

Learning Management System Adoption: A Theory of Planned Behavior Approach

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ABSTRACT

The growing popularity of online learning has put learning management systems (LMS) at the forefront of learning technologies. The adoption of LMS by students has therefore been a major driving force for online education. However, true adoption must transcend initial use for significant success. This study utilizes the theory of planned behavior (TPB) to gain new insights on students' short-term versus long-term adoption of LMS. Specifically, it examines the determinants of initial use and continuance use through the lens of the TPB. Results obtained from a sample of 248 undergraduate students suggest that difference in continuing use and initial use decision depends on differences in the influences of personal control perceptions about technology and subjective norms. Protagonists of online education will find these results interesting in that it provides insights for developing intervention strategies that can help in increasing online education adoption regardless of whether the focus is long-term or short-term.

KEYWORDS

Continuance Use, Innovation, Learning Management Systems, Learning Technologies, Online Learning, Technology Acceptance Model, Technology Adoption, Theory of Planned Behavior

INTRODUCTION

Learning Management Systems (LMS) have been widely used in higher education institutions in the United States and around the world; and this trend continues to rise (Lang, 2016). According to a 2014 *EDUCAUSE* Center for Analysis Research's report, 99% higher education institutions in the United States have an LMS in place, and 83% of students use some type of LMS. Among 17000 faculty members and 75000 students surveyed, majority of students and faculty members viewed LMS as an important tool for teaching and learning (Dahlstrom & Bichsel, 2014). Researchers have pointed to the critical role of LMS in student academic success (Paulsen, 2003; Browne, Jenkins, and Walker, 2006; Kumar & Sharma (2016). Despite the widespread use of LMS, not all university students are comfortable with their use, and others are unable to utilize them to the fullest ((Dahlstrom & Bichsel, 2014). While initial acceptance to LMS is a good step in the adoption process, an investigation into continuing acceptance is critical for long-term success of LMS (Joo, Kim, & Kim, 2016).

The use of LMS emerged in higher education in the 1990s and has quickly become an integral part of current teaching and learning experiences. The benefit of using LMS platforms such as *Blackboard*, *Moodle* and *Canvas* will not be maximized if students do not use them now, and continue to use them in the future (Alenzi, 2012; Lai, Wang, & Lei, 2012). In order to improve on LMS usage, researchers therefore, need to explore factors that give us a better understanding of the determinants of LMS among university students. Previous studies have highlighted some of these critical factors.

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For example, *usefulness*, *ease of use*, *perceived enjoyment*, *quality* and *attitudes* have been found to determine LMS adoptions among college students (Pituch & Lee, 2006; Lee, Cheung, & Chen, 2005; Saade, Nebebe, & Tan, 2007).

Many frameworks have been used by researchers to understand the spread and adoption of technologies such as these. Some examples include, the technology acceptance model, the theory of reasoned action, the theory of planned behavior, the expectation-confirmation theory among others. In this research we utilize the *theory of planned behavior* and the *expectation-confirmation theory* to examine this adoption concept. We do so for two major reasons: first, the theory of planned behavior has been acclaimed for its versatility in welcoming change interventions in behavioral research (Steinmetz, Knappstein, Ajzen, Schmidt, & Kabst, 2016). And since the adoption of LMS is behavioral in nature, and institutions need interventions that can encourage its use; a theory as the TPB seemed a great fit.

Second, many researchers have focused on the initial acceptance of the system and not really on the long-term continuance of use of the given system (Bhattacharjee, 2001). However, research shows that the real success of information systems (IS) lies in the continuing use of a system rather than in its initial acceptance, even though critical, is the actual measure of IS success. Hence, this research utilizes *continuance use intention*, instead of just *behavioral intention* to use a system and compares the two.

The current research therefore has as main focus to uncover the determinants of both *behavioral intention* to use (initial use intentions) and *continuance intention* to use (long-term use intentions). It also investigates into the difference between the two *use* outcomes based on the *attitude*, *subjective norms* and *perceived behavioral control*. The results of the study will benefit online learning champions seeking to increase adoption strategies.

In the following sections, we conduct a review of relevant literature, discuss how proposed model was developed, outline the methodology for the research, then analyze data, discuss results and offer a conclusion.

LITERATURE REVIEW

Many frameworks have been used in literature to explain the spread and adoption behaviors of information systems. Some of the popular theories include: the *theory of reasoned action*, the *theory of planned behavior*, the *technology acceptance model*, and the *theory of diffusion of innovations*.

The Theory of Reasoned Action (TRA)

Fishbein and Ajzen (1975) developed the theory of reasoned action based on value-expectancy theory. The value expectancy theory is based on the assumption that people change a behavior or adopt new behavior if they anticipate personal benefit from the outcome. Hence if the benefits outweighs the barriers they are more likely to indulge into behavioral change or adoption of a given behavior. Based on this notion, TRA assumes that behavior adoption or intervention is affected by intention towards the behavior and social influences towards it. Thus, TRA postulates that behavior is based on idea of intention; intention being the extent to which a person is ready to engage in a behavior (Fishbein, 1967; Ajzen & Fishbein, 1980). In general, people are likely to do something if they *plan* to do it than if they do not plan to do it. Therefore, as TRA suggests, intention is influenced by *attitudes*, *subjective norms*, and *volitional control*. Other researchers have shown that TRA adequately predicted the use of Massive Open Online Courses (MOOC) (Emad & Fajjida, (2019).

Based on the outcome, people therefore make series of beliefs towards a behavior, which in turn constitute an attitude toward that behavior (Ajzen, 2002). For example, if students believe that adoption of new LMS is beneficial, valuable, advantageous, or a good thing, then their attitude will be favorable and chances of them acting on the idea will be higher. Similarly, if students believe that adopting new LMS might not significantly impact their learning, is not useful to improve their academic performances and or improve their intellectual ability, their attitude toward the use of LMS

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