UNIVERSITI PUTRA MALAYSIA

**DISTANCE LEARNERS' SATISFACTION TOWARDS
INFORMATION TECHNOLOGY USAGE**

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By

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APRIL 1998

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The study focuses on learners' satisfaction towards IT usage in DE programmes. The first objective is to determine the satisfaction level of learners towards Internet and WWW Usage in terms of facilities, presentation mode and support services provided. Secondly, it determines the difference in learners' satisfaction level towards Internet and WWW usage with learner background in the various aspects of ethnic group, gender, organisation, professions, computer experience, educational achievement and computer background.

The size of sample was 74 respondents from the population of 140 learners of IDEAL. Data were collected using self-administered questionnaires were given to

respondents in one of their face-to-face meetings with their lecturers in Universiti Putra Malaysia.

Results showed that respondents' satisfaction level on the overall usage of IT in their learning was said to be of moderate satisfaction. Specifically, however, in relation to facilities provided in the program, it was rated as moderate satisfaction. There were some aspects of the facilities such as the availability of registration and scheduling facilities of on-line tutorial and modules for learners and the need of back-up servers as these aspects are very important in the running of their program. The second component which is presentation mode showed that respondents were also moderately satisfied with the way materials were presented. It was found that several improvements could be made in terms of having up-dated on-line help tools, attachments of study references and having more colourful presentation of materials which could attract learners. As for support services, it was quite difficult to see learners' perception on this, but it could be concluded that as overall, respondents were also moderately satisfied with the current system. Nevertheless, with quicker response time and availability of back-up sites would improve the current situation of the program. For the second objective, the study showed that there was no difference in learners' satisfaction level of IT usage towards the aspects of facilities, presentation mode and support services provided from the various characteristics of learners.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi sebahagian daripada keperluan untuk Ijazah Sarjana Sains.

KEPUASAN PELAJAR-PELAJAR JARAK JAUH TERHADAP PENGGUNAAN TEKNOLOGI MAKLUMAT

Oleh

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APRIL 1998

Pengerusi   :   Prof. Madya Dr. Hjh. Maimunah Ismail

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Kajian memfokus kepada tahap kepuasan pelajar terhadap penggunaan teknologi maklumat dalam pelaksaan pembelajaran jarak jauh. Objektif pertama adalah untuk menentukan tahap kepuasan pelajar terhadap penggunaan Internet dan WWW dari segi kemudahan yang disediakan, mod persembahan dan khidmat sokongan. Kedua, ia menentukan perbezaan tahap kepuasan pelajar terhadap penggunaan Internet dan WWW daripada aspek latarbelakang pelajar yang merangkumi kumpulan etnik, jantina, organisasi, pekerjaan, pengalaman komputer, pencapaian akademik dan latarbelakang komputer.

Saiz sampel adalah seramai 74 responden dari populasi 140 pelajar IDEAL. Data telah dikumpul daripada soalselidik secara urus-sendiri yang diberikan kepada

pelajar dalam satu sesi perjumpaan bersekemuka pelajar mereka dengan pensyarah di Universiti Putra Malaysia.

Hasil kajian menunjukkan kepuasan responden terhadap penggunaan teknologi maklumat dalam pembelajaran mereka secara keseluruhan adalah di tahap sederhana. Kajian menunjukkan berhubung dengan kemudahan yang diberikan, program ini dikatakan di tahap kepuasan sederhana. Terdapat beberapa aspek mengenai kemudahan yang disediakan seperti pendaftaran dan penjadualan 'on-line tutorial' dan modul dan juga server gantian sebagai satu komponen utama pelaksanaan program perlu kemaskinikan. Mengenai teknik persembahan maklumat, responden juga mempunyai tahap kepuasan yang sederhana. Peningkatan persembahan perlu dilaksanakan terhadap menyediakan 'up-dated on-line help tools', lampiran rujukan, dan persembahan maklumat yang lebih menarik perhatian pelajar. Daripada aspek khidmat sokongan, secara keseluruhan, responden juga merasa kepuasan yang sederhana. Walau bagaimanapun, dengan adanya reaksi yang lebih pantas and kemudahan 'back-up sites' akan memperbaiki keadaan program. Bagi objektif kedua, kajian menunjukkan tidak terdapat perbezaan pada tahap kepuasan pelajar terhadap penggunaan IT di dalam aspek kemudahan yang disediakan, persembahan maklumat dan khidmat sokongan mengikut pelbagai latarbelakang pelajar.

