical studies that focus on the relationships among e-learning service factors and learners' acceptance (Liaw, 2008; Liu, Liao, & Pratt, 2009; Pituch & Lee, 2006; Sánchez-Franco, Martínez-López, & Martín-Velicia, 2009).

The development of e-learning in South Korea is strongly related to the rapid growth of its Information and Communications Technology (ICT) industry (Misko, Choi, Hong, & Lee, 2005). High-quality e-learning services have been rapidly developed due to the nation-wide telecommunication infrastructure and high-speed Internet. Korean government has been one of the driving forces behind the rapid growth of e-learning. In 2001, the 'Law for Developing On-Line Digital Contents Industry' was enacted to promote digital contents for education and to produce IT professionals.

* Corresponding author. Tel.: +1 309 298 1409; fax: +1 309 298 1696.
E-mail address: I-Lee@wiu.edu (I. Lee).

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South Korea's highly dense population and high literacy rate of over 97% provides cost-effective conditions for investment in e-learning. Due to the great interest of the general public in education, Korea's enrollment rate in higher education is over 70%. The high enrollment rate and dense student population make investments in e-learning cost-effective. Realizing the potential benefits of e-learning, companies in South Korea are increasingly adopting e-learning to train their employees and to improve their productivity.

While the diffusion of e-learning in South Korea is rapidly progressing, little of this has been known to the international field of e-learning. E-learning has become an important educational method in the internationalization of higher education. Increasing number of foreign students are taking online courses from abroad and obtaining online degrees (Hannon & D'Netto, 2007; Huynh, Umesh, & Valacich, 2003). Many higher education institutions in the US are developing degree programs overseas because of academic and business reasons (Bollag, 2006). In South Korea, leading universities such as Korea University and Yonsei University also established and plan to establish branch campuses in the US. Therefore, it is increasingly important to promote individual country-level e-learning research in a global society. By investigating e-learning adoption in South Korea from student perspectives, our study attempts to fill a gap in the individual country-level e-learning research.

The rest of this study proceeds with a brief review of literature made by previous researchers, a description of the research model and hypotheses for empirical testing, a description of the research methodology, data analyses, a discussion of the results, the implications of the findings for researchers and practitioners, and limitations of the study.

2. Literature review

2.1. Definition of e-learning

The term e-learning has been widely used in education since the mid-1990s. However, the definition of e-learning has not been clearly agreed on. Some researchers view e-learning as the delivery of teaching materials via electronic media, such as Internet, Intranets, Extranets, satellite broadcast, audio/video tape, interactive TV, and CD-ROM (Engelbrecht, 2005). Other researchers view e-learning as a web-based learning which utilizes web-based communication, collaboration, knowledge transfer, and training to add values to the individuals and the organizations (Kelly & Bauer, 2004). While it is generally accepted by most researchers that e-learning can be delivered by any electronic media other than web-based media, web technologies have made e-learning more widely accepted by academic institutions as well as business organizations (Alavi & Leidner, 2001; Hiltz & Turoff, 2005). E-learning has become an indispensible part in the competitive educational services market. Educational service providers offer online lessons, online tests, and educational consulting to meet the diverse demands of the educational customers.

Active learning is an instructional method that engages students in the learning process by requiring students to do meaningful learning activities (Bonwell & Eison, 1991). Active learning is often contrasted to the traditional lecture where students passively receive information from the instructor. The online learner must be active in the process, cognitively complex and motivated for quality e-learning (Alley & Jansak, 2001; Clark, 2002). E-learning provides many opportunities for media-based, student-centered, and interactive learning environments that support active learning (Huffaker & Calvert, 2003; Zhang, Zhao, Zhou, & Nunamaker, 2004).

Based on the definitions used in the existing studies, for this research e-learning is defined as web-based learning which utilizes web-based communication, collaboration, multimedia, knowledge transfer, and training to support learners' active learning without the time and space barriers.

Even though the potential benefits of e-learning may be significant, there are a number limitations and challenges to e-learning practices. E-learning generally requires a high upfront cost, new pedagogical skills, and learners' self-discipline and motivation (Cantoni et al., 2004). Security issues such as cyber attacks and hacking to e-learning systems are of concern to the learners and service providers (Ramim & Levy, 2006). In administering online tests, authenticating test-takers is one of the major challenges due to the inability to directly monitor the exam takers. To enhance the assessment of learning performance, some educational service providers or higher education institutions offer a mixture of online tests and offline tests (Gunasekaran, McNeil, & Shaul, 2002).

A number of studies indicated that the degrees of learner satisfaction with e-learning have been widely used to evaluate the effectiveness of e-learning (Zhang et al., 2004; Eom, Wen, & Ashill, 2006; Levy, 2007). The early studies show that technology, technical competency, motivation, instructor characteristics, and student characteristics are factors that affect the effectiveness of e-learning (Dillon & Gunawardena, 1995; Leidner & Jarvenpaa, 1993; Soong, Chan, Chua, & Loh, 2001; Volery & Lord, 2000). Recent studies focused on a wider variety of factors that affect the students' acceptance of e-learning. Pedagogical design and students/facilitator interaction are shown to affect student's acceptance of e-learning (Martínez, del Bosch, Herrero, & Nuño, 2007). Roca, Chiu, and Martinez (2006) applied the Technology Acceptance Model (TAM) and found that users' continuance intention is determined by satisfaction, which in turn is jointly determined by perceived usefulness, information quality, confirmation, service quality, system quality, perceived ease of use and cognitive absorption. More recently, Levy (2008) investigated issues related to learners' perceived value by uncovering the critical value factors (CVFs) of online learning activities. His study identified five reliable CVFs that contribute to learners' perceived value: (a) collaborative, social, and passive learning activities; (b) formal communication activities; (c) formal learning activities; (d) logistic activities; and (e) printing activities.

While the majority of studies focused on the learners' acceptance of e-learning, instructors' acceptance of e-learning is also of great concern for educational institutions. Many educational institutions have provided special training and incentives to the instructors who are willing to incorporate e-learning to their curriculum. A number of studies have investigated instructors' perception on e-learning and success factors (Hu, Clark, & Ma, 2003; Kollias, Mamalougos, Vamvakoussi, Lakkala, & Vosniadou, 2005; Liaw, Huang, & Chen, 2007; Myers, Bennett, Brown, & Henderson, 2004). In the following, we review in detail the Technology Acceptance Model (TAM), service quality, and flow theory in an e-learning context upon which our research model is based.

2.2. E-learning Technology Acceptance Model (TAM)

TAM was introduced by Davis (1986) to explain computer-usage behavior. Since then, TAM has been the most frequently cited and influential model for understanding the acceptance of information technology and has received extensive empirical support