

The Effectiveness of e-Learning Portal in Distance Education as Perceived by Students in Universiti Sains Malaysia

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Abstract

This paper seeks to present the receptiveness and effectiveness in the e-learning portal of the distance education academic programme in the Universiti Sains Malaysia (USM) for the 2007/2008 academic session. The study involved a sample of 1084 students and focused the participation needs based on respondents' personal background, such as age, gender, education streams, ethnicity and current Cumulative Grade Point Average (CGPA). The analysis showed that most of the students had positive opinions about the effectiveness of the e-learning portal. This research is essential to gauge the initial perception of effectiveness of e-learning portal in distance education. Course evaluations are seriously important and should be increased in regularity to find out whether e-learning programs can deliver whatever they intended in distance education.

Keywords: e-learning, distance education, effectiveness

Abstrak

Artikel ini cuba memperlihatkan penerimaan dan keberkesanan portal e-pembelajaran program akademik pendidikan jarak jauh di Universiti Sains Malaysia (USM) untuk sesi akademik 2007/2008. Kajian melibatkan sampel yang terdiri daripada 1084 orang pelajar dan tumpuan diberikan kepada keperluan peserta berdasarkan latar belakang peribadi responden seperti umur, jantina, aliran pendidikan, keetnikan dan purata mata gred kumulatif semasa (CGPA). Analisis ini menunjukkan bahawa kebanyakan pelajar beranggapan positif tentang keberkesanan portal e-pembelajaran. Kajian ini perlu bagi mengukur persepsi awal keberkesanan portal e-pembelajaran dalam pendidikan jarak jauh. Penilaian kursus amatlah penting dan harus dipertingkatkan secara tetap bagi mengetahui sama ada program e-pembelajaran dapat menyampaikan apa sahaja yang mereka ingini dalam pendidikan jarak jauh.

Kata kunci: e-pembelajaran, pendidikan jarak jauh, keberkesanan

Introduction

Distance education that delivers its contents over the Internet is referred as Internet-based learning. Distance learning is defined as a non-traditional type of learning that takes place outside of the physical classroom; course contents are delivered to the students through mail delivery, radio and television broadcast, or the internet (Du, 2004; Holmberg, 1995; Sager, 1999). In addition, Clark (2002) described e-learning as content and instructional methods delivered on a computer (whether on CD-ROM, the Internet, or an Intranet), and designed to build knowledge and skills related to individual or organisational goals. In this article, the main focus and examples are drawn from the School of Distance Education, Universiti Sains Malaysia self-study courseware.

One reason for the advancement of open and distance education in Malaysia is the perceived inequality in opportunities for higher education between working adults and full-time university students (Raghavan and Kumar, 2008). When the Universiti Sains Malaysia (USM) was set up in 1969, it was conferred the unique distinction of offering courses for part-time students, besides providing courses for regular on-campus students. However, it is worth mentioning that when USM pioneered distance education in the country in 1971, few Malaysians took advantage of this mode of learning (Raghavan and Kumar, 2008).

After 40 years USM pioneering this mode of learning, the interest in distance education has grown and its use has expanded in Malaysia. This evidently led to the establishment of the Open Universiti Malaysia (OUM) in 2001. The establishment of socio-economical credibility, programmes offered through the distance education mode is similar to those available in the formal public university education system (Raghavan and Kumar, 2008). They also mentioned that course delivery, however, is tailored to suit the demands of the home-based learner, emphasising on self-instruction and pedagogically articulated content. Since 1971, many local public universities in Malaysia also provide distance learning programmes (Lee, 2001).

From chalk-on-board to Internet application, each medium has simulated prospects of revolutions in learning and teaching. However, Clark argues that research comparing learning from one medium such as the classroom

with another medium such as the internet generally fails to demonstrate significant advantages for any particular technology; therefore, these repeated failures lead us to abandon a technology-centered approach to learning in favor of a learner-centered approach (Clark, 2002). Thus, it is not the medium that causes problem; it is the design of the lesson itself and the best use of the instructional methods such as examples, practice exercises, simulations and analogies will make the difference.

