

Perceptions on Service Quality and Ease-of-Use: Evidence from Malaysian Distance Learners

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Abstract

One of the elements of an “electronic” university is the use of the Learning Management System (LMS) as the intermediary between the academic institution and students. Distance learners, as the main user of the LMS, are the focus of this study. Students’ perceptions and attitudes while using the LMS for their learning activities will influence their learning behaviour. This study explores the distance learners’ perceptions from the dimension of service quality and ease-of-use of the LMS. Survey questionnaires were answered by 451 students currently enrolled in an undergraduate degree distance learning programme. Based on a descriptive analysis (mean and standard deviations), it was found that students perceived the LMS provided by their academic institution as having a high level of service quality and ease-of-use. This study further discusses the importance and implication of the students’ perception of their LMS portal, the limitations of this study and recommendations for future research.

Keywords: service quality, ease-of-use, the Learning Management System, distance learning, Malaysia

Introduction

E-learning is gaining popularity and being adopted globally. The School of Distance Education, Universiti Sains Malaysia, started utilising the online learning portal in 2003. Recently, Saudi Arabia approved the establishment of the Saudi Electronic University (King Approves Establishment of Saudi Electronic University, 2011). E-learning has proved to be able to generate higher learning outcomes compared to traditional face-to-face learning (Islam, 2012). Furthermore, e-learning

reduces travel related stress (Omidian and Keyvanifard, 2012). One of the elements of an electronic university is the use of the Learning Management System (LMS) as the intermediary between the academic institution and students. It is important for the academic institution to provide an excellent LMS to its students because the quality of the LMS will affect learning outcomes (Chen et al., 2008). As a result of this, service quality has become an important element in research related to information systems. Several studies have been conducted focusing on various aspects of the LMS such as perceived security (Mohd. Faiz, Shahrier and Yanti, 2011), attitude (Rugayah, Hashim and Che Zainab, 2010), andragogy (Rugayah, Hashim and Nor Aini, 2010), and framework evaluation (Eibl, Von Solms and Schubert, 2006). Service quality influences relational benefits and the interaction is on-going (relational) (Chen and Hu, 2012).

There has been an extensive discussion on the quality of e-learning (Chen et al., 2008). One of the issues is in determining the right person to evaluate the quality of such a system. Distance learners are the customers of the LMS. As the customers, they are the best persons to evaluate or assess its service quality. Distance learners are also capable of providing inputs or explanations on causes of reduction in the service quality level of the LMS. In addition to service quality, this study also looks at the ease-of-use of the LMS. According to Samsudin, Nor Azila and Al-Momani (2010: 2), ease-of-use is "...the degree to which a person believes that using an information system would be free of effort." Furthermore, in online learning environments, Joo, Lim and Kim (2011) found that ease-of-use influences student satisfaction. Thus, there is a need to understand and manage students' perceptions of service quality and ease-of-use of the LMS. This research seeks to examine the perceived level of service quality and ease-of-use of the LMS among distance learners.

Literature Review

Service Quality

Quality is a strong determinant of a customer's expectations for any type of product or service (Chen et al., 2008). Quality is an important criterion for a service oriented organisation. Samsudin, Nor Azila and Al-Momani (2010: 369) defined service quality as "...judgement of a service that

contributes to customer satisfaction.” Where quality is concerned, a user does not have any physical product that he/she can hold, feel and assess. Therefore, experience in interacting or accessing the services will play a vital role in ascertaining the level of quality. Specifically, in an e-learning context, distance learners access their learning materials through a web portal also known as a Learning Management System (LMS). Their experience with the LMS will act as a representation of the service quality of the education institution they are currently registered with. Furthermore, service quality will enhance satisfaction (Lai, 2006).

Students focus on several important aspects of learning such as guidance and support from instructors, assessments, helpfulness of response by instructors and response time to their queries (Martinez-Arguelles, Castan and Juan, 2010). For distance learners, these aspects are delivered through the LMS. Service quality also has a significant influence on intention to use (Ramayah, Noor Hazlina and Lo, 2010), learners’ perceived usefulness of the LMS (Al-Busaidi, 2012), relational benefit (Chen and Hu, 2012), customer loyalty (Chen and Hu, 2012), and satisfaction (Sumaedi, Bakti and Metasari, 2011).

Distance learners who perceive their LMS to have a high service quality will exhibit a higher intention to use the system and therefore increase their learning experiences. According to Bernardo, Marimon and Alonso-Almeida (2012), e-quality should be assessed in terms of two distinct dimensions: (1) functional and (2) hedonic. Hedonic quality is an intrinsic dimension of e-quality. Hedonic quality is the value acquired by a consumer from finding and purchasing a particular good or service (Bernardo, Marimon and Alonso-Almeida, 2012). Such quality can be distinguished from purely utilitarian (functional) quality (see [page 8]). The impact of hedonic quality has received relatively little attention, especially in the online context. Nemati et al. (2012) divided service quality into efficiency, reliability, responsiveness, assurance and security/privacy sub-dimensions.

