Students’ Performance on the Implementation of Online Learning System

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Abstract. The use of Information technology (IT) and the Internet are the new paradigm in the 21st Century has introduced new concept of learning known as e-Learning or online learning. However, there are some issues regarding the implementation of online learning, for instance number of students using the system is not encouraging and this will give an impact to student’s performances. Therefore, this study is conducted to examine the relationship of readiness and attitude factor on students’ performance towards the implementation of online learning and identify the differences between genders in student readiness for online learning. Data was gathered from 331 part-time students in eight e-PJJ program at UiTM Shah Alam, Malaysia. The result of analysis has shown that, attitude and readiness have positively influenced the students’ performances on the implementation of online learning system. However, both factors have moderate correlation. Furthermore, the analysis has shown that there is no significance difference between genders in student readiness for online learning.

Keywords: Online learning, e-learning, student’s performance, technology acceptance.

1. INTRODUCTION

Technology is constantly changing and new technological developments can have profound effects on many industries especially in higher education. The rapid development of new technology provides many opportunities to the organizations in terms of improving their ways of learning and this has helped them in gathering information and enhancing knowledge. In new millennium, higher education has move forward to the new type of learning called e-Learning. E-Learning differs than traditional learning in terms of methods of delivering. Delivery of learning using traditional methods required the instructor, a textbook and whatever additional support materials the instructor was able to gather. E-learning or online learning is a recent phenomenon which the learning requires the use of network environment called an Internet.

In this new environment of learning, students will attend a virtual class and it is flexible because it can be accessed everywhere as long as student has a personal computer and Internet connection [1]. The new approach of learning gives many benefits to the higher learning institutions as they can efficiently make use of time towards the productivity and decreasing the training cost [2]. Moreover, new learning approach can streamline the process of education by freeing educator’s time to focus on learning transference, supplemental information development, and learners’ educational needs [3]. Online environment can make instructors more approachable. Students can talk openly with their instructor through online discussion, without going to his or her office. This type of communication can enhance the contact between instructors and students. However, can the online learning help student learn more effectively compare to traditional learning? Since, online learning generally lack weekly face-to-face
meetings, it is important for students to communicate comfortably and confidently with their instructors and virtual classmates through computer correspondence or discussion, especially those presented in writing.

Finding from previous research have shown that numbers of students participating in online learning is not encouraging. The result was moderate in term of readiness and attitudes towards online learning [1, 3]. If students do not participate and encourage with the use of online learning portal, it can be seen as wastage of effort in human and capital investments towards preparing the e-learning portal for distance learners [3].

To encourage students to participate in online learning, the acceptance of e-learning portals play an important role. According to the TAM [4], both Perceived Usefulness (PU) and Perceive Ease of Use (PEOU) influence the attitude of individuals towards the use of a particular technology, while attitude and PU predict the individual’s behavior intention (BI) to use the technology. It is important to determine the factors that determine the successfulness of online learning. To identify online learning success is based on students’ performances. Therefore, this study is conducted to examine the relationship of readiness and attitude factor on students’ performance towards the implementation of Online Learning System. This study focuses on three main questions which are 1) Does attitude positively influences students’ performances toward the implementation of online learning system? 2) Does readiness positively influences the students’ performances toward the implementation of online learning system? 3) Is there any significance difference between genders in student readiness for online learning?

2. REVIEW OF LITERATURE

Online learning is the most extensively used term for describing all the information communication technology based on learning approaches, although “e-learning”, “distance learning” and “distance education” have also been used [5]. Online learners can communicate with their instructors and their peers through e-learning system over the Internet. Besides, they can access all the learning materials online using the system application. To conduct online learning, Internet plays a major role. Online learning can be defined as a process of delivering course content to the end-user by means of a computer using Internet technology [6]. Katz and Yablon [7] stated that the Internet provides the potential to deliver efficiently and on a mass scale individualized, highly engaging learning and instructional content to almost any desktop and make information available to the teacher and student at any time day or night. Thus, the very essence of the Internet is its efficiency, effectiveness, and its facilitating qualities that promise a long awaited educational breakthrough at all education levels.

Other researcher defines e-learning as delivery of training education via networked interactivity and a range of other knowledge collection and distribution technologies [8]. This is supported by [9] which define e-learning as the creation and delivery of knowledge via online services in a form of information, communication, education and training. The interaction tools for this concept of learning can be through email, conferencing, online tutorial, online class and forums [1]. Two type of interactions method was asynchronously and synchronously.

Based on a theory of reasoned action, the technology acceptance model (TAM) suggests that the acceptance of technology by users is determined by their beliefs regarding the consequences of that usage [4, 5]. Perceived ease of use and perceived usefulness are two most important factors that influence users’ acceptance behaviors. Perceived ease of use can be defined as the degree to which an individual believes that using a particular system would be free from physical and mental efforts [4]. Meanwhile, perceived usefulness can be defined as the degree to which an individual believes that using a particular system will
enhance his or her job performance [4]. If users’ perception towards ease of use and usefulness is positive, TAM predicts that users will accept new technology. Lin [10] found that student’s intention to use technology influences their learning outcomes in the online class environment.

