

Students' attitudes toward the use of the Internet for learning: A study at a university in Malaysia

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Abstract

This study investigated the success of a technology and Internet-enriched teaching and learning environment in molding positive attitudes among students toward using the Internet for learning at a university in Malaysia. Students were provided with computers facilities, required to complete two compulsory generic courses in information technology, and the lecturers actively encouraged the use of information technology, in particular, the Internet in the teaching and learning processes. Results from the study indicated that students had positive attitudes toward using the Internet as a learning tool, adequate basic knowledge of the Internet, and viewed the learning environment as supportive of using the Internet for learning. Students with better basic Internet skills and who viewed the learning environment as promoting the use of the Internet favored using the Internet for learning. The university achieved its objectives of promoting the use of the Internet for teaching and learning purposes. As the university begins to offer Web-based courses, the generic courses in information technology should likewise be redesigned to introduce the concepts of Web-based learning environments. These courses should in fact be conducted as Web-based courses to prepare the students to learn in these learning environments.

Keywords

Internet-based learning, Web-based course, Technology-based learning, Attitudes toward the Internet

Introduction

The use of the Internet for teaching and learning purposes has received increasing attention over the recent years. Mitra and Steffensmeier (2000) concluded that a networked learning institution where students have easy access to computers could foster positive attitudes toward the use of computers in teaching and learning. They found that a computer-enriched learning environment was positively correlated with students' attitudes toward computers in general, and the role of computers in facilitating teaching and learning. Liu, Macmillan, and Timmons (1998) perceived integrating computers into a learning system as a complex instructional system in which student learning is impacted by lecturers, students, administrative and technical staff, computer hardware and software resources, and the computer laboratory and classroom settings. They reported that students' with positive attitudes toward using computers also have positive attitudes toward using computers for their learning.

In Universiti Malaysia Sarawak, students are encouraged to internalise the use of technology in their campus activities through the provision of up-to-date computer facilities and generic information technology courses, which were compulsory for all students. Lecturers were also encouraged to use information technology and in particular, the Internet in their instructional practices. The premise is that through constant interaction with information technology and a sound foundation in information technology, students will build up positive attitudes towards computer, thus promoting the use of information technology in all aspects of life.

The integration of information technology in the learning environment at Universiti Malaysia Sarawak started with the inception of the university (Universiti Malaysia Sarawak Annual Report, 1995, pp. 6-7). Universiti Malaysia Sarawak Annual Report 1996, stated that "... we have shown that our emphasis on technology has given a feature of distinction in undergraduate curricular design.... Our pioneer students, at last, fully appreciated the Generic Development Program, for they found that their ability to communicate, their competence in information technology and their confidence and flexibility were at time more important than their own grounding in the core course" (Universiti Malaysia Sarawak Annual Report, 1996, pp.4-5). Two compulsory courses in information technology are included in the Generic Development Program to inculcate the information technology culture among the undergraduates. Universiti Malaysia Sarawak has continuously reinforced importance of information technology and the Internet to prepare students for a knowledge-based society (Universiti Malaysia Sarawak Annual Report, 1998, pp. 2-3; 1999, p.2).

Purposes of the Study

This study aimed to answer the following questions:

- What were the students' attitudes toward using the information technologies, in particular, the Internet in their learning tasks?
- What were the relationships between students' basic skills and knowledge in the Internet obtained through these generic courses and their attitudes toward using the Internet for learning?
- Did the learning environment in Universiti Malaysia Sarawak have a positive impact on the students' perceptions of using the Internet as a learning tool?

Sample

The sample of this study consisted of 88 second-year undergraduate students randomly selected from all the second year students enrolled in the five faculties (Faculty of Cognitive Sciences and Human Development, Faculty of Medicine and Health Sciences, Faculty of Resource Sciences and Technology, Faculty of Engineering, and Faculty of Information Technology) at Universiti Malaysia Sarawak.

Research Instrument

The research instrument in this study was a questionnaire divided into four sections. The first section of the questionnaire collected the students' demographic variables, namely gender, race, faculty, and CGPA.

The remaining three sections of the questionnaire consisted of Likert-type statements, each with five choices of response from "strongly disagree" to "strongly agree". The second section of the questionnaire measured the students' basic knowledge and skills of the Internet. Sample statements for this section were "I can search for resources and information through the Internet", "I can use Netscape Navigator, Internet Explorer, or other Internet Browsers", and "I can seek information using search engines such as Infoseek, Yahoo, and Excite". There were a total of seven statements in this section.

The third section of the questionnaire measured the students' perceptions of the learning environment at University Malaysia Sarawak. Specifically the students were asked whether the learning environment facilitated the use of the Internet for learning purposes. Sample statements for this section were "The lecturers regularly ask students to explore related resources from the Internet", "The students are exposed to the Internet and how it functions", and "I can access the Internet from various locations in the University". There were a total of seven statements in this section.

The fourth section of the questionnaire measured the students' attitudes toward the use of the Internet for learning. Sample statements for this section were "Every student should know how to use the Internet", "Learning through the Internet is an effective way to obtain information and knowledge", and "I can learn effectively in most subjects through the Internet". There were a total of seven statements in this section.

The last three sections of the questionnaire reported a Cronbach alpha value of 0.91 during the pilot testing of the questionnaire to a sample of 40 students.

Results

Students' attitudes toward using the Internet for learning

There were seven statements measuring students' attitudes toward using the Internet for learning. For each statement the responses were coded 1 for "strongly disagree" to 5 for "strongly agree". Thus the scores for each student on the seven statements ranges from 7 to 35. Scores from 6.5-17.5, 17.5-26.5, and 26.5-35.5 were classified as having "negative", neutral", and "positive" attitudes toward using the Internet for learning purposes. Most of the students had positive attitudes toward using the Internet for learning. The distribution of the students' overall scores and attitudes is shown in Table 1.

