CHAPTER 3
METHODOLOGY

3.0 Overview

The main purpose of this research was to find out the perceptions of adults towards e-learning as a method of learning. As mentioned in earlier chapters, e-learning programs in Malaysia are not as widespread as traditional classroom programs. Therefore, an exploratory research was conducted to understand the current situation in Malaysia. This study aimed to answer the following research questions:

1. What are the general opinions of instructors in University Tun Abdul Razak and Open University of Malaysia on the e-learning method for adult learners in Malaysia?

2. How do adults perceive e-learning and how well can they accept this learning method?

3. What are the adults' expectations on e-learning programs and implementation, as compared to the traditional classroom method?

4. What are the motivations and obstacles behind Malaysian adults to use e-learning as a method of lifelong learning?

5. What are the Malaysian adults' perceptions towards success factors in implementing an e-learning program?

Before starting any field work, a preliminary analysis of literature was carried out by looking through materials from libraries, the Internet, journals, conference papers and previous research related to this area. It was aimed at providing an overview of the e-learning market and its worldwide development. In order to promote this
learning method, it is necessary to understand the forces behind that can motivate or hinder expansion of e-learning programs. Several positive factors and negative indicators from an adult point of view were identified. Adult perceptions and expectations are also important influencers towards the development of this learning method. Hence, different aspects of perceptions and expectations are drawn to provide guidelines for programs developers. With the information provided through the analysis of literature from 1964 to 2003, some possible factors for successfully implementing e-learning programs were tested. Questions related to implementation of e-learning programs in higher education institutions were also collected. These questions were also used to understand the opinions of institutions on the e-learning programs offered.

3.1 Research Methodology

This is an empirical study employing survey and interview research methods. These methods save time and cost while being able to reach a wide variety of respondents. The questionnaire survey method allows for a wider spread of sample in short period of time. It also allows generalization to be made concerning characteristics of the entire population being studied (Greenfield, 2001)

Two forms of questionnaires were developed – one paper-based and one online. Both forms of questionnaires, which were identical in content, catered for general opinions, were distributed to the adults through researcher’s contacts. Respondents for the paper-based questionnaire were required to return the completed questionnaires before the deadline given. By doing this, the time required to wait for completion of questionnaire was controlled with the help from researcher’s contacts, and a higher response rate within limited time frame was ensured. An online survey form was designed to reach adults who have frequent access to the Internet. The cost was reduced
with this paperless contact and free hosting service from the Internet. The questionnaire was posted online and the link was sent by e-mail to adults through researcher’s contacts. Both printed and online surveys were done by distributing questionnaires to a snowball sample of adults in public. Respondents were limited to the friends, relatives and colleagues of researcher’s contacts with minimum SPM educational qualification.

Interviews helped to gather wider opinions and in-depth information on e-learning programs in Malaysia. With the time allocated for interviews with staff from institutions of higher learning, fruitful discussion and generous feedback were able to take place. Interviews were carried out with two main players in Malaysia e-learning programs: University Tun Abdul Razak and Open University Malaysia. Through the interviews, a clearer picture of current e-learning programs offered was seen. Furthermore, a deeper understanding of the programs implementation and public responses was obtained.

3.2 Development of Instrument

As mentioned in earlier sections, the survey and interviews were two main components in this study to gather primary data. Firstly, the researcher directed the questions to institutions of higher learning offering e-learning programs to understand the provider’s point of views. The questions designed were based on the information needed to form a comprehensive picture of today’s e-learning environment. Questions were divided into four main categories:

a) Institution’s background and learning model
b) Student enrolment and responses
c) Adult learners participation
d) Future planning for adult e-learning market
Secondly, the questionnaire for a public survey was designed for adults who could be prospects for e-learning programs, and also be used to seek the market point of view. It aimed to find out the desires of adults towards further study as well as their perceptions and expectations on e-learning programs. The questionnaire was divided into three sections:

a) Background questions related to further study and awareness of e-learning

The questions in Section A aimed to filter out respondents who had no interest at all in furthering their study and had not heard of e-learning. This group of respondents was not required to answer Section B where detailed questions of e-learning were being asked. They just need to complete Section C by filling in their personal data. For respondents who had either an interest for further study or had heard of e-learning or answered positively to the two background questions, they were required to complete both Sections B and C.

b) Understanding, perceptions and expectations of e-learning

Section B touched on respondents' previous learning and Internet experiences, general understanding of e-learning, motivations and hindrances to e-learning, possibility of adults using e-learning as a learning method, perceptions of adult toward e-learning based on past experiences and other resources. Most of the questions in Section B required respondent to choose one option from multiple choices. There were two questions using 5-point Likert Scale, which were Question 8 and Question 11. In Question 8, respondents' perceptions on e-learning based on several aspects were sought using Likert Scale whereas Question 11 sought their expectations of e-learning programs criteria and the desires programs structures. There were three open-ended questions in this section where respondents were asked to give their personal understanding and comments.
c) Personal data

Personal information of respondents was recorded in Section C. Data collected were gender, age group, race, occupation, education level, marital status and income level. The personal data was recorded to see whether there was any influence of respondents’ background towards e-learning opinion and expectations.