Ease-of-Use

Samsudin, Nor Azila and Al-Momani (2010: 369) defined ease-of-use as “the degree to which a person believes that using an information system would be free of effort.” Ease-of-use is an important motivation factor on distance learners’ behaviour. Ease-of-use deals with distance learners’

perceptions (Joo et al., 2011) and a significant determinant of behavioural intention (Al-Aulamie et al., 2012). The students' experience with the LMS will determine their perception of the ease-of-use of the LMS. Perceived ease-of-use will influence the actual usage and perceived learning assistance (Islam, 2012) especially in the case of less experienced distance learners.

Perceived ease-of-use is more important for the information gathering task (Gefen and Straub, 2000) and information gathering is what distance learners do most of the time. Furthermore, perceived ease-of-use is a significant influence on perceived usefulness, intention to use (Cheng, 2012; Premchaiswadi, Porouhan and Premchaiswadi, 2012), and performance outcomes in using the LMS (Schoonenboom, 2012).

In addition to the outcome of perceived ease-of-use, there are several factors influencing how distance learners perceive ease-of-use of the LMS. According to Al-Busaidi (2012), distance learners' characteristics, system quality and information quality are significant antecedents for their perceived ease-of-use of the LMS. Al-Busaidi (2012) referred to the antecedents as computer anxiety, technology experience and personal innovativeness.

Importantly, the distance learners' perception of the ease-of-use of the LMS will influence their satisfaction using the LMS.

Research Methodology

Research Design and Procedure

This study adopted an exploratory approach in trying to measure the level of perceived service quality and ease-of-use of the LMS among Malaysian distance learners. The study deployed the survey method as it is a popular and very common strategy in social science research. A cross-sectional research was deployed as the time horizon. A convenient sampling was used when distributing the survey questionnaires among first year students registered under the distance learning programme at the School of Distance Education (SDE), Universiti Sains Malaysia. Data for this study were based on the survey answers completed by 451 students currently enrolled in a distance learning programme. Distance learners at the SDE utilise the

LMS portal (Moodle based) as the interface to the course package. They access course outlines, discussions, lecture notes, assignments, forums and any related learning materials from the LMS portal. In addition to these, they are also able to view the live web streaming of lectures through the LMS portal.

Variables and Measurement

To measure the variables in this study, distance learners were asked to rate their agreement on four statements related to service quality and five statements related to ease-of-use of the LMS portal. The rating on all statements were based on a 5-point Likert scale fixed from 1 (disagree) to 5 (agree).

Service quality was operationalised using four items adopted from Montoya-Weiss, Voss and Grewal (2003). All four items were rated based on a 5-point Likert scale anchored from 1 (disagree) to 5 (agree). The items were prefaced by "State your agreement based on the following scale". One example of the item is "PPPJJ provides a high level of overall service through its site." The term PPPJJ is the abbreviation for Pusat Pengajian Pendidikan Jarak Jauh, a Malay language equivalent for the School of Distance Education. Montoya-Weiss et al. (2003) reported the reliability of the scale at .89 for the Cronbach's α coefficient.

Ease-of-use is operationalised using five items adopted from Srinivasan, Anderson and Ponnnavolu (2002). All five items were rated based on a 5-point Likert scale anchored from 1 (disagree) to 5 (agree). The items were prefaced by "State your agreement based on the following scale". One example of the item was "This website is very convenient to use". Srinivasan, Anderson and Ponnnavolu (2002) reported the reliability of the scale at .80 for the Cronbach's α coefficient.

Results and Data Analysis

The Sample Profile

The survey was conducted based on a convenient sample of 451 Malaysian distant learners. The sample consisted of 184 males and 267 females. Sixty-four percent of the respondents were below 30 years old. Three hundred and eight respondents had at least completed their studies at the diploma level. Eighty-one percent of the respondents earned below

RM3000 per month. The majority (74.1%) of the respondents were Malays. The majority (62.3%) of the respondents were married. Table 1 summarises the sample profile.

Table 1 Profile of the respondents

	(%)	Frequency
<u>Gender</u>		
Male	40.8	184
Female	59.2	267
<u>Age</u>		
< 25	10.9	49
25 to 30	53.7	242
31 to 35	17.5	79
36 to 40	8.6	39
41 to 45	4.9	22
> 45	4.4	20
<u>Highest academic qualifications</u>		
Certificate	.7	3
SPM	7.5	34
STPM	22.4	101
Matriculation	.4	2
Diploma	68.3	308
Others	.7	3
<u>Income</u>		
Below RM1000	4.9	22
RM1000 to RM1999	37.9	171
RM2000 to RM2999	38.1	172
RM3000 to RM3999	13.5	61
RM4000 to RM4999	3.8	17
Above RM4999	1.8	8
<u>Ethnicity</u>		
Malay	74.1	334
Chinese	13.1	59
Indian	8.2	37
Kadazan	.4	2
Dayak	2.2	10
Jakun	.2	1
Other	1.8	8
<u>Marital status</u>		
Single	35.3	159
Married	62.3	281
Widowed/divorced	2.4	11

Reliability Analysis

Table 2 summarises the Cronbach's α coefficient for the study variables. For service quality, the reliability estimates were .957 which clearly surpassed the .60 minimum threshold targets (Sekaran, 2005). For ease-of-use, the reliability estimates were .945 which also exceeded the .60 minimum threshold values for Cronbach's α coefficient.

