

E-Readiness among Enablers of E-Learning: Impact on Higher Education in Malaysia*

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Abstract

The global impact of E-learning is felt by many nations including Malaysia. Hence, E-Learning has been included as one of its primary activities in the country's national Information Communications Technology (ICT) agenda. In planning for the future, it was imperative that the Malaysian government knew the level of readiness in the country, in particular among policy-makers, providers, enablers and receivers. It is important as E-learning has been viewed as a way to further the goals of its national education agenda. A nation-wide study to determine the state of E-learning readiness in the country was conducted in 2004. This paper reports the findings of the study jointly conducted by the Ministry of Energy, Water and Communication and the Open University Malaysia in particular among 977 enablers of E-Learning. The e-readiness as perceived by the respondents was examined from several dimensions: learner readiness, management readiness, personnel readiness, content readiness, technical readiness, environmental readiness, cultural readiness and financial readiness. The findings of the study and how it has impacted on some of the government's decision for further development of higher education is included in the paper.

Introduction

Malaysian educators have used ICT to deliver parts or the complete curriculum. This is generally referred to as e-Learning. According to Nagy (2004) E-learning refers to learning that depends on or is enhanced by electronic or online communication using the latest information and communication technologies. Another definition by Development Gateway (2003) is the application of ICT in support of distance learning, self-guided learning and the traditional classroom.

The successful implementation of e-learning programmes is determined by adequate infrastructure and access to ICT applications. Other success factors include top-down support, technical support and the availability of e-content. In order to gauge the country's preparedness for E-learning, the Malaysian government together with the Open University Malaysia felt that a jointly conducted study to determine the level of overall readiness amongst higher education and training institutions in the country was necessary. The study was then carried out in 2004, with a pilot run between February and April and the actual data collected between May and August.

For this study, the researchers defined E-learning as "the use of network and multimedia technologies to improve the quality of learning by enabling access to knowledge and remote resources for the development of a K-society" (Abas, Kuldip & Harun, 2004, p. 2). Both the country's distance learning universities, Universiti Tun Abdul Razak and

Open University Malaysia (OUM) have incorporated E-learning. Combined, these two universities serve about 40,000 students, 80 percent of whom are with OUM. Also, more public and private universities in Malaysia employ various E-learning methodologies for either off-campus or full-time learning. The National Broadband Plan was recently launched by the Energy, Water and Communications Ministry aiming to achieve a critical mass of 1.2 million broadband subscribers through national projects such as SchoolNet, eGovernment, Malaysia Research and Education Network (MyREN) and telemedicine. Its Minister, Datuk Sri Dr. Lim Keng Yaik expressed that broadband penetration should be at 50 percent of the population if Malaysia is to be a developed country by 2020. The government's immediate target is increase the broadband penetration rate from two percent of the population to five percent in 2006 and to 10 percent in 2008 (Sani, 2004).

The Study

The study measured the level of E-learning readiness (ELR) among Malaysians: policy-makers, providers, enablers and receivers in higher education and the training industry. This paper only reports the findings among the group of enablers of E-learning. The study aimed to find out the extent the enablers (lecturers, trainers and recipients of the Demonstrator Applications Grant Scheme (DAGS)) are equipped, competent or ready to deliver e-Learning.

A survey form was designed by the research team comprising academics and researchers from higher education, training organizations and IT research companies. This was next administered online via the OUM Web site and face-to-face nationwide. A total of 977 individuals responded where 522 (53.3 percent) were males and 451 (46.2 percent) were females. The majority (37.8 percent) were 31 to 40 years old. Another 28.2 percent were 41 to 50 years old; 23.9 percent were less than 30 years old and the rest (9.8 percent) were 51 years old or older. Most of the respondents (90.2 percent) were professors, lecturers, tutors or teachers. A small group comprised trainers (1.9 percent) and DAGS recipients (0.5 percent). Many were from higher educational institutions (92.2 percent) with 65.5 percent from the public institutions and 34.5 percent from the private sector.

On computer use, 98.6 percent of the respondents had access to a computer. Some 95.8 percent used a computer at work. As much as 95.9 percent used the computer daily or almost daily, three percent of the respondents used a computer once a week a few times a year, once a month or never. The computer was largely used for email (93.4 percent), applications software (91.8 percent) and to find information (78.9 percent). They were least used for chatting/instant messaging (38.0 percent) and online shopping/reservation/banking (35.2 percent). The majority of enablers (70.9 percent) have Internet at home but only 39.5 percent accessed it from home. The larger number (57.3 percent) preferred to access Internet from their workplace.

