

Predictors of Teacher Trainees' Satisfaction in Using the Learning Management System in Teacher Training Institutes

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Abstract: E-learning is increasingly becoming an important delivery approach in teacher training institutes. Like with other innovations, there are factors that will affect users' behavioural intention to accept and adopt it. The purpose of this study is to test and validate a proposed model in predicting teacher trainees' satisfaction of the learning management system at the teacher training institutes in Malaysia. In measuring the success of an e-learning approach, it is best measured in terms of end-user satisfaction in using a system. Thus, their future behaviours can be predicted. It examines relationships among variables associated with factors that influence satisfaction. Data will be collected from 400 participants using a survey questionnaire. Practical interventions for teacher trainees will be suggested to assist individuals and organisations towards increasing technology usage. The research yields a theoretical framework that outlines the predictive potential of the key factors in explaining satisfaction which then leads to explaining technology acceptance and usage among the trainees. These factors can and should be considered when developing Continuous Professional Development trainings and intervention programmes.

Keywords: Information system, end-user satisfaction, learning management system, teacher training institutes

1. Introduction

Improving and empowering teacher and school leadership will be given top priority under the Malaysian Education Blueprint 2012-2025 (Star, Sept 19:2012). The Blueprint will open new horizons for the country's future education. Deputy Prime Minister Tan Sri Muhyiddin Yassin (Star, Sept 19:2012) shared that the ministry would give extra focus in improving teaching professionalism, learning skills, knowledge and quality teaching as part of the Malaysian Education Blueprint 2013-2025. The transformation reflects the seriousness of the government of taking Malaysian education into a system of high international quality and standard. The first key area of transformation is the empowerment of teachers.

One critical area where we can focus our attention on in empowering teachers is in the use of technology. One study showed that schools in which teachers had technology training and used computers to teach, enjoyed high attendance rate and high teacher morale (Schacter, 1999). It was also found that students of teachers who had received training in computer technology, outperformed students whose teachers had no educational technology training. Increasing technology use means responding to students' diverse needs and providing engaging and meaningful learning experiences in schools. To be able to do this, it has to start with the teachers' education. We have got to get teachers to start teaching according to how their students' learn best. Technology offers a variety of instructional options to teachers. It motivates students as they are immersed in electronic devices in their everyday lives. However, many of our existing educators do not have the same understanding of and ease with using technology that is part of the lives of professionals in other sectors. Concerns about this lack of technology use have led to more efforts and discussions as to how more opportunities can be provided for the trainee teachers to use technology throughout their preparation programme. In US, the Department of Education's Preparing Tomorrow's Teachers to use Technology

programme provided over \$750 million to projects focusing on new methods in preparing future teachers to effectively integrate technology into their teaching (Lawless & Pellegrino, 2007). Across the world, education and government leaders are promoting the need for better preparation of teachers to integrate technology and extensive funds have been expanded to support these efforts (OECD, 2005).

Predictors of end-user satisfaction will be a useful tool to access the likelihood of success for any new technology introduction. It helps us to understand the drivers of acceptance thus enable us to proactively design interventions targeted at population of users that may be less incline to adopt and use new innovations. Research into the factors that correlate to the adoption of e-learning could shed light into what the teacher training management needs to do to encourage participation and usage. It is assumed that this could then result in increased acceptance and usage among the teacher population. The final result of this could see teacher training institutes in Malaysia reaping the benefits of e-learning. The presence of a new innovation in education though despite its promises of greater benefits, will not automatically translate into actual usage unless teachers' satisfaction towards that innovation is fulfilled. This paves the way to this study where there is a need to search for deeper understanding as to what are the main incentives and barriers to the acceptance and use of e-learning. To date there are limited studies on predictors of satisfaction in e-learning among the trainee teachers in the Malaysian Teacher Training Institutes.

This study will extend DeLone and McLean IS Success Model as a theory that will not just predict satisfaction but also innovation acceptance among the trainee teachers in the Malaysian Teacher Training Institutes. The rationale is to promote the use of e-learning in teacher training institutes in this country by understanding what affects their satisfaction when they use the learning management system provided in their institutes. Actions and intervention plans can be then made to ensure a high level of satisfaction is maintained in order to encourage consistent and increased usage of the system. The research will also contribute to the existing theories; technology acceptance model (TAM) and DeLone and McLean IS success model in teacher education and developing country setting. Thus, the main objective of the study is to predict factors that influence satisfaction in e-learning. The study will be carried out to achieve the following:

To develop a model to predict factors that influence end-user satisfaction in the use of the learning management system among trainee teachers in the institutes.

2. Review of the Literature

2.1 Learning Management System (LMS)

The learning management system is an information technology used by instructors to build and maintain course websites. It provides a range of administrative and pedagogic services related to formal education settings. This includes posting course content, updating events and managing interactive communication with students via messages, forums and surveys (OECD, 2005). Academic institutions have invested heavily in LMS implementation to support online teaching. Therefore, to justify the heavy investment in LMS technology, it is important to study factors that affect students' satisfaction when they are using the LMS (DeLone and McLean, 2003). LMS has been said to be one of the prominent features of e-learning development in tertiary education worldwide. Now we need to ask ourselves if e-learning improve the quality of education. Review of past literature will give a resounding yes as the answer. Teacher Training Institutes should now be looking for ways to mainstream e-learning and maximize its impact in the classroom. Though basic infrastructure still needs further development in Malaysia, the problem still lies with the fact that students and teachers do not use them enough. To date, successful practices and valuable experiences in isolated cases across the country have limited impact, visibility and recognition.