Having pioneered Distance Education (DE) in 1971, the Universiti Sains Malaysia (USM) through the School of Distance Education (SDE) offers degree through distance education programmes. Through this innovative education approaches, working adults are able to undertake undergraduate courses while remaining in full-time employment. Although e-learning faculty and developers' views are just as important in determining what knowledge ought to be transferred, this paper emphasises the perception of distance learning students in an attempt to address the quality and effectiveness of the e-learning portal.

e-Learning Portal

The idea behind the development of the e-learning portal was to set up a one stop centre for reference for the purpose of electronic assisted learning such as articles, books, software, expert advice, and consultation with supervisors or lecturers. It should be noted that the print-based self-instructional modules are sent to each student, and it has not been uploaded into the portal. The portal has become a compulsory tool, and it is being used actively by both lecturers and students. Lee (2005) mentioned that the incredible number of published web articles, institutional investments in e-learning and uptake of web-based education tools in both corporate and education sectors in the past decade testifies that e-learning practice has achieved an enormous momentum and will make a tremendous impact – positive or negative – on future education. With this in mind, we can say that the application of e-learning does help expand the scope of education and can prove to be a fundamental asset, provided it is “effective”.

A study by Issham, Siti Sarah and Rozhan (2010) has highlighted the strengths and weaknesses in online learning (Table 1). It was noted that flexibility (Schrum, 2002; Petrides, 2002; Chizmar and Walbert, 1999) and

convenience (Murphy and Collins, 1997; Poole, 2000; Song et al., 2004) have become crucial elements in online learning strengths and delay in responses (Hara and Kling, 1999; Petrides, 2002; Vonderwell, Liang and Alderman, 2007; Song et al., 2004) has become the weakest element in online learning. However, still there's very few study on the effectiveness.

The quest for effectiveness is a crucial element since the use of the e-learning portal represents the involvement of an individual as well as organisational. For this reason, the effectiveness of the application of the e-learning portal should be evaluated and this is also suggested by Lee (2005). She mentioned that without knowing the efficacy of e-learning strategies one cannot know the value of their use. Therefore, Figueira (2003) said measuring effectiveness can constitute a useful tool to base decisions on the use of any e-learning strategy. Thus, with technology pervading the teaching and learning environment, it is critical to determine the capability of this learning approach to analyse the reasons students are choosing e-learning over traditional settings.

There are six principles of effective e-learning which must rely on some combination of graphics, text and audio to deliver their content (Clark, 2002). For the past ten years, Richard Mayer and his colleagues at the University of California, Santa Barbara have conducted a series of controlled experiments on how to make the best use of audio, text, and graphics to optimise learning in multimedia. Six media element principles can be defined based on Mayer's work which is discussed by Clark (2002). Based on her study, out of six principles, only four principles are happened to improve and increase the learning process. They are the multimedia principle which is adding graphics to words, the contiguity principle by placing text near graphics, the modality principle which is explaining graphics with audio and lastly, the personalisation principle by using conversational tone and pedagogical agents to increase learning.

However, Clark (2002) did mention about two principles which are not working for effective learning. The redundancy principle which is explaining graphics with audio and the coherence principle by using gratuitous visuals, text and sounds can hurt learning. Besides that, she also declared in the studies conducted by Mayer et al. (1995) have found that better transfer learning is realised when graphics are explained by audio alone rather than by audio and text. They also found similar results in two

studies for an average gain of 79%. Therefore, as critical as assessments are for e-learning programmes, the field currently does not have sufficient studies that measure the quality of e-learning programmes as well as analysis of what methods of online learning works and what does not (Du, 2004). Du argues although there are abundant studies identifying what successful e-learning programmes should look like and consists of; studies with empirical evidence measuring student satisfaction are scanty. For that reason, effectiveness of the e-learning portal shall be studied to measure student demand and satisfaction.