Patterns of Readiness

Eight dimensions of readiness were investigated: learner, management, personnel, content, technical, environmental, cultural and financial readiness. In addition, an overall perception of each area of readiness was also sought from the respondents. The results of the findings are given below.

Learner Readiness. A majority, that is, 82.5 percent of the enablers felt that their students/community members are keen to upgrade their academic/professional qualification through E-learning. Another 80.2 percent claimed that their students/community members have gone through E-learning. A majority (74.0 percent) of the enablers expressed that their students/community members were concerned that qualifications obtained via E-learning, although recognized by the government were inferior to those from full-time on-campus courses.

TABLE 1. Enablers' Perceptions of Learner Readiness

Description	Yes n (%)	No n (%)	Missing Value n (%)	Total N (%)
Students/community members are interested to upgrade their academic qualification	806 (82.5)	150 (15.4)	21 (3.3)	977 (100)
Students /community members have used the opportunity to engage in E-Learning	784 (80.2)	171 (17.5)	22 (2.3)	977 (100)
Students/members are capable of managing their time for E-learning	572 (58.8)	373 (38.2)	32 (3.3)	977 (100)
Students/members are committed to E-learning	517 (52.9)	415 (42.5)	45 (4.6)	977 (100)
Students/members must have good interpersonal or social skills	646 (66.1)	296 (30.3)	35 (3.6)	977 (100)
Students/members are worried that qualifications obtained via E-learning will not be recognized	661 (67.7)	250 (25.6)	38 (3.9)	977 (100)
Students/members are worried that qualifications obtained via E-learning are not the same	723 (74.0)	74.0 (22.1)	38 (3.9)	977 (100)

TABLE 2. Enablers' Perceptions of Management Readiness

Description	Yes n (%)	No n (%)	Missing Value n (%)	Total N (%)
Organisation has a vision/mission on E-learning	807 (82.6)	150 (15.4)	20 (2.0)	977 (100)
Organisation has formulated policies related to the provision of E-Learning	652 (66.7)	300 (30.7)	25 (2.6)	977 (100)
Organisation recognizes qualifications obtained via E-learning	592 (60.6)	323 (33.1)	62 (6.3)	977 (100)
Organisation is ready for E-learning	598 (61.2)	329 (33.7)	50 (5.1)	977 (100)

Management Readiness. Table 2 shows that 82.6 percent of the enablers reported that their organisation has a vision and or mission on E-learning. Besides that, 66.7 percent of the enablers said that their organization has formulated policies related to the

provision of E-learning and 61.2 percent believed that their organisation is ready for E-learning.

Personnel Readiness. It was found that 71.5 percent of the enablers indicated that their organization provides technical assistance to staff and students. Over 60 percent of the enablers claimed that their organisation has a central dedicated unit as well as a team to implement E-learning. Conversely, only 35.4 percent stated that entire E-learning projects were outsourced.

TABLE 3. Enablers' Perceptions of Personnel Readiness

Description	Yes n (%)	No n (%)	Missing Value n (%)	Total N (%)
Has a central unit dedicated to E-learning initiatives	635 (65.0)	307 (31.4)	35 (3.6)	977 (100)
Has a team to implement E-learning	664 (68.0)	281 (28.8)	32 (3.3)	977 (100)
Has a team of dedicated instructional designers	519 (53.1)	410 (42.0)	48 (4.9)	977 (100)
Outsources its entire E-learning project to an external party/parties	346 (35.4)	570 (58.3)	61 (6.3)	977 (100)
Has a staff development plan for E-learning	346 (35.4)	570 (38.4)	61 (6.2)	977 (100)
Provides training on how to support E-learning	628 (64.3)	314 (32.1)	35 (3.6)	977 (100)
Provides technical assistance to staff and students	699 (71.5)	227 (23.2)	51 (5.2)	977 (100)

TABLE 4. Enablers' Perceptions of Content Readiness

Description	Yes n (%)	No n (%)	Missing Value n (%)	Total N (%)
Variety of E-learning materials	733 (75.0)	209 (21.4)	35 (3.6)	977 (100)
Content for E-learning is sufficient	413 (42.3)	527 (53.9)	37 (3.8)	977 (100)
Content for E-learning is appropriate for the needs of the target group	604 (61.8)	326 (33.5)	46 (4.7)	977 (100)
Content for E-learning is useful	819 (83.8)	116 (11.9)	42 (4.3)	977 (100)
Content for E-learning is meaningful	789 (80.8)	144 (14.7)	44 (4.5)	977 (100)
Adequate online content support	528 (54.0)	396 (40.6)	53 (5.4)	977 (100)

Content Readiness. The majority of the respondents agreed that there were a variety of materials available and these were appropriate, useful and meaningful (see Table 4). Less than half (42.3 percent) agreed that they were sufficient. More than half believed that there was adequate online content support.

