Research Journal of Applied Sciences, Engineering and Technology 9(11): 990-994, 2015
DOI:10.19026/rjaset.9.2592
ISSN: 2040-7459; e-ISSN: 2040-7467

Submitted: November 3, 2014 Accepted: December 18, 2014 Published: April 15, 2015

Research Article

Effectiveness of E-Learning System among Postgraduate Students in Kuala Lumpur, Malaysia

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Abstract: The purpose of this study is to investigate the effectiveness of e-Learning system based on the usage, perception and satisfaction among Postgraduate students in relation to the differences between race, gender, department and level of computer usage experiences. The study was conducted in university, Kuala Lumpur. The questionnaire was distributed to 67 postgraduate students. E-learning is composed of three main factors, the usage, perception and satisfaction of e-Learning between department and access duration. The results of this study showed that most (always) of the student used e-learning to upload lecture notes (28%) and submit assignment (30%). The use of the e-learning system by lecturers might increase student perception that e-learning system has made studying life easier. Postgraduate students from different departments have similar levels of computer usage experience; sources of awareness of e-learning similar number of times accessing e-learning in a week and have similar reasons for using the e-Learning system. There was significance difference of the reasons using e-Learning for group discussions and download lecture notes between department. In conclusion, the usage of e-Learning among postgraduate student was low and mainly to download lecture notes.

Keywords: E-learning, perception, post-graduate, satisfaction, usage

INTRODUCTION

E-learning is one of the methods of learning which has been introduced since 1990's. However e-learning are more frequently used and important in 21st century with the exploration of information technology that has become important and popular because of precision, easy and convenience. They are more used to e-learning as a complement to more traditional method (Bernard *et al*., 2004). E-learning techniques using internet as a medium to deliver knowledge, assignments, lecture notes between teachers, lecturers, administrators and students. This process will give benefit to the user because their can use it according to their own time and space. Another advantage of e-learning was that it can be accessed anytime, anywhere according to the capability of the user (Henry, 2001; Roffe, 2002).

The e-learning system may act as a cost-effective approach to facilitate learning mechanism involving a larger group of people in the information and technology field. The development of e-learning was rapidly increased. This showed that there was a demand on the e-learning as it can benefit many user especially teachers, lecturers and students. Besides the quality, the content can be updated and improved very quickly (Young, 2002; Butson, 2003).

The involvement of e-learning in higher education in Malaysia started twenty years ago when the Educational technology was implemented in education ministry in Malaysia. However, the rapid growth of web-based technologies and the high usage of the Internet have made educating and teaching using the internet available. In Malaysia there was higher demand in continuing study in higher education and therefore many institutions have started to use e-learning. Many universities in Malaysia have implemented the e-learning and the e-learning system was from the information technology department but the content for

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each subject depending on the teachers and lecturers (Selim, 2007; Asirvatham, 2005).

The objectives of this study are to identify the usage of e-Learning system and to determine the effectiveness of the usage, awareness and satisfaction among Postgraduate students according to the differences between gender, race and departments. In terms of the introduction of E-learning into an existing course, it is important for management and lecturers to understand that there are many reasons why it can be beneficial.

MATERIALS AND METHODS

This study was conducted among postgraduate students. Based on purposive sampling, the exact numbers of respondents to ensure the validity of this study were 67 respondents from the total 80 students. A form of paper-based questionnaires was developed and distributed to the respondents during the class. The questions in the questionnaire consist of two section. The first section was regarding the respondent background which was age, gender, department and race. The second section consist of level of computer usage, the main reason using the e-learning, the opinion on effectiveness of the e-learning, such as user-friendly, to download lecture notes and improvement suggested on the e-learning system.

The questionnaire was design according to learner dimension, course dimension and design dimension (Sun *et al*., 2008). The e-learning that was being used by the post-graduate student in this study was using a website that was developed by the university. The website helps the lecturer to upload lecture notes, quiz, tutorial and assignments to the student. In the website there was a board on discussion and announcement for lecturer. As for students they used the website to download lecture notes, assignment and tutorial.