CHAPTER I

INTRODUCTION

Distance Education in Malaysia

Moving towards the technological future is the topic of many futurists as we head towards the 21st century. The technological advances of the 20th century set the paradigm shift from distribution of information to one of access of information. This shift represents a move in learning from a teacher-centered to a learner-centered environment.

Delivery of education and training programme and courses should be well established to ensure a positive feedback in the learning process. There happens to be a lack of emphasis put into the design and delivery of training programs. We need to stress that there must be a balance between the design and delivery of such programs. Ensuring that all students are trained and educated to meet the changing workforce, careful planning of such programme have to take place. Success in the knowledge-based society of the future will require a variety of critical skills, including active, self-directed learning, the ability to access, analyse and manipulate data and the ability to communicate across the regional and national boundaries. Through existing and new IT, the tool will enable people to learn and work together and to

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access, share, and generate information regardless of geographical boundary. This digital revolution drives major changes in the way education is produced and delivered. Traditional means of education are not adequate to meet the needs of large populations for life-long learning.

Presently, the demand for having educated and skilled workforce increases rapidly in the country. The country's development in tertiary education during the Seventh Malaysia Plan period is aimed at increasing the enrolment at the first degree level in the local public institutions of the age-group of 19-24 from 2.5% in 1995 to 5.6% in 2000 (Government of Malaysia, 1996). This is also to increase post-graduate courses from 11.55% (total enrolment) at the degree level in 1995 to 14% in the year 2000. The third aim of tertiary education is to increase the capacity to meet the growing local demand for higher education (Government of Malaysia, 1996). To meet the manpower requirements of the growing tertiary education, Malaysia has to increase the enrolment at the degree, diploma and certificate levels. Under the Vision 2020, we need to develop the society in becoming an informed and knowledgeable society. At the same time, this will require more highly skilled manpower in the developed field. Moreover, with the rising cost of face-to-face learning system, knowledge and technology explosion, Malaysia has viewed DE as a mode for providing education and training opportunities (Abdul Rahman, 1996). There were about 3.373 million citizens in the country at the age of 20-29 years old in 1992 with only as many as 160,566 enrolling in institutions of higher learning (Statistics Department, 1992). It is quite clear that there is very limited number of citizens that have tertiary education.

Distance Education programmes has already been in place on a modest scale in Malaysian institutions of higher learning such as *Sekolah Professional dan Pendidikan Lanjutan* (SPACE) in Universiti Teknologi Malaysia (UTM), *Pendidikan Jarak Jauh* in Institute Technology Mara (ITM), *Pusat Pendidikan Jarak Jauh* in Universiti Kebangsaan Malaysia (UKM), Institute of Distance Education and Learning (IDEAL) in Universiti Putra Malaysia (UPM) and *Pusat Pendidikan Jarak Jauh* in Universiti Sains Malaysia (USM). Each institution has its own expansion programme.

Therefore, the main objective of DE is to have the age group of 19-24 or those currently employed to pursue tertiary level courses at the degree level (Government of Malaysia, 1996). One of the objectives of DE is to meet the target of having at least 30 percent of the population receiving tertiary education by the year 2020 (Johari Mat, 1995). This includes short courses aimed at upgrading the knowledge and skills of the workforce at the managerial and supervisory levels. DE has been defined as an instructional delivery that does not constrain the student to be physically present at the same location as the instructor. Historically, DE means correspondence study. However, Abdul Rahman (1996), interprets DE as having the following objectives:

- To offer members of the society access to education and acquire knowledge and skills of their choice for life-long learning

- To offer "second chance" or alternatives to those who wish to pursue higher education for higher qualification

- To "up-date" educational administrators knowledge and skills with the latest development through continuing education

- To offer opportunities of up-grading serving professionals hence in overcoming shortage of graduate teachers.

- To offer quality education for the less fortunate students especially those in the remote areas

- To offer wider opportunities and establish a more flexible system for teachers to upgrade their knowledge and skills in training.

DE has characteristics, which are different from the conventional education. According to Keegan (1988), DE is characterised by:

- The use of technical media to permit teacher-student communication and deliver course content and instruction,

- The provision of two-way communication that allows students to benefit from or initiate dialogue,

- The teaching of students as individuals, cut off from other students and other means of learning not directly associated with the teacher, and

- The influence of an educational organisation in preparing and delivering instructional materials and student support services

According to Lohuis (1996), having DE linked through the Internet, we could obtain many advantages from it compared to the traditional media. These advantages are much cheaper in the long run compared to the traditional media such as using telephone, mail, radio and television. Linking these learning materials is faster, more user-friendly and accessible world wide if designed using the proper software.