TABLE 5. Enablers' Perceptions of Technical Readiness

Description	Yes n (%)	No n (%)	Missing Value n (%)	Total N (%)
Provides the necessary infrastructure for E-learning	637 (65.2)	310 (31.7)	30 (3.1)	977 (100)
Provides technical help to E-learners	505 (51.7)	442 (45.2)	30 (3.1)	977 (100)
Overcome most of the technical problems myself	419 (42.9)	528 (54.0)	30 (3.1)	977 (100)
Content delivery is satisfactory	455 (46.6)	485 (49.6)	37 (3.8)	977 (100)
Using Intranet technology	645 (66.0)	292 (29.9)	40 (4.1)	977 (100)
Using Internet technology	660 (67.6)	267 (27.3)	50 (5.1)	977 (100)

Technical Readiness. As Table 5 indicates, more than half of the respondents agreed that their organization provided the necessary infrastructure for E-learning, provided technical help to E-learners and that the organization were using both Intranet as well as Internet technologies. A majority tended to agree that content delivery is satisfactory although more than half of the respondents depended on someone else to overcome technical problems.

TABLE 6. Enablers' Perceptions of Environmental Readiness

Description	Yes n (%)	No n (%)	Missing Value n (%)	Total N (%)
Government policies	624 (63.9)	319 (32.7)	34 (3.4)	977 (100)
Mass media has created public awareness	702 (71.8)	248 (25.4)	27 (2.8)	977 (100)
Lack of legal provisions on intellectual property	317 (32.4)	611 (62.6)	49 (5.0)	977 (100)
Certain government policies related to investment	414 (42.4)	498 (51.0)	65 (6.6)	977 (100)
Lack of English language proficiency	220 (22.5)	706 (72.3)	51 (5.2)	977 (100)

Environmental Readiness. Most enablers perceived that the mass media has created public awareness in E-learning and that government policies have helped generate greater readiness (71.8 percent and 63.9 percent, respectively). Some (32.4 percent) agreed on the lack of legal provisions on intellectual property and that the lack of proficiency in the English language had contributed to the students being less ready.

TABLE 7. Enablers’ Perceptions of Cultural Readiness

Description	Yes n (%)	No n (%)	Missing Value n (%)	Total N (%)
Effective method of learning	827 (84.6)	127 (13.0)	23 (2.4)	977 (100)
The teacher is still the best information provider	748 (76.5)	206 (21.1)	23 (2.4)	977 (100)
An efficient means of disseminating information	840 (86.0)	111 (11.4)	26 (2.6)	977 (100)
Enables learners and tutors to communicate and interact better	678 (69.4)	271 (27.7)	28 (2.9)	977 (100)
Discussions via the Internet make learning more meaningful	679 (69.5)	267 (27.3)	31 (3.2)	977 (100)
The personal touch is important In the E-learning process	859 (87.9)	87 (8.9)	31 (3.2)	977 (100)
An advanced mode/stage in teaching and learning	836 (85.6)	97 (9.9)	44 (4.5)	977 (100)

TABLE 8. Enablers’ Perceptions of Financial Readiness

Description	Yes n (%)	No n (%)	Missing Value n (%)	Total N (%)
Willing to buy a computer	780 (79.8)	170 (17.4)	27 (2.8)	977 (100)
Willing to spend on Internet connection	810 (82.9)	139 (14.2)	28 (2.9)	977 (100)
Taken a loan to buy a computer	256 (26.2)	687 (70.3)	34 (3.5)	977 (100)
Afford to buy a computer and pay for Internet access	833 (85.3)	114 (11.7)	30 (3.1)	977 (100)
Organisation provides computer loans to employees	653 (66.8)	284 (29.1)	40 (4.1)	977 (100)
Organisation has invested in the provision of E-learning to its employees	610 (62.4)	322 (33.0)	45 (4.6)	977 (100)

Cultural Readiness. In culturally ready, respondents perceived that E-learning is an effective method of learning although the teacher is still the best information provider (see Table 7). They also believed that E-learning efficient in disseminating information and that it enables learners and tutors to communicate and interact better. It was also felt that discussions via the Internet make learning more meaningful and that personal touch was important. As much as 85.6 percent of the respondents agreed that E-learning is an advanced mode in teaching and learning.

Financial Readiness. Table 8 indicates that 85.3 percent of the enablers can afford to buy a computer and pay for Internet access. Further to that, 82.9 percent are willing to pay for Internet connection and 79.8 percent were willing to purchase a computer for E-learning. Only 26.2 percent took a loan to buy a computer. More than 60 percent of the enablers perceived that their organizations have invested in E-learning.

