

Factors Critical for Learning Management System in On-line Distance Learning (ODL)

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Abstract On-line distance learners depend heavily on learning management system (LMS) to fulfill their learning requirements. The learners would expect that LMS will contain all the necessary learning materials and resources for learners to refer to for learning. Also, the system should be able to support such activities like downloading, uploading, forming, and chatting. Once the system is established, learners would use the system provided if they are satisfied with it and in turn increases learners retention. Hence, this paper is to examine the factors affecting the e-satisfaction and e-retention of a learning management system (LMS). The factors identified include: technology acceptance model, perceived quality, and LMS characteristics.

Keywords Learning Management System, On-line Distance Learning, E-Learning, Adult Learner and Malaysia

1. Introduction

On-line distance learning or e-learning has been established in Malaysia since 1998, and the first e-learning university that adopted on-line distance in Malaysia was pioneered by University Tun Abdul Razak or now known as UNIRAZAK[1]. However, in Malaysia lifelong learning includes formal and non-formal levels, such as public universities, post-secondary institutions, open and distance learning institutions, MARA and other ministries. In year 2009 about 7,870 students enrolled in part time programmes at Diploma and Certificate levels especially at Polytechnics, community colleges about 56,056 students, UniRAZAK about 8,000 students, Wawasan Open Universities about 2,336 and AeU received about 81 students[2]. Those are students who are engaged either in formal or non-formal lifelong learning. For the purpose of this paper, the focus will

be mainly on on-line distance learning (ODL) and also lifelong learners, as commonly known ODL is couple with e-learning package that is known as learning management system ([1],[2]). Since Malaysia is serious on enculturation of lifelong learning and has become part of national agenda and third pillar of human capital development system[2]. As such, the assessment of on-line distance learning that support the delivery of lifelong learning to lifelong learners have to be examined in order to enhance the quality of the information in order to increase the e-satisfaction and e-retention of lifelong learner students in ODL education mode.

1.1. On-line Distance Learning and Lifelong Learners in Malaysia

Lifelong learning is defined as “Learning engaged by everyone of age 15 and above except professional students”, professional students are those who are full time student in school, college or university that aims in acquiring academic qualification or skills[2]. Details on the population of lifelong learners in Malaysia as at 2010 and also projection for 2020 as shown in Table 1:

Table 1. Lifelong Learners for Malaysia Population from 2005 until 2020

	2005	2010	2015	2020
Total Population	26,447,300	28,960,000	31,817,444	34,276,423
15 years and above	18617,200	21,290,000	23,645,259	26,210,000
Professional students (15 years old & above)				
Secondary (Form 3-5)	1,200,972	1,293,741	1,421,393	1,531,244
Tertiary	1,140,000	1,485,600	1,759,200	2,087,900
Total Professional students	2,341,012	2,779,341	3,180,593	3,619,144
Potential Lifelong Learners	16,276,188	18,510,659	20,464,666	22,590,856
Lifelong learners as a % of total population	61.5%	63.9%	64.3%	65.9%

Source: *Blueprint on Enculturation of Lifelong Learning 2011-2020* (2011), Ministry of Higher Education, Perpustakaan Negara Malaysia, Univision Press Sdn Bhd, pp. 7.

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As shown above, the expected number of lifelong learners will be increasing significantly, if the *ceteris paribus* principle is applied, as such, the number might be a bit lower when it reaches year 2020. According to the Eduard Lindeman, a major philosopher of adult education as cited by [3] concluded that adult learning is “a co-operative venture in non-authoritarian, informal learning” which the ultimate purpose of their learning is to discover the meaning of experiences. Unlike the traditional learning where learners been told what they need to know [4], with adult learners, they prefers to know why they need to learn and how is it useful and how will benefit them in life ([5],[6]).

In Malaysia, the lifelong learning policy is as such “To create a knowledge society which embraces lifelong learning as a culture that contributes towards high income productivity-led economy, inclusiveness and sustainability, while appreciating national culture and heritage, as well as ensuring personal development and sense of self-worth.” [2]. The most significant proposal forwarded in the Blueprint for on Enculturation of Lifelong learning is flexi lifelong learning for all that includes these initiatives which are:

- a. Promote flexible education and training methods programme;
- b. Strengthen the delivery mode of the six ODL institutions to cater for lifelong learning activities and programmes;
- c. Increase the number of distance learning courses and programmes conducted by lifelong learning institutions;
- d. Increase broadband and other ICT infrastructure;
- e. Increase formal online lifelong learning programmes;
- f. Create online repository of learning objects for lifelong learning;
- g. Provide training for online instructors or trainers; and
- h. Recognize online lifelong learning programmes through MQA (Malaysia Qualification Agency)

As such, the need to carry out this study is timely for the purpose of re-examining on the ability of ODL institutions in delivering lifelong learning activities via e-learning or its learning management system.

2. Literature Review

For this part, a brief discussion on Learning Management System, Technology Acceptance Model and Information Quality are forwarded.