Table 1 Strengths and weaknesses in online learning

Studies	Strengths	Weaknesses
Murphy and Collins (1997)	<ul style="list-style-type: none"> • Convenience – Participants indicated they can read and respond to comments in online education at times convenient to them. 	
Hara and Kling (1999)		<ul style="list-style-type: none"> • Delay in responses – Students felt lack of immediacy in getting responses back from the instructor
Chizmar and Walbert (1999)	<ul style="list-style-type: none"> • Thoughtful and responsible comments. • Flexibility 	
Poole (2000)	<ul style="list-style-type: none"> • Convenience – students participated in online discussions at times most convenient to them. 	
Schrum (2002)	<ul style="list-style-type: none"> • Flexibility 	
Petrides (2002)	<ul style="list-style-type: none"> • Flexibility • Thoughtful and responsible comments 	<ul style="list-style-type: none"> • Delay in responses • Skeptic with level of expertise
Vonderwell, Liang and Alderman (2007)	<ul style="list-style-type: none"> • Thoughtful and responsible comments 	<ul style="list-style-type: none"> • Delay in responses • Lack of community or feelings of isolation

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Continued (Table 1)

Studies	Strengths	Weaknesses
Song et al. (2004)	<ul style="list-style-type: none"> • Convenience • Design of the course • Comfort with technologies • Time management 	<ul style="list-style-type: none"> • Delay in responses • Technical problems • Lack of community • Difficulties in understanding the goals of the course
Brown and Voltz (2005)	<ul style="list-style-type: none"> • Design of the course 	
Serce and Yildirim (2006)		<ul style="list-style-type: none"> • Lack of diversity of tools
Gilbert, Morton and Rowley (2007)		<ul style="list-style-type: none"> • The usability and robustness of the delivery platform are not adequate and can be very slow

Source: Issham, Siti Sarah and Rozhan (2010).

Research Methodology

The questionnaires were distributed among USM students of the 2007/2008 sessions in the School of Distance Education. Respondents were selected randomly and this sample was chosen because it represents a group of individuals who have the experience of using e-learning portal and also the resources to access. One thousand and two hundreds questionnaires were distributed in the classes handled by lecturers and supervisors. The distribution and the collection of questionnaires from the respondents were conducted during intensive classes which conducted once a year. At the end of the survey, 1084 questionnaires were returned.

The survey explored the students' receptiveness to the electronic portal. The questionnaires consisted of two sections. Section A covered the respondents' personal background, such as age, gender, ethnic group, education streams and current Cumulative Grade Point Average (CGPA). Section B contained questions about the students' receptiveness and satisfaction level such as their level of experience of e-learning portal and its content, the technical and the design of the portal, the learning activities, and the improvement needed. The data was analysed by using the Statistical Package for Social Science (SPSS) Version 12.0 based on frequency and percentage distribution. Frequencies were run to determine the distribution of the demographic profile and IT usage and experience.

This is merely some part of the study; therefore the researchers describe a simple method used to gauge the general ideas of distance students' perception on its effectiveness.

Analysis and Findings

Demographic Profile of Respondents

This section portrays respondents' demographic profile, such as gender, age, ethnicity, education streams as well as current CGPA. Majority of respondents are female (53%). As for ethnic structure, 70.1% of the respondents were Malay, 21.4% were Indian, 4.4% were Chinese and the rest were from other ethnic group. The majority of the students were from Bachelor of Sciences (32.1%). The age range was between 20 and 50 years old. The majority of the students were between 20 to 40 years old. About 42% of the respondents got 2.50–2.99 of current Cumulative Grade Point Average (CGPA), which indicated most of students are able to preserve their studies by using this system of information technology particularly by using e-learning tools.

The questionnaire was designed to capture the effectiveness in many aspects of the teaching and learning processes as well as communication. Negative statements were also inserted in the middle of the questionnaire to ascertain that the students actually read all the questions in sincere to avoid a habitual check of responses. A five-point Likert scale was utilised as 1 for strongly disagree and 5 for strongly agree. It is imperative that the students understood the instructions and all the tutorials (including video conferencing) which were coordinated by a Resident Tutor. After all, the tutorials were constructed in reference to the text book and modules that are being used in the course.

Results and Discussions

As shown in Table 2, the results indicated that most of the students had positive perception and responses to the e-learning portal in distance education at USM. The 1st question of “*e-Learning portal has helped me in my study*” and the 10th question of “*e-Learning portal gave me confidence that I can succeed in the distance education programmes*” have gained quite high scores with the mean of 4.11 and 3.92. This supports the

study from Du (2004), where she mentioned that despite the scanty resources available on quality of online education versus traditional face-to-face (F2F) education, the reasons the students are choosing e-learning over traditional F2F education can be divided into two categories—the need to obtain education as a human capital investment to remain competitive in the job market and the adult student population’s attempt to save the opportunity cost of seeking additional education. Besides that, since e-learning has the crucial elements of flexibility and convenience, the students have the ability to freely pick and choose from the menu of diverse learning experiences which enabled the participants to find the approaches that best fit the way they learn (Chizmar and Walbert, 1999). In addition to that, students also participated in online discussions at times most convenient to them (Poole, 2000). Therefore, we can say that the interests of students to the use of e-learning portal have helped them to obtain education which describes the efficacy of this system.