Based on the above findings, it can be summarized that the overall perceptions among the enablers point positively to furthering the goals of E-learning in the country, particularly in advancing Malaysia's National Information Technology Agenda to move into a Knowledge-based economy by 2010 and to achieve the status of a developed country by 2020.

Overall Perceptions of E-Learning Readiness

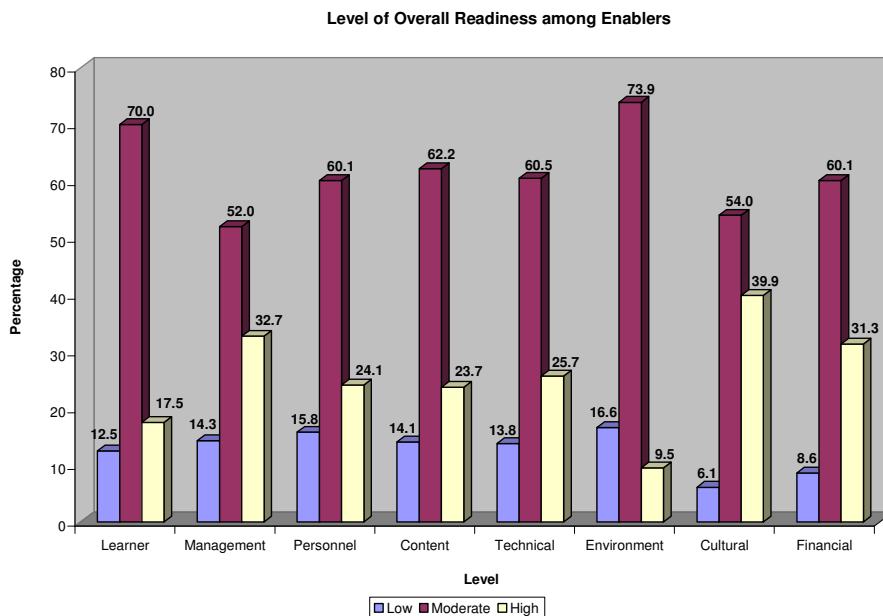


Figure 1. Overall perception of the eight dimensions of readiness

The enablers' overall perception (on a scale of 1 to 10, 1 being the lowest and 10 the highest level of readiness) of each dimension was also found. The order of readiness based on the mean scores (from highest to lowest) is: cultural (6.77), management (6.24), financial (5.99), technical (5.95), content (5.91), personnel (5.88), learner (5.73) and finally, environmental (5.27). The statements responded to were, respectively:

- How ready are you in using E-learning for teaching and learning?
- How ready is the management in your organization/institution for E-learning?
- How would you rate the overall financial readiness in your organization/institution towards E-learning?
- How ready are you technically (infrastructure, access, facilities, etc) for E-learning?
- How ready are you in terms of content for E-learning?
- How ready are the personnel for E-learning?
- How ready are your students/community members for E-learning?

- How ready is the society/nation for E-learning?

The overall perception scores were also grouped into: low readiness (scores averaging 1 to 3), medium readiness (scores averaging 4 to 7) and high readiness (scores averaging 8 to 10). Figure 1 illustrates the bar graph based on these scores. See also the percentage of respondents for each dimension and level of readiness.

In general, it can be concluded that readiness for each of the eight dimensions is mostly moderate (refer to Figure 1). Enablers believed that they were more ready (93.9 percent are moderately and highly ready) than their students/training participants to embark on E-learning but felt that the nation as a whole was not as ready (83.4 percent are moderately and highly ready). If enablers were among the key factors to successful implementation of E-learning, the country should be confident that a majority will support and contribute positively to the growth of E-learning in higher education as well as in the training industry. Also as indicated by a total of 91.4 percent agreeing that management was moderately and highly ready, it appears that organizations are ready to invest in E-learning infrastructure, content and development. Hence, coupled with the national broadband plan, E-learning has a bright future in Malaysia.

Concluding Remarks

The findings were presented to the National Consultative Committee on E-Learning, chaired by the Secretary General of the Ministry of Energy, Water and Communication. This comprised high ranking officers from the government as well as key figures from the E-learning industry. The main outcomes include: (a) support for a significant amount of funding under the 9th Malaysia Plan for a project called Malaysian Grid for Learning or MyGfL, a web-based content aggregator for E-learning content, and (b) the establishment of a national centre for E-learning to provide the necessary E-leadership.

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* This paper was based on the report submitted to the Ministry of Energy, Water and Communications. It was titled, "E-Learning Readiness in Malaysia 2004," edited by Zoraini Wati Abas, Kuldip Kaur and Hairudin Harun.