RESULTS

This study involved 67 postgraduate student's with 11.9% of the respondents was male and 88.1%

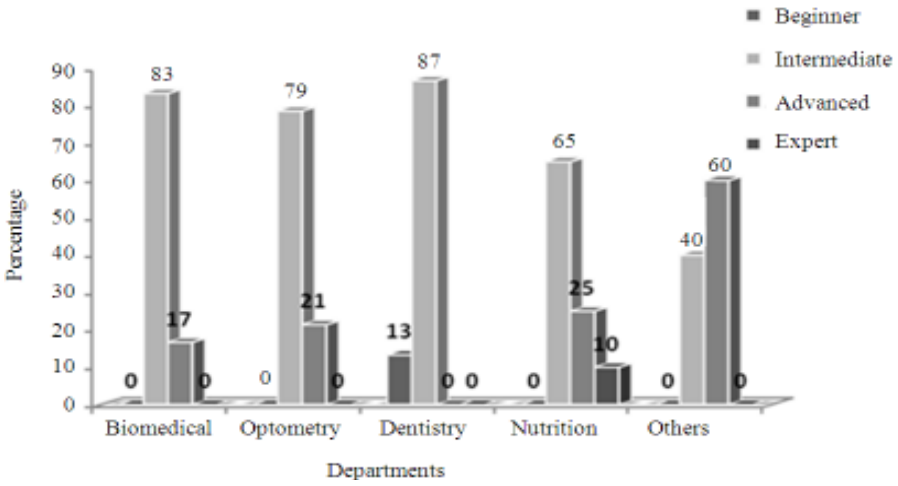

Fig. 1: Comparisons of the levels of the computer usage experience between departments

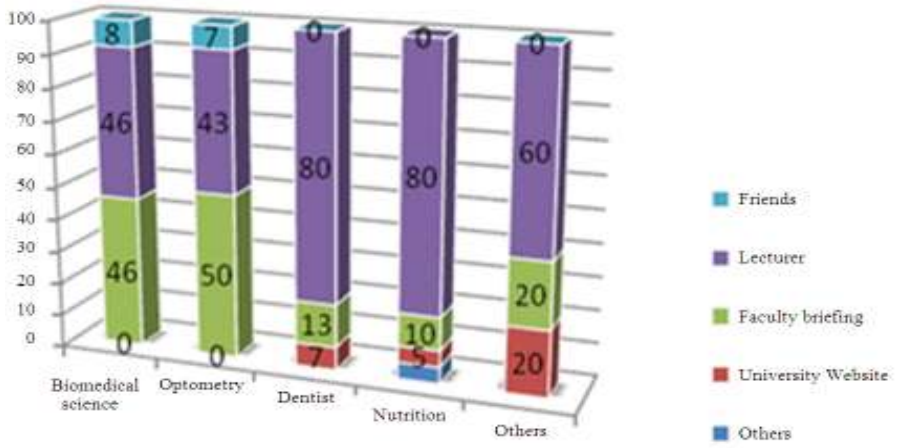

Fig. 2: The sources of e-learning system between departments

were female. The respondent according to race was 59% Malay 19% Chinese, 10% Indian and 12% others. This study involves department of health science which was biomedical, optometry, nutrition, dentistry and others.

As computer and internet skills may affected student's use of e-learning, Fig. 1 showed the comparison on level of computer usage experience between department with most of the respondents were intermediate users. Besides that, most of the students were aware about the e-learning system after been introduced by their lecturers followed by faculty briefing as shown in Fig. 2.

Figure 3 explains the usage of e-learning to check announcement. Most student especially from biomedical courses rarely check the anocement in the e-learning system. Students that always check announcement was nutrition and others. Figure 4 showed that student mostly never used the e-learning to do discussion among friends and lecturers. More than 80% of biomedical, optometry and nutrition never used e-learning for group discussion.

In order to understand the course dimension, Fig. 5 shown that more than 40% of student from department biomedical, optometry, dentistry and others often download lecture notes using the e-learning system. In Fig. 6, 20% of the student agree that the e-learning has made study life easier when it was effectively used by the lecturer. In order to study the learner dimension, Table 1 showed the effectiveness of e-learning and the satisfaction level of using the e-learning. Most students agree that the e-learning system that has been used in the university was user friendly and the features are

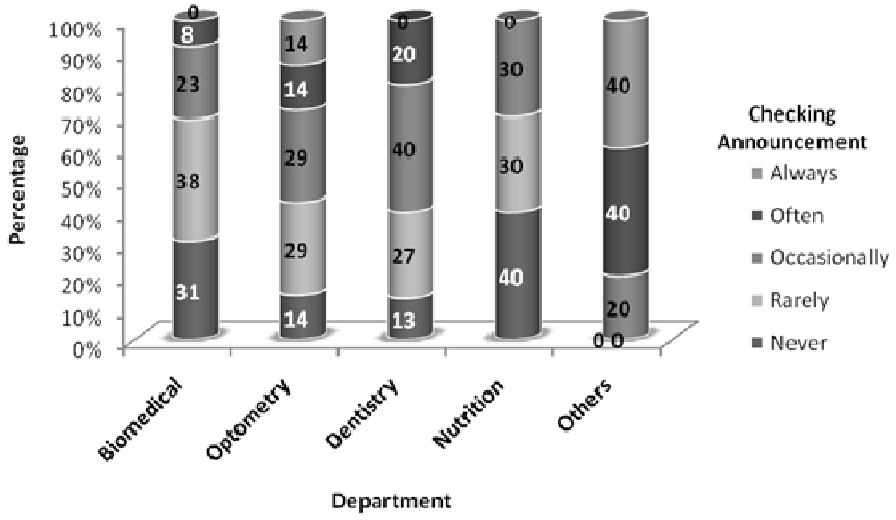

Fig. 3: The usage of e-learning system for checking announcement between departments