In the country's present stage of development, DE will take the place of increasing the number of citizens with higher education. This at the same time gives an opening for our citizens to receive quality higher education at a cheaper rate.

Currently Malaysia is in the stage of the 'Information Age'. IT is a strategic tool to support the growth of the Malaysian economy as well as enhance the quality of life of the population (Government of Malaysia, 1997). IT has the role in the national development to improve efficiency, productivity and competitiveness. Due to this, an Education Network was launched involving 50 secondary schools (Government of Malaysia, 1996). The education network facilitated communications and interactions between students and teachers. This also included access to educational information both within and outside the country through Internet. There were also similar initiatives by the local universities to develop computer networking with linkages within the campus and between campuses within the Joint Advanced Research Integrated Networking (JARING) the local gateway to the Internet.

The National Information Technology Council (NITC) was also developed for members of the public and private sectors in the 7th Malaysia Plan period as an advancement in the development process and lifestyle of the population (Government of Malaysia, 1996). Its focus is on extensive application and usage of technology. It was established as a 'think tank' and advisor to the government on IT development. NITC formulates national plan and identify key programmes, which will contribute to the transformation of the Malaysian society as a whole thus becoming a knowledge-based society. According to the 7th Malaysia Plan, RM2.3 billion has been allocated to ministries and agencies to invest in IT related

programmes and projects. This included establishment of national infrastructure, installation of computer networks to improve connectivity, encourage resource and information sharing and lastly installation of advance computer systems to handle a larger volume of transactions (Government of Malaysia, 1996).

There are many different types of IT tools that are available in the market. They are teleconferencing, computer-mediated-communication, audio, audio-graphic, computer-based-learning, computer managed learning, multimedia applications and coursewares, and lastly the Internet. Learning technologies have enormous capacity to support advance restructuring of teaching and learning method. We need to assure that the nation uses IT to improve tertiary education thus providing learners with the knowledge, skills and expertise they need to become globalised citizens.

IT encompasses a wide range of equipments and applications that directly or indirectly affect student performance. IT has the potential to provide the means in improving the quality of teaching methods and learning across the country. They are tools where the effectiveness measured by whether they improve student performance and assist students in achieving full potentials. IT offers information in a variety of forms whether text, audio or video allowing students to use the medium most effective for learning. Technologies enable students to work individually or as groups and get access to vast sources of information. Information technologies stimulate students as active learners who are able to control the pace and direction of content, questions, and responses. It is clear that information technologies can provide learners with equitable access to learning irrespective of the geographical location.

The determinant of success of information education has forced us to look into the quality and availability of education offered. Education, including training, is becoming the number one enterprise around the world. The reason for this trend is that the most important input into the modern productivity systems is no more land and capital but the "know-how" technology. This will enable learners to be familiar with the rapid changes of information usage with the use of world technologies. Another aspect mentioned earlier is also that humans are the most valuable assets of the country and with education this will add value to the human capital.

While DE is far from new, we have seen the explosion in the mechanisms and tools available for its implementation and support. DE has definitely integrated new communication technologies, which allow the programme to succeed. Recent advances in the computer networking technologies showed great promise for DE. Programmes using IT could be rapidly revised and users to be given more freedom of time and location for their studies. With the ever-growing expansion of network access world wide and standardised tools for multimedia and hypertext access, DE programmes are able to reach further and wider than ever before. With the increasing pervasiveness of the globally capable network of IT tools, DE has the potential for explosive growth and acceptance in our society.

Statement of Problem

Currently, DE programmes are being employed in institution of higher learning throughout the country. In the last few years, we have seen more traditional media

communications that have added its functionality with audio-cassette, video-cassettes, cable TV, satellite TV, computer-based-communication such as electronic-mail and video-conferencing. At the same time, we have seen rapid increase in the technologies available to educators and trainers. A distance programme needs to undergo various planning and design to ensure that programmes being developed fulfil the needs of the learners. IT plays an important role in.developing DE programmes. There is the need of careful designing of course materials for the environment. With respect to the content and design of programmes, there are many issues and considerations that should be looked into. The users of a programme must always have the means to take control of what they are learning. Many programmes are developed without much consideration of the design mode thus creating problems and issues that should be discussed.