2.1 Student Performance

Student performance is well understood to be number of indicators affected by study habits, prior knowledge, communication skills, time available for study and lecturer effectiveness [11]. There is no specific factors can influence student outcomes in an online learning. Beaudoin [12] found that a high level of interaction and participation is desirable in online learning courses although it participation does not necessarily compromise student results. Conversely, a study by [13], found that the indicator measurement of student performances in online classes were discussion board usage. The finding has proven by the fact that the number of student session was positively and significantly related to overall course performance. This study examines two factors that can influence student’s performance in online learning: Readiness and Attitudes. Gender also had been examined as a moderator.

2.2 Attitude towards E-Learning

Attitude can be defined as learners’ impression about performing the target behaviors [14]. Previous studies indicated that the attitude of learners will positively influence learners’ satisfaction and acceptance of online learning [15, 16]. Positive attitude toward online learning can encourage and motivate students to participate in online courses as well as online activities. Hence, to be success in online learning, students should eliminate attitude such as aversion and anxiety.

2.3 Readiness for Online Learning

Readiness refers for online learning in terms of three aspects: (1) students’ preferences for the form of delivery as opposed to face-to-face classroom instruction; (2) students’ confidence in using electronic communication for learning and, in particular, competence and confidence in the use of Internet and computer-mediated communication; and (3) ability to engage in autonomous learning [17]. Student readiness can be divided into two components, which are technical readiness and self directed readiness [18]. Technical readiness and self directed readiness refers to the requisite knowledge, attitudes, skills and habits in Information Communication Technology (ICT) components and attitude is the central of components in self directed learning readiness and comprises of acceptance of responsibilities for one’s own learning, creativity and independence in learning, a willingness to seek help and valuing one’s own learning [18].

Researchers have noted that technical skills involving computers and the Internet are related with learners’ performance in online learning environments [17]. Learners’ perceptions of the Internet shape the learners’ attitudes and online behaviors [19]. Student should be more active role in their learning in online learning environments and should be more responsible in their learning, time-management, keeping up with the class, completing work on time and active contributors to instruction [17].

2.4 Gender Differences

Gender differences exist in many disciplines, including in technology. A research conducted by [20] stated that currently more females than males are enrolling in online courses. Gender differences in
education have been recognized as an important element for research for a long time ago, especially since increasing number of online female students [21]. A research conducted by [22], confirmed that gender is one of the factors that determine students’ use of the web-based learning, as there was a big number of males than females who were engaged in the dialogue with their peers and lectures. Other than that research by [23] reported a similar finding where they found that males have higher computer self efficacy, perceived ease of use, perceived usefulness and behavioral intention to use online learning rather than females.

In other research conducted by [24] countered back that online female students are confident independent learners who are academically engaged and may outperform their male counterparts online. Similarly, male students exam scores and female students’ exam score were significantly different with each other [15].

3. RESEARCH FRAMEWORK AND HYPOTHESES

In the process of developing a research framework whereby it examines students’ performance towards the implementation of online learning system, this study posits two factors: (1) Attitudes and (2) Readiness. Meanwhile, gender is used to examine any difference in students’ readiness for online learning. The research framework is developed in Fig. 1.

This study hypothesizes that differences in these two factors may influence students’ performance in online learning system. Research findings expect to be able to determine the relationship between technology acceptance on online learning and performance among students in University Technology MARA (UiTM) who registers e-PJJ program. This research also gave benefit to the organization which is UiTM. This research will produce the result of whether the investment made towards the development of online learning portal will bring them benefit or not. The result can help the organization to improvise on the section that need further enhancement. In addition, students also can express their opinion and perspective towards the online learning and through this, the students will be able to enjoy the learning in the environment that they always wanted. Consequently, this study proposes 3 hypotheses:

H1: Attitude positively influences the students’ performance toward the implementation of online learning system.

Fig. 1: Research Framework

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H2: Readiness positively influences the students’ performance toward the implementation of online learning system.
H3: There is significance difference between genders in student readiness for online learning.

4. METHODOLOGY

4.1 Contexts and Participants

The participants of this study were students from e-PJJ programs in UiTM Shah Alam, Malaysia. The students are taken from semester 2 and above in eight (8) e-PJJ programs. A total of 400 questionnaires were distributed by paper during semester. However, only 331 questionnaires were obtained and valid. The students were asked to describe themselves in reference to a 5-point Likert-type scale, with anchors ranging from 1 (strongly disagree) to 5 (strongly agree).