2.2 Theories related to the Study

Theories that form the basis of this study are DeLone and McLean (2003) information system success model and the technology acceptance model by Davis (1989). TAM model is developed by Davis and

it is an adaptation of the Theory of Reasoned Action and the Theory of Planned Behaviour. DeLone and McLean's IS success model provides a good framework to identify and develop different measures for several important dimensions. It is used in the field of human-centered technology and usability studies to understand different aspects of IS success. As such it could provide a practical way to evaluate for example what leads to satisfaction among users or what problem does the usability of the system create to users.

User satisfaction is viewed as the attitude that a user has toward an information system. User satisfaction is primarily measured by various subsets of beliefs about either the system, information or other related characteristics. It describes system and information design attributes; a useful diagnostic for system design but a weak predictor of system usage. This is because beliefs and attitudes about objects are poor predictors of behaviours (Azjen and Fishbein, 1980). For a belief or attitude to be directly predictive of behavior, it needs to be consistent in time, target and context with the behavior. My satisfaction will not directly impact my usage but it will impact my beliefs which will then affect my attitude and shape my behavioural beliefs about using the system. Beliefs will shape attitude toward use and finally usage behavior.

I have listed 12 antecedents (refer Figure 1) to system, information and user quality. These predictor factors are derived from a decomposition and integration of factors identified in the user satisfaction literature. Each factor reflects perceptions of the system itself and the way it delivers information. We assert that beliefs one has toward the information, system and user quality will shape attitude towards the LMS satisfaction respectively. Information, system and user satisfaction in this study represent behavioural-based attitudes that serve as external variables which shape behavioural beliefs. The behavioural beliefs will then directly influence attitude toward use and ultimately usage. This study will only be looking at factors that influence satisfaction towards the use of LMS. Past studies have shown that high level of satisfaction will lead to favourable behavioural beliefs, and also favourable behavioural attitude and ultimately using the information system provided.

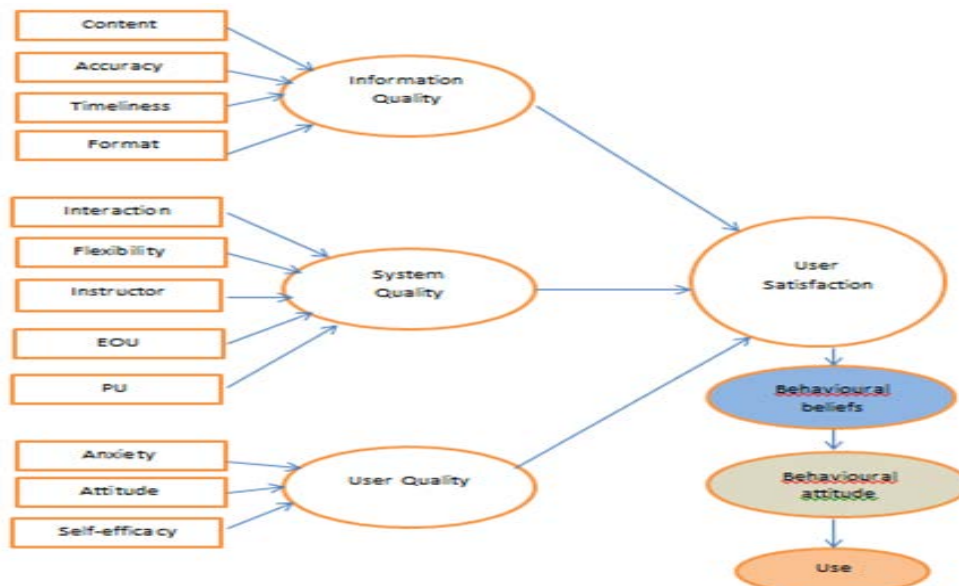


Figure 1: The Proposed Research Model

3. Methodology

The aim of this study is to determine factors that influenced trainee teachers' satisfaction level when using the LMS. The predictor factors to be investigated are information quality, system quality and user quality. As for information quality, a number of aspects will be studied. They include content, accuracy, timeliness and format. The system quality will be looking at interaction, flexibility, instructor, ease of use, and perceived usefulness. Finally, user quality will only be looking at anxiety, attitude, and self-efficacy.

This study will be based on a quantitative approach as the researcher aims to test the hypotheses of the proposed research model. Quantitative descriptive study involves accumulation of data to respond to questions related to the current status of the subject of the investigation (Bryman, 2008). This will be a descriptive survey study. The accessible population of investigation in this study includes all the teacher training institutes in Peninsular Malaysia. However, only institutes which fall in the central and southern regions and have established their learning management system for at least more than five years will be considered for the study. This is to ensure sufficient reliable information can be gathered from a mature implementation of the learning management system. Hair et. al. (2006) recommended at least 200 respondents for studies which are using SEM for valid results. Increasing respondents' size by up to 50% is recommended by Salkind (2005) in order to overcome sampling error. Guy and Airasian (2003) suggested using larger samples than minimum in various situations. Hence, a larger sample size of at least 400 was appropriate to be drawn for causality reasons. The number of gender among trainees will be according to the proportion in the chosen population.

Questionnaire development will be patterned after the process proposed by Moore and Benbasat (1991). The process starts off by compiling questions from a number of validated instruments (Doll and Torkzadeh, 1988; Arbaugh, 2000; Sun et al., 2008) in measuring each construct. Next the instrument will be reviewed by three academics and practitioners involved in delivering e-learning courses. This will result in some items being removed, re-worded or re-sorted. The resulting survey will be then pilot tested using respondents from the teacher training institutes. Based on the result of the pilot sample, further modifications will be made to the survey before the actual data collection is carried out.

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