Another important part is the negative statements such as the 2nd question (“*I don’t need the e-learning portal for my study*”, M = 1.87), the 3rd question (“*e-Learning portal wasted my time because it takes a lot of time to load*”, M = 2.55) the 8th question (“*I will succeed even without the e-learning portal*”, M = 2.43) and the 9th question (“*I feel comfortable to study by using module without e-learning portal*”, M = 2.32) which indicated a shift towards the acceptance of the e-learning portal as an aid to their education. In an evolutionary outlook, the responses obtained was a near-reversal of a similar study by Abu Daud and Daing Zaidah (2002) that obtained an 85.5% of ‘No’ response to the question, “*I am more comfortable following online interactions than face to face meetings*”. This is also supported by Song et al. (2004) who mentioned that one of the reasons distance learners opted e-learning over face-to-face meetings is that they are comfortable with technologies.

A more important element in the responses were the social supporting elements that is inherent in the adult distance learners and this was manifested in the 5th, 6th, and 7th questions, namely that, “*e-Learning portal reduced the feeling of friendless and isolation in my study*” (M = 3.69), “*e-Learning portal allowed me to make many friends*” (M = 3.77) and “*My course mates are able to help me in my study through the e-learning portal*” (M = 3.61). The learning environment that is characterised by physical comfort, mutual respect and trust, mutual

helpfulness, freedom of expression, and acceptance of differences has been well established as conditions of the adult learner (Knowles, 1980); this environment is now possible in the e-learning portal system. Although some studies reported that there is delay in responses in e-learning (Hara and Kling, 1999; Petrides, 2002; Vonderwell, Liang and Alderman, 2007; Song et al., 2004) but still through the e-learning portal, the distance learners manifest some degree of interdependence and interconnectedness and as such show that they are controlling part of their learning process including working with others. Overall, the electronic portal is viewed with a sense of blend with the other distance learning elements in the School of Distance Education. In response to those statements, the survey has proved that there was no significant difference from gender, education streams, ethnicity and current CGPA.

Table 2 Response to the effectiveness of the e-learning portal

	Statement (N = 1084)	Mean	Std. Deviation
1	e-Learning portal has helped me in my study	4.11	.84
2	<i>I don't need the e-learning portal for my study</i>	1.87	1.01
3	<i>e-Learning portal wasted my time because it takes a lot of time to load</i>	2.55	1.08
4	I was recognised as a USM student because of the e-learning portal	3.81	.91
5	e-Learning portal reduced the feeling of friendless and isolation in my study	3.69	.95
6	e-Learning portal allowed me to make many friends	3.77	.91
7	My course mates are able to help me in my study through the e-learning portal	3.61	.93
8	<i>I will succeed even without the e-learning portal</i>	2.43	1.06
9	<i>I feel comfortable to study by using module without e-learning portal</i>	2.32	1.09
10	e-Learning portal gave me confidence that I can succeed in the distance education programmes	3.92	.92

Scoring: 5 = Strongly Agree, 1 = Strongly Disagree

Conclusion

The survey conducted had proven that the e-learning portal in the School of Distance Education has been perceived to be pedagogically effective since it has been operated for more than four decades, addressing the critical elements in distance learning in the form of social networking and the acceptance of the e-learning portal as an aid to their distance learning programme. More important, a high degree of acculturation of the use of the e-learning portal has been achieved that would only expand the application of more Internet based-pedagogies and the array of web tools in distance education. As proposed by Issham, Siti Sarah and Rozhan (2010), more investigation needs to be carried out of how we could improve the Portal to include friendlier design and recover the robustness of the delivery platform. The new emerging learning technologies such as mobile learning might support those forms of e-learning to provide high quality collaborative, contextualise and active learning.

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