2.1. Learning Management System (LMS)

As institution of higher learning stirring toward providing e-learning environment and offering online courses, it has created incredible opportunity [7] that allows working adults to pursue their formal studies without have to stop working. Earlier researcher Lindeman in 1926 on adult education, he had emphasized that adult learner highly dependent on the learner and its environment [8]. As such the success of ODL highly dependent on the learner and the environment that supports the delivery of the formal lifelong learning via its

learning management system (LMS) or e-learning system. In fact, in Canada the learning and content management systems development are more robust and people friendly [9], whereas in China, the e-learning is believed as an optional mode to deliver high quality education to students [10]. LMS can be in the form of Moodle, Blackboard, and any other similar system that allows communication, sharing of information, submission of assignments, sitting for quizzes and other related learning activities between learners and lecturers ([1],[11]).

2.2. Technology Acceptance Model

In recent years, many researchers have employed TAM in their research to study the acceptance of computer based information system by organizations. The technology acceptance model (TAM) was developed by [12] to predict use and adoption of computer based information system. It is derived from the more general Theory of Reason Action [13] in which TAM is intended to explain computer usage. Many research have shown that TAM's determinants such as perceived usefulness and perceived ease of use as a good predictor for computer usage. [14] pointed out that both perceived ease of use and perceived usefulness are specific perceptions and are anchored to specific beliefs that users hold about the system. As for perceived ease of use refers to the degree to which computer technology is perceived relatively easy to use and understand [12]. This indicates that learners of ODL will use an LMS provided it is perceived effortless to use the system and easily became skilled at it.

Perceived usefulness is referred as the user's subjective probability that using a specific application will increase a person performance within an organizational context [12]. [15] pointed out that those learners of an online community will use the system when they feel it is useful to them. This suggests that learner is believed to commit to learning when they perceived usefulness to their personal and professional development where the objective and learning outcomes can be attained. Perceived enjoyment refers to the extent to which the activity of using a specific system is perceived to be enjoyable in its' own right [16]. [17] suggested that perceived enjoyment should be part of e-TAM model since studies have shown that perceived enjoyment to influence user intention to use a given computer application. In other words, if users have pleasant experience and enjoy the process while using LMS, they will be satisfied and in turn kept on visiting the LMS.

2.3. Information Quality Components

In most e-learning mode the information quality is the most crucial elements to be taken into consideration ([9],[18]). Information quality (IQ) can be defined as quality of information made available to users. Information quality refers to “the amount of accuracy, and the form of information about the products and services offered on a web site” [19]. For example information quality determines may include: accuracy, currency, relevancy, completeness, and

timeliness. This indicates that information place in the AeU PLS (Personalized Learning Space/LMS) should be of high quality so that students who have access to it are satisfied and can be retained to revisit LMS more often.[20],[21] and[22], suggested that information quality will affect user satisfaction under their information success model. This is confirmed by[23] study where they found that information quality has a significant influence on user satisfaction of an e-learning system implemented in a university in Malaysia.

2.4. Student Retention (e-satisfaction, e-retention)

2.4.1. e-satisfaction

e-satisfaction measures the overall satisfaction of online learning experience over period of time. Learners who perceives e- learning and to be useful and valuable is more likely to gain satisfactory[24]. In addition, users' satisfaction will vary since this depends on the objective of the system provided[25]. For example, LMS is suppose to provide all necessary information like up-to-date learning resources, timely announcement, and etc, if what is supposed to be presented or made available to users lack of quality, then users satisfaction will reduce. Perceived ease of use and usefulness an e-learning system like LMS have been shown to affect e-satisfaction ([26],[27]). Also, studies have indicated that information quality be included to evaluate satisfaction of an e-learning system ([26],[28]).

2.4.2. Learning Experience

Placing a syllabus online and making the content available online doesn't not guarantee the successful of the online programme. On line and distance learning is more effective if the instructional technology is applied when developing the online content/ learning material together with the principles of adult learning theories ([29],[30],[31]). Mainly online learners' interaction involve : i) learner-content, ii) learner-learner, iii) learner- tutor. These three elements contribute heavily to the learners' learning experiences. The perceive usefulness of the interaction between learner and content, learner and tutor and learner and learner influence e-retention

2.4.3. E-retention

Retention often used synonymously with loyalty[11]. Typically, distance learners in Malaysia and many other countries are non-traditional students with years of working experience, juggling with personal life, families and careers. The challenge is that when the online learners were not only distance learners but also they were not technology savvy. They had not spent their life surrounding with computers, videogames, digital devices, other IT gadgets, and other tools and toys of the digital form. Moreover, some of them are may be new to the technology, non-traditional culture of online distance education and e-learning tools. In fact they were learning to cope with this change and become "digital immigrants"[32]. Learner' self-efficiency increases the e-satisfaction[33] hence increases e-retention[34].

3. Conclusions

The aim of this study is to identify the factors affecting e-satisfaction and e-retention for LMS. The factors identified are perceived ease of use, perceived usefulness and perceived enjoyment based on the e-TAM. On the other hand, the information quality determinant has been suggested by some studies as an important factor to consider affecting e-satisfaction which in turn indirect affect e-retention. LMS characteristics should also be included since a good characteristics will increase e-satisfaction.

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