The demographic variables included gender, age, program, and faculty name. There were more female respondents (69.2%) than male (30.8%). Regarding to the age and program taken, the result shown as stated in Table 1 (a) and Table 1 (b) below.

4.2 Instruments

Questionnaires were developed to investigate the relationship between attitude and readiness with student performance on the implementation of online learning system. In doing so, 29 items of questionnaire were developed and adapted from previous research with response options ranging from strongly disagree (1) and strongly agree (5). The questionnaire has slightly been modified based on the suitability and necessity of the study. Table 2 indicates the summary of development of instrument used in this study.

4.3 Reliability Test

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The study was performed by 331 students in eight (8) e-PJJ programs and the result of running the coefficient Cronbach’s alpha test proved the instrument was reliable as shown in Table 3.

Table 2 Development of Instrument

<table>
<thead>
<tr>
<th>Section of Questionnaire</th>
<th>Scale</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section A: Demographic background</td>
<td>Nominal and Ordinal</td>
<td></td>
</tr>
<tr>
<td>Section B: Attitude</td>
<td>Interval (5-point Likert’s Scale)</td>
<td>Cecilia (2008)</td>
</tr>
<tr>
<td>Section C: Readiness</td>
<td>Interval (5-point Likert’s Scale)</td>
<td>Kaur &amp; Abbas (2004)</td>
</tr>
<tr>
<td>Section E: Student’s Performance</td>
<td>Interval (5-point Likert’s Scale)</td>
<td>Moore &amp; Benbasat (1992)</td>
</tr>
</tbody>
</table>

Table 3 Reliability Statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>.795</td>
<td>5</td>
</tr>
<tr>
<td>Readiness</td>
<td>.823</td>
<td>6</td>
</tr>
</tbody>
</table>

5. RESULTS OF HYPOTHESIS TEST

5.1 Correlation Tests

Sekaran [24] revealed that the bivariate relationship was the result of studying the relationship between two variables. The Pearson correlation was used for conducting relationship test of the structural model. Hypotheses 1 and 2 proposed that attitude and readiness positively influences the students’ performance on the implementation of online learning system. As shown in Table 4, readiness (‘r’ = 0.411) was the stronger influences on students’ performance than attitude (‘r’ = 0.353). Consistent with much of the prior research, both factors had significant effects on students’ performance but with moderate relationship based on the analysis result. Thus, hypotheses 1 and 2 were supported.

Table 4 Results of Correlations

<table>
<thead>
<tr>
<th></th>
<th>Attitude</th>
<th>Students’ Performance</th>
<th>Readiness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students’ Performance</td>
<td>Pearson Correlation</td>
<td>.333**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>1.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>331</td>
<td>331</td>
<td>331</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
5.2 Gender Difference in Online Learning Readiness

To test the gender differences, the study was run a T-test that revealed no significant difference between male and female students, as shown in Table 5. The finding means that female and male students had similar levels in readiness. It may be possible that female and male students have similar attitudes and beliefs toward their pursuit of academic studies online [17].

Based on the findings of the study, a framework that described the results of the finding was displayed as on Fig. 2 above.

6. DISCUSSION

The results obtained were analyzed using statistical analysis in ensuring its reliability. The findings of the study included the demographic information of the respondents such as their gender and program taken. The study shown that majority of the respondents were female (69.2%) than male (30.8%). Most of the respondents were taken e-PJJ program BM222 (26%) which is Bachelor in Business Management (Hons, Finance). Those respondents were the students that use online learning system at UiTM Shah Alam, Malaysia. The Online Learning System that implement in UiTM is known as i-Class Learning Management System.

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The results of the study revealed that readiness and attitude need attention because those factors have moderate relationship with students’ performance. To suggest, the instructors need to play an important role and help students develop learning skills and attitude on online learning. Instructors may need to improve the clarity of their syllabus and course contents before students can direct themselves toward taking full control of their own learning. Students also need full encouragement towards the use of online learning system and able to manage their time for the online class participation. As we believe that, most of the online students are working. Thus, it is important for them to establish time for working and studying. Besides, they need to be independent, responsible and being motivated during courses. As stated by Hung et al. (2010), online learning instructors need to encourage students to participate more extensively in the discussions, to bravely express their thoughts, to form better friendships, and to seek assistance when facing problem online. Motivation is also one of the important factors. Therefore, instructors should help students stay motivated in online learning.

Other than that, the online learning system also plays an important role. The system should be well implemented and user friendly. In addition, the network technology is also important if we implement such system. The survey has revealed that most of the students gave comments on the implementation of online learning system. If the system server has breakdown, this will cause a problem to student participation in online class. This issue will reduce student motivation on online learning participation. Hence, it will give an impact on students’ performance. Therefore, for future research should be discussed on usability of online learning system and how to improve the implementation of current system in higher institution. As we believe that online learning program give many benefits to the academic institution and same goes to the online students. Thus, it is important to consider on the issues of online learning system’s implementation.

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