Scores	Attitudes	Frequency
6.5-17.5	Negative	7
17.5-26.5	Neutral	4
26.5-35.5	Positive	77

Table 1. Students' attitudes toward using the Internet for learning

Results from independent t-test and One-Way ANOVA analyses indicated that there were no significant differences in the students' attitudes toward the use of the Internet for learning based on gender ($t=0.263$, $df=86$, $p=0.793$), ethnic race ($F=0.373$, $df=4/83$, $p=0.827$), and CGPA ($F=0.137$, $df=4/83$, $p=0.991$). However, significant differences were detected for the students' attitudes on using the Internet for learning based on their field of study ($F=4.143$, $p=0.004$). Students from the Faculty of Information Technology (mean scores=28.7), Faculty of Engineering (mean scores=28.0), and Faculty of Resource Science and Technology (mean scores=27.3) had significantly more positive attitudes toward using the Internet for learning purposes compared to students studying at the Faculty of Cognitive Sciences and Human Development (mean scores=23.8) with p -value < 0.05 .

Relationships between students' basic knowledge of the Internet with their attitudes toward the use of the Internet for learning

There was seven statements measuring students' basic knowledge of the Internet. For each statement the responses were coded 1 for "strongly disagree" to 5 for "strongly agree". Thus the scores for each student on the seven statements ranges from 7 to 35. Scores from 6.5-17.5, 17.5-26.5, and 26.5-35.5 were classified as having "poor", average", and "good" basic knowledge of the Internet. Most of the students had good basic knowledge of the Internet. Distribution of the students' overall scores and basic knowledge and skills on the Internet is shown in Table 2.

Scores	Attitudes	Frequency
6.5-17.5	Poor	3
17.5-26.5	Average	8
26.5-35.5	Good	77

Table 2. Students' basic knowledge of the Internet

Students' total scores on the seven statements measuring their basic knowledge of the Internet were correlated with their total scores on the seven statements measuring their attitudes toward the use of the Internet for learning. The Pearson, r , value was 0.582, with p -value < 0.0005 . There was a significant relationship between the two variables. Students who were better acquainted with the Internet had more positive attitudes toward the use of the Internet for learning purposes.

Relationships between students' perceptions of the learning environment with their attitudes toward the use of the Internet for learning

There were seven statements measuring students' perceptions of the Universiti Malaysia Sarawak's learning environment with reference to promoting the use of the Internet for assisting the learning process. For each statement the responses were coded 1 for "strongly disagree" to 5 for "strongly agree". Thus the scores for each student on the seven statements ranges from 7 to 35. Scores from 6.5-17.5, 17.5-26.5, and 26.5-35.5 were

classified as students perceiving the learning environment in the university "did not facilitate", "neutral", and "facilitated" the use of the Internet for learning. Most of the students agreed that the learning environment in the university encouraged students to use the Internet in their learning tasks. Distribution of the students' overall scores and their perceptions of the learning environment are shown in Table 3.

Scores	Attitudes	Frequency
6.5-17.5	Did not facilitate	10
17.5-26.5	Neutral	13
26.5-35.5	Facilitated	65

Table 3. Students' perceptions of the University Malaysia Sarawak's learning environment

Students' total scores on the seven statements measuring their perceptions of the university's learning environment were correlated with their total scores on the seven statements measuring their attitudes toward the use of the Internet for learning. The Pearson, r , value was 0.398, with p -value < 0.0005 . There was a significant relationship between the two variables. Students who felt that the learning environment in the university promoted the use of the Internet had more positive attitudes toward the use of the Internet for learning.

Discussions

This study revealed that generally students at Universiti Malaysia Sarawak had positive attitudes towards learning using the Internet. This perception was not race or gender specific. It was also not related to students' scholastic ability. However students from the Faculty of Information Technology, Faculty of Engineering, and Faculty of Resource Sciences and Technology had more positive attitudes compared to students from the other two faculties. This could be because the students in these two faculties were more exposed and had more opportunities to use the Internet for course related activities.

The students generally had the basic skills in using the Internet and perceived the learning environment in the university encouraged them to use the Internet as learning tool. The students' basic skills in the Internet and their perceptions of the learning environment were related to their use of the Internet to supplement their learning requirements. Students with better basic skills in the Internet and perceived the learning environment to be supportive of using the Internet for their learning tasks generally had better attitudes toward using the Internet to improve their studies. These findings were in agreement with those reported by Mitra and Steffensmeier (2000) and Liu, Macmillan, and Timmons (1998).

Thus Universiti Malaysia Sarawak's efforts to promote and to encourage the lecturers and students to make use of the technology, in particular the Internet to support the learning activities were quite successful. The learning environment actively encouraged the use of the Internet for learning and teaching. The generic courses were achieving its' targets of providing the basic skills for using technology and the Internet and further inculcate the habit of using the Internet during their study at the university. However, as the university moves to the next phase of using the Internet for learning purposes, by implementing Web-assisted and Web-based learning courses, the generic Information Technology courses should likewise be implemented in Web-assisted or Web-based format (Hong, Lai, Holton, 2001; Scagnoli, 2001). This format of learning places less emphasis on face-to-face lectures and more on learning partially or totally on the Web. Thus it is important that students were exposed to this type of learning so that they could benefit from Web-assisted and Web-based courses conducted in their field of specialization by the various faculties.

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