Table 2 Climate survey factors and composite reliabilities

Factor label	# of items in composite	Reliability (Cronbach's α)
Service quality	4	.957
Ease-of-use	5	.945

Test of Difference – Comparison of Male and Female Respondents

A comparison of the level of service ease-of-use based on gender was conducted with the *t*-test. The results presented in Table 3 indicated no significant difference on how male and female students perceived the level of service quality and ease-of-use.

Table 3 Comparison of male and female respondents

Variable	Mean		<i>t</i> -value
	Male (<i>n</i> = 80)	Female (<i>n</i> = 35)	
Service quality	3.60	3.56	.452
Ease-of-use	3.55	3.49	.879

* $p < 0.05$, ** $p < 0.01$

Descriptive Analysis

Descriptive statistics computed included the means and standard deviations. Based on a descriptive analysis, the distance learners' level of service quality and ease-of-use were found to be considerably high. Table 4 shows the descriptive statistics for service quality and ease-of-use. The mean score for service quality ($M = 3.58$, $SD = .713$) was higher compared with that for ease-of-use ($M = 3.51$, $SD = .694$).

Correlation Analysis

The correlation analysis is summarised in Table 4. Both variables correlated positively. Service quality correlated with ease-of-use at $r = .811$, $p < .01$.

Table 4 Correlation matrix of the study variables

	Mean	Standard Deviation	1	2
Service quality	3.58	.713	1	
Ease-of-use	3.51	.694	.811**	1

* $p < 0.05$; ** $p < 0.01$

Discussion

Current Level of Service Quality and Ease-of-Use of LMS by Distance Learners

The descriptive analysis was utilised to achieve the objective of this study in assessing the current level of service quality and ease-of-use of the LMS by the distance learners. The analysis revealed the perceived level of service quality and ease-of-use among distance learners. Based on the scale used in the survey from 1 to 5, there were positive perceptions on service quality and ease-of use.

Distance learners' perceptions of service quality and ease-of use were skewed to the "agree" end of the scale with the mean score for service quality at 3.58 and ease-of-use at 3.51. A high perception on the service quality of a LMS is important as this will enhance its usage (Ramayah, Noor Hazlina and Lo, 2010). As for ease-of-use, Joo, Lim and Kim (2011) also reported a similar above median mean value in their study. Ease-of-use has been shown to significantly influence satisfaction (Joo, Lim and Kim, 2011).

The higher than median score for both service quality and ease-of use may have been due to the excellent LMS provided by the institution. The measurement items for service quality used in this study were similar to the key quality dimensions postulated by Martínez-Argüelles, Castan and Juan (2010). The result could also reflect the significant experiences of the institution which has been providing distance education programmes since 1971. However, the results obtained in this study slightly differ from those indicated by Yudi and Arif (2011) which reported an overall score of "fair".

Level of differences of male and female Malaysian distance learners

Another objective of this study was to assess the differences of service quality and ease-of-use between male and female learners. The *t*-test was utilised to achieve this objective. The results are presented in Table 3. The *t*-test indicated no significant difference between male and female learners on all the variables of this study. Since male and female distance learners have a similar perception on service quality and ease-of use, a single approach or strategy should be able to create the same output. Therefore, an education institution only needs a single approach or strategy in developing their LMS. However, if there are a significant gender differences, the education institution may need to devise a separate approach for male and female learners.

Conclusion

The students' perceptions on using the LMS for learning activities may lead to the formation of attitudes that will influence their learning behaviour (Islam, 2012). This study explored their perceptions from the dimension of service quality and ease-of-use which will influence their learning behaviour and attitude. The findings of this study can help researchers and practitioners to better understand the students' behavioural intention to use the LMS for their e-learning activities. Students will tend to use the LMS more if it is easy to use, thus increasing their learning potential. Meanwhile, a high service quality will increase students' satisfaction. Satisfied students will definitely use the LMS more and again, this will motivate them to engage in further learning processes.

Limitation and Future Research

Our research has some limitations that should be addressed for future research. First, the study was conducted in a single institution. It might be useful to replicate this study, perhaps in several institutions to generate a more solid relationship among the constructs examined. Second, although this study explores the role of service quality and ease-of-use, a major limitation is that we did not test the sub-dimensions of service quality and ease-of-use. Third, an extended analysis of the specific aspects of service quality and ease-of-use which affect students' acceptance and performance more significantly would be a worthwhile complement to this study. Finally, as cloud computing opens a new era in education and e-learning by

providing a flexible, cost effective and efficient infrastructure (Alshwaier, 2012), future research should explore the availability and effectiveness of a cloud-based LMS.

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