E-Learning Acceptance among Tertiary Education Students

Lee Nyuk Ling, Lee Yoke, Nik Kamariah Nik Mat

Abstract— In current year, e-learning received special attention from higher education in implementing distance learning courses. Therefore, in this study, we examined the factors influence the acceptance of e-learning among tertiary education students. The factors tested were results demonstrability, performance expectancy, effort expectancy, and social influence. A total of 213 respondents received from several private higher education learners in Malaysia who are currently pursuing Certificate, Foundation, Diploma and Degree.The findings of this study revealed that results demonstrability and performance expectancy is significant positively influence the acceptance of e-learning. Whereas, effort expectancy and social influence is insignificantly influence the acceptance of e-learning.

Index Terms—E-Learning, effort expectancy, performance expectancy, results demonstrability, social influence

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1. Introduction

The term e-learning referred to the learning methodology using any electronic as a delivery medium. E-learning can be synchronous in which participants have to attend online sessions on particular time [1]. There are so many synonymous of e-learning like web-based learning, e-education, open-learning, open courseware, and virtual education. The other type is asynchronous in which participants do not need to attend any classes and follow restricted time for attending class. In November 2005, the Sloan Consortium published a report on e-learning and defined "online learning" or "e-learning" as a learning in which 80% to 100% of the content is using Internet as a medium of delivery [2].

In current year, due to the rapid growth of web-based technologies and high usage of Internet have made learning and teaching via the e-learning more feasible. E-learning (on-line learning, web-based learning or internet learning) is a method which developed from distance education. It has received special attention from higher education in implementing distance learning courses. According to Chai and Poh [3], e-learning is the most recent evolution of distance learning that creates, delivers, fosters, and facilitates learning, anytime and anywhere, with the use of electronic technologies as a medium of instruction in distance learning. However, distance participants need to be ready for this type of learning tools as past experiences showed that new technologies do not necessarily lead to major enhancement in education [4]. According to Raja Hussain [5], due to the increase in demand for higher education, many institutions in Malaysia have planned for e-learning. A

number of distance learning higher education institutions such as Wawasan Open University and the Open University of Malaysia had emerged in the growth of distance learning in Malaysia [6]. Meanwhile, O'Malley [7] reported e-learning as method distance learning is being promoted as the educational medium of the future.

E-learning allows a new way for many adults who have been tied up with many commitments in life and facilitate them to learn anytime and anywhere they want at their flexibility and convenience. Access to learning via the Internet has made physical or geographical limitations no longer a critical issue for adults to enroll in any course with any university where e-learning opportunities are available. Many past studies showed positive results on the acceptance of e-learning by working adults. However, not much has been found on the acceptance of e-learning by young students.

2. Literature Review

According to a several studies on information technology systems [8], [9], [10] and the technology acceptance model (TAM) proposed by Davis [11], can efficiently explain and predict learners' intention and behaviour. Chang et al. [12] investigated on perceived convenience in the extended TAM for examining the technology acceptance model of the mobile learning activities. Besides that the antecedent factors (perceived ease of use and perceived usefulness) that affected acceptance of English mobile learning were also examined. The results showed that perceived convenience positively affected attitude towards using but indirectly affect continuance intention to use through perceived usefulness and attitude toward using.

Chai and Poh [3] studied on criteria such as program content, web page accessibility, learner's participation and involvement, web site security and support, institution commitment, interactive learning environment, instructor competency, and presentation and design to identify successful criteria in implementing an e-learning program in Malaysia. All the factors were deemed important for the successful implementation of e-learning

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program. Meanwhile, Selim [13] studied on four main critical factors (student, instructor, information technology, and university support) and reported all the factors deemed as critical determinants of e-learning acceptance. Apart from that, there were some researcher found that a number of factors such as students' and instructors' characteristics [14], [15], [16], technology support and system [16], [17], institutional support [18], [19], course content and knowledge management [13], [20] and online tasks and discussion groups [21], [22] could influence learners' towards acceptance of e-learning.

Hong et al. [15] studied on students' satisfaction and perceived learning with a web-based course by undertaken among postgraduate students in University Malaysia Sarawak University. The findings revealed that students had high level of acceptance with their Web-based courses. The students who had high level of acceptance found that the web-based course was flexible and convenient [15], [23]. Furthermore, majority of the studies reported that there was no difference in learning achievement between the students taking web-based courses and those students enrolled in traditional face-to-face educational environment [15], [24], [25], [26], [27]. Hong et al. [15] found some students faced problems with the web learning environment and they needed more time and guidance to adapt to the web-learning environment.

On the other hand, Poon et al. [16] investigated on the main five factors (students' behaviour, characteristics of lecturers, interactive application, technology or system, and the institutions.) that affect the effectiveness of web-based learning environment in various courses at eight universities in Malaysia. The study reported that the students were not fully comfortable with web-based learning environment. However, according to Oliver and Omari [28], Collin [24], Swan et al. [29], Motiwalla and Tello [23] and Fredericksen et al. [30] the study on asynchronous web-based learning in general reported high levels of students' satisfaction with the courses

While, Malik [31] investigated the factors that influence learner satisfaction towards e-learning and reported that learner's satisfaction is positively influenced by student and instructor attitude towards technology, their computer efficiency, and instructor response, on-line course flexibility and proper facilitation of technical matters. Kuldip and Zoraini [32] studied on a group of Open University Malaysia learners and tutors to determine the E-learning readiness. However the study showed that learners and tutors are moderately ready for e-learning.