There are many problems that were encountered from the development of DE programmes. Problems encountered were mentioned by Steeples *et al.* (1994) that discuss the need of flexible learning in higher education with the use of computer mediated communication which is a type of IT tool. Emphasis on the flexible pattern of learning that the learners wanted constitutes group discussions through using computer networks. The knowledge-gap which concerns learners' satisfaction of IT usage in learning is very limited. Therefore, this gap need to be explored to see the areas of programme design that leads to learners' satisfaction.

There were other problems raised related to students being inactive during face-to-face dis b cussions. One of which is that during video conferencing they tend to be highly active. This shows that they are able to communicate if given a chance through using IT tools. Other

problems encountered by learners were having support from administrators and tutors during computing problems. Learners tend to consult other people rather than those that have the ready knowledge (Jones *et al,* 1992). Learners tend to seek help from close friends for assistance. With the availability of IT tools that could develop learning systems which assist learners in learning would definitely solve lots of learners problems in learning.

Due to these problems, questions have arisen regarding IT usage in DE programmes. These questions are:

1. Are learners satisfied with the facilities, presentation modes and support services provided in the DE programme?
2. Is there a difference in learners' satisfaction level relative to the facilities, presentation modes and support services aspect in the eyes of the various groups of learners?

Specifically the study was to determine whether learners are satisfied with IT usage in DE programmes in terms of facilities, presentation of teaching-learning materials and support services provided.

Research Objectives

The objective of the study was to examine the satisfaction level of learners towards Internet and WWW usage provided by IDEAL (Institute of Distance Education and Learning), UPM.

Specific Objectives

1. To determine the satisfaction level of learners towards the Internet and WWW usage in terms of facilities, presentation mode and support services provided.

2. To determine the difference in learners' satisfaction level towards Internet and WWW usage with learners' background in relation to ethnic group, gender, organisation, profession, computer experience, educational achievement and computer background.

Limitation of Study

The study is only limited to how the respondents, in this case, the learners enrolled in Bachelor of Computer Science at IDEAL, perceive the use of IT in DE programmes in respect of facilities, presentation mode and support services provided. The criteria used to measure the satisfaction level of learners cannot be generalised as the respondents were considered as a captive group.

Significance of Study

From the objectives which have been mentioned and information gathered from this research, we could get better insights of IT usage in distance education. There are not many research looking into the perceptions of learners towards IT usage in DE programmes. However, there are many international research which have looked into information technology usage in learning. This will therefore contribute further towards the enhancement of IT knowledge and usage in DE particularly in the Malaysian context.

The findings of the study could be used to assist future implementers of DE to optimise IT usage and plan ahead for more needed resources of IT tools in the local market. Furthermore, it is a known fact that with hands-on information on technology tools, learners are able to have access to learning materials more easily and efficiently. The findings of the study could also be useful for future planning and implementation of more sophisticated IT usage in the Malaysian DE programmes.

Operational Definition of Terms

Information Technology

The use of computers and telecommunication systems for storing, retrieving and sending information such as the Internet and World Wide Web (WWW).

Distance Education

Distance Education is defined as a teaching and learning system in which learners are able to study and learn away from the usual location of the trainer. It may be at home, at work or both, and at suitable times that allow them to meet their study requirements.

Internet

It is also a global collection of networks of millions of computers, all interfacing with one another to produce the most advanced and effective means of communication yet created (Utusan Malaysia Berhad, 1997).

E-mail

Electronic mail allows messages to be sent via the network for the purpose of contacting and collaborating with other people. The contact can happen across the hall or the world enabling learners to correspond with other students, instructors, administrators, and other experts.

Presentation Mode

The way materials of a learning programme are being sent to learners. These include screen designs, illustrations, content layout, language and settings.

Learner Support Systems

A system that assures learner has sufficient support on computer problems, tutoring problems, on-line help services and communication facilities.

Network

A set of computers that are connected to each other and can be used as a means of sending and sharing information or messages.

Learner

A person who is learning a subject or skill in a certain programme

World Wide Web (WWW)

WWW is a set of documents that are located on different computers all over the world connected to each other through the Internet. It is used to store information about a certain subject of interest.

Comp_Science

It is a mail server that acts as support to learners when queries are made. Learners get hooked up to Comp_ Science to get up-to-date materials.