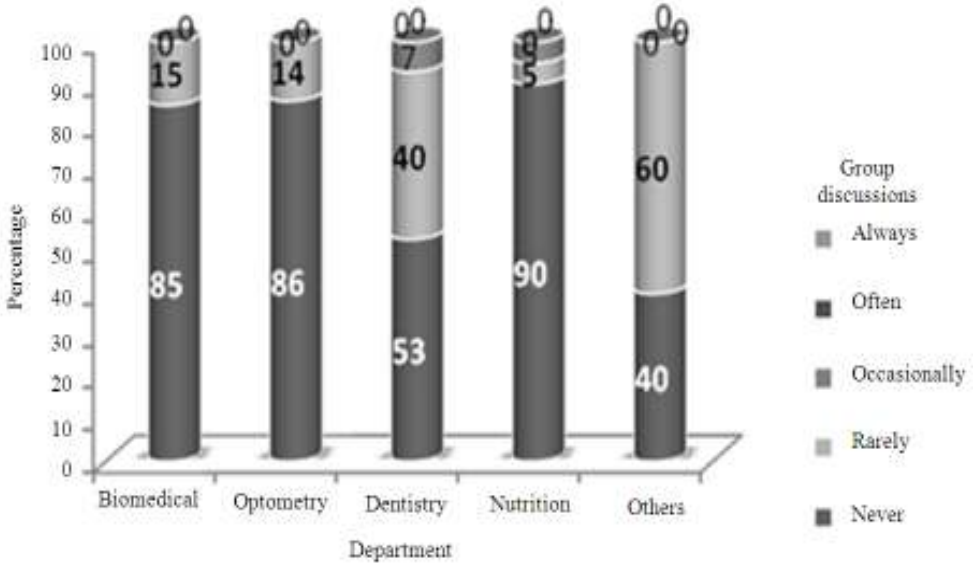

Fig. 4: Distribution of usage of the e-learning system for group discussions between departments

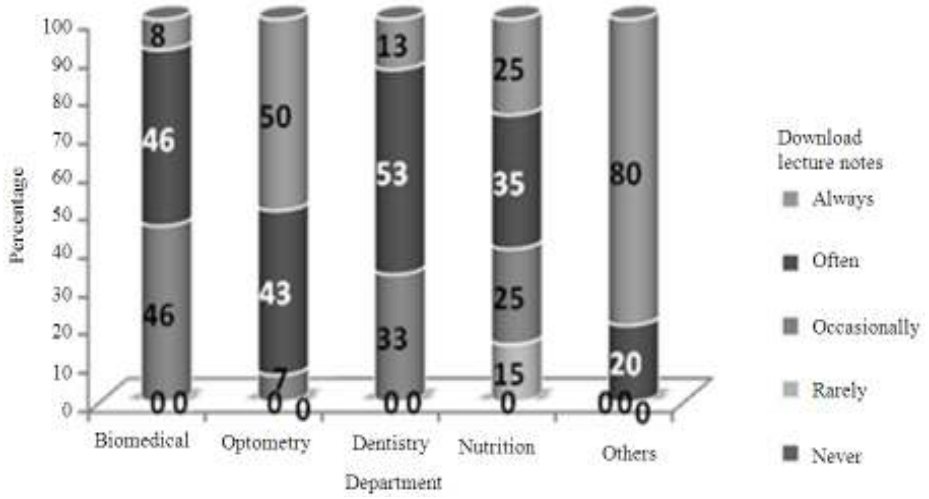

Fig. 5: Distribution of usage of the e-learning system for downloading lecture notes between departments

Table 1: Effectiveness and user satisfaction of e-learning system among s postgraduate students

Statement	Mode	Mean	S.D.
User friendly	4	3	0.70
Provide course information and lecture notes	3	3	0.96
Effective tool for learning and communication	3	3	0.84
Clear organization and features	4	3	0.80
Effective tool for lecturers	2	3	0.98
Overall satisfaction	3	3	0.82