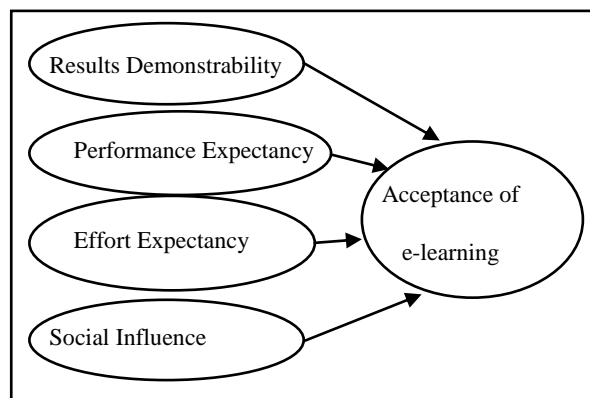## 3.0 Research methodology
3.1 Research Framework

Figure 1: Adopted from Keller, Christina et al. (2007)

3.2 Research participants

A total of 250 questionnaires were distributed to learners who are currently undertaking their tertiary education using the traditional classroom in private higher education in Malaysia to express their views and interest in doing their studies the "e" way. Several private higher education providers in Malaysia were selected to provide feedback on their acceptance of e-learning approach.The questionnaires were distributed to learners who are currently pursuing Certificate, Foundation, Diploma and Degree. The collections of data were carried out between 14th January 2013 to 21st February and we managed to collect 213 responses.

3.3 Research instruments

Data were collected from learners using questionnaires. The questionnaires were designed using a five-point Likert scale (5-strongly agree, 4-agree, 3-neutral, 2-disagree and 1-strongly disagree).The first part of the questionnairegathered information pertaining to learners' profile such as gender, nationality, age, highest education, and currentlevel of programmes pursuing. In addition to demographic characteristics section, the survey instrument consists of five factors. The five factors measured were e-learning readiness (ELREADY), results demonstrability (RD), performance expectancy (PE), effort expectancy (EE), and social influence (SE). (Keller, Christina et al. [33])

3.4 Data analysis

The data obtained from the questionnaires were analysed using SPSS and the results of descriptive analysis and regression were obtained.

4. Findings

From the sample, the male and female respondents are of 46.5% and 53.5% respectively. The distribution on the nationality of respondents; 81.2% are Malaysian and only 18.8% are foreign respondents. The highest education obtained by respondents is from others qualifications (foundation) and followed by SPM.

Meanwhile, majority of the respondents are currently pursuing Degree.

Table 1

Item Reliability

Analysis

Independent Variable	No of Items	Cronbach's alpha
RD	2	0.775
PE	8	0.879
EE	6	0.780
SI	3	0.719

A reliability analysis using the measure of Cronbach's alpha was used to estimate the reliability of the Independent Variables. From Table 1 above, the reliability result of independent variables generated in this study is ranged from 0.719 to 0.879. According to Hair, Anderson, Tatham and Black [34], an academic research with Alpha value above 0.7 is generally accepted and this study showed the reliability of the Independent Variables is above the accepted threshold.

In Regression output via the Enter Method, the adjusted R Square showed that the model with the inclusion of the independent variables (RD, PE, EE, SI) collectively explains for 45.5% of the variance in acceptance of e-learning. R^2 ranges from the value of 0 and 1. It showed that there is a linear relationship between acceptance of e-learning and the independent variables (RD, PE, EE, SI). It is possible to predict the influence of independent variables to acceptance of e-learning.

Whereas in the ANOVA (analysis of variance) which showed the significant relationship between the dependent variables and the independent variables in the regression equation. From the results generated, the p value is 0.000 (p<0.05, F=45.175) and this showed that the linear relationship is significant.

Table 2

Results From Regression Analysis

Independent Variable	t	Sig
RD	2.264	0.025
PE	5.865	0
EE	1.491	0.137
SI	1.109	0.269

RD - Results demonstrability, PE - Performance Expectancy

EE - Effort Expectancy, SI - Social Influence

Table 2 above showed the results of the regression testing. The regression coefficient suggest that RD and PE is positively significant influence acceptance of e-learning with p value generated 0.025 (p<0.05, t=2.264) and 0 (p<0.05, t=5.865), respectively.

Whereas, the independent variables for EE and SI is insignificant influence theacceptance of e-learning with p value generated 0.137 (p>0.05,t=1.491) and 0.269 (p>0.05, t=1.109), respectively.

5. Conclusions

In this study, four factorswere tested to study the influence towards acceptance of e-learning among tertiary education learners. These factors are results demonstrability (RD), performance expectancy (PE), effort expectancy (EE) and social influence (SI). The findings of this study revealed that results demonstrability and performance expectancy is significant positively influence the acceptance of e-learning. Whereas, effort expectancy and social influence is insignificantly influence the acceptance of e-learning. However, these findings have limitations in terms to generalise to the whole country because the data were only collected from a few private higher education providers.

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