S.D.: Standard deviation

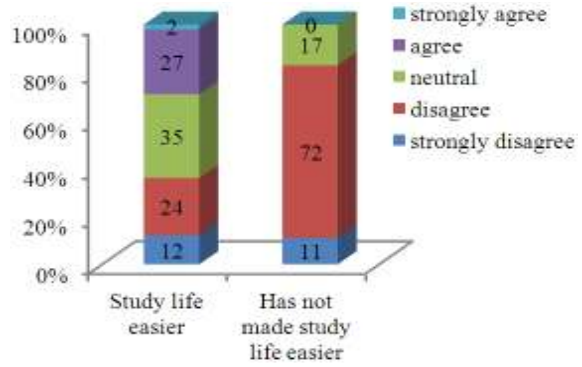

Fig. 6: Level of agreement study life being easier when the e-learning was use effectively by lecturers

clear. However most of the student indicates that overall satisfaction was low which is in category 'neutral'.

The comparison of reasons of using e-learning was shown in Table 2. There was significant difference of opinion on using e-learning between departments for download lecture notes, group discussion and checking announcement. Based on Kruskal-Wallis statistical test in Table 2, there was significantly different between department in relation to the statements "checking announcement", "download lecture notes" and "group discussion". Mann Whitney U Test was used to determine pair-wise comparisons for these 3 statements between departments which indicated only "checking announcement" showed significant different between

Table 2: Comparison on various reasons of e-learning between department using kruskal wallis test

Usage	H	p value
Assignment submission	4.48	>0.050
Download	14.42	0.006
Group discussion	10.56	0.032
Send e-mail	0.85	>0.050
Check course	4.98	>0.050
Trying model question	8.10	>0.050
Checking announcement	16.96	0.002

Biomedical Science and other departments and between Nutrition and other departments.

DISCUSSION

The comparison on level of computer usage experience between department with most of the respondents were intermediate users are obtained in this study. E-learning user might have different skills of ICT depending on previous experiences on IT. The skills, knowledge and attitudes towards IT usually increasing as the age increased as they gained more knowledge on ICT especially in higher institution. A previous study have same agreement with the findings from this study that there are no significant differences between male and female students regarding the attitudes of ICT use (Woodrow, 1991). Moreover many of the faculty leaders and administrators were novice technology users, who use only the basic functions of the programmers in the computers only such as word processing and power-point presentations. Therefore they need to get some experience and training in the

knowledge and skills needed to be effective technology leaders (Henry, 2001).

Verbal communications between students and lecturers are the most effective way in delivering the messages about certain information. From the result, there were no interrelations between median numbers of times they spent to access the e-learning system in a week according to different departments. The knowledge about e-learning system among the students is probably in equal distribution types which influenced the using of e-learning system as most of them using the e-learning system to submit the assignments and downloading the lecture notes (Amoroso and Cheney, 1991).

This can be explained as both of the applications are frequently used by the lecturers. Besides that, only a few of the students used the e-learning system as a tool for group discussions. Therefore, it can be conclude that the e-learning system was not the best medium for group discussion as there were other alternative that can be used such as various social networks nowadays including Yahoo Messenger and Facebook which are found to be faster and effective tool to downloading and uploading file (Joo *et al*., 2000). Furthermore, there is no relationship between the students satisfaction on e-learning system as an effective tool for learning with their decision in recommending it to their university friends. Besides that, the study showed the students agree that the lecturers were effectively used the e-learning system will be more likely to agree that this has made their studying life easier (Arbaugh, 2002).

The lecturers that effectively use the e-learning system such as to upload the lecture notes and to accept assignment submission by the students were important in helping to reduce the time in searching and accessing related information as well as reducing the cost they have to pay for printing (Thurmond *et al*., 2002). In addition, it can be also concluded that there is no association between students overall satisfaction about the e-learning system with the likelihood that they will suggest any changes or improvement to the system. This can be explained as even though they were satisfied with the e-learning system, they still think that the system need few changes and improvements as the e-learning system should be user friendly, have interesting features and updated with the present technologies. Besides that, some of the students suggest no changes or improvement even they were not satisfied with the system. This is because they might use the e-learning system in average that related to their basic needs such as downloading lecture notes and submitting their assignments.

CONCLUSION

In our study we can conclude that Postgraduate students from all departments have similar levels of computer usage experience (intermediate), sources of awareness of E-learning (mainly from lecturers), similar number of times accessing e-learning in a week (1-3 times) and have similar reasons for using the E-learning system (assignment submission and downloading lecture notes). More effective use of the E-learning system by lecturers might increase student perception that E-learning system has made studying life easier.

ACKNOWLEDGMENT

The researchers wished to thank Universiti Kebangsaan Malaysia for the research grant UKM-PTS-2011-055 and PTS-2013-135.

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