3.3 Pilot Test

In order to determine if the respondents could understand the questions, 20 copies of preliminary questionnaires were distributed to 20 adults. After the pilot test, questions that were not suitable are taken out and questions that caused confusion were rephrased. Initially, Question 8 in Section B asked about respondent’s concern on several aspect in e-learning where the respondent was required to rate the level of importance for each aspect. Respondents had difficulties to measure the level of importance and some responded that level of importance does not measure one’s perceptions. Therefore the question was rephrased by providing several statement concerning e-learning characteristics to test respondent’s level of agreement for each statement.

3.4 Distributions and Return of Questionnaire

The study aimed to gather opinions from a wide variety of respondents. The respondents had to have a minimum SPM or equivalent qualification. This was because the minimum requirement for enrolling in an e-learning course is SPM. A snowball distribution method was used as explained later on page 54 and page 59. Respondents were limited to researcher’s contacts, their friends, relatives and colleagues. The questionnaires were distributed in two forms: online survey and distribution by hand.
3.4.1 **Online Survey**

Traditionally, surveys are usually conducted by handing a hardcopy of questionnaire to the respondents. They are requested to complete and return to the researcher. As this is a research on e-learning, the Internet platform was considered suitable to find out the response of prospective e-learners using an electronic survey. Therefore, an online survey was carried out from 15\(^{th}\) December 2003 to 15\(^{th}\) January 2004.

Firstly, a website (www27.brinkster.com/elearningsurvey) was used to host the online survey. This website provides free hosting of websites for 6 months. Active Server Pages (ASP) was chosen as the programming language to implement the online survey. It is easy in setting up, writing and maintaining an ASP web site because the code and the page are together. ASP works with any browser running on any computer because only the HTML page is sent back to the host. The website was designed using Microsoft Visual InterDev as a development tool because it enables the developer to build dynamic web sites using Active Server Pages. It offers the web development a WYSIWYG view and colorized code.

The web pages were created based on the questionnaire formats. In order to help the respondents understand the online survey, an introductory letter was appended as the first web page when they went to the URL provided. The remaining web pages were divided according to Sections A, B and C in the questionnaire. During the development of the web pages, option buttons were heavily used in all sections. To make the analysis simple, respondents could only choose one answer for each question asked. If the 'others' option was chosen, respondents were required to fill in the blank text box placed beside the option. If there was no answer to further explain the 'others' option, a dialog box would prompt a request for further explanation. There were four
command buttons used as a control for the respondents. As soon as the respondents finished answering all questions in the particular web page, they could click on the command button to go into the next web page or to the next procedure. All answers from respondents were posted to the Microsoft Access database, which was provided by www.brinkster.com.

Notifications of this online survey were sent by email to different groups of people known to the researcher. These groups of prospects were encouraged to send the link to other groups of people they know. Using this snowball method, the survey could be distributed to a wider area and different groups easily. The researcher sent the link to 50 contacts and requested them to forward the link to their friends. Assuming each contact sent the link to 4 of their friends, the total number of adults that were notified of this link is approximately 200. With this figure, the researcher was able to calculate the response rate from the online survey. For the online survey, it would be difficult to identify who has participated since respondents’ name was not required when they submit the online questionnaires. Therefore, it is not possible for researcher to approach or follow up contacts that had not participated in the online survey.

Basically, there were four web pages for this online survey. The first page was the introduction section where the research objectives and purposes were presented. Visitors were required to read the introduction before proceeding to the questionnaire. This section also informed the visitors on total of questions they had to complete and their submission deadline of the survey. After deciding if they wanted to participate in this survey, respondents just had to click on the ‘Proceed to Questionnaire’ button to go to the next section. Figure 3.1 shows the web page.
Adult Perceptions on E-learning as a Method for Further Study

I am a postgraduate student in the Master in Information Technology program at University of Malaya. As part of my academic requirements, I am conducting a survey entitled "Adult Perceptions on E-learning as a Method for Further Study" for my dissertation.

The objective of this survey is to understand the perceptions, acceptance and expectations of Malaysian adults in E-learning education. The information provided by you is very important to this survey. With this understanding, educational institutions will be able to serve the adults who are looking for second-chance education more effectively. Your opinion would form the basis of constructive guidelines for developing E-learning education market in this country.

The survey consists of 3 sections with a total of 24 questions. Kindly complete the questionnaire and submit before 15th January 2004. Your support and cooperation in completing this questionnaire is greatly appreciated.

Thank you.

Yours sincerely,

Poh Yen

(NG POH YEN)

Figure 3.1 Online Survey Introduction Web Page

The second web page was Section A where respondents were filtered by two questions. For respondents who had heard of e-learning or planned for further study or both, they were directed to Section B after clicking the ‘Continue’ button. As for the respondents who answered ‘No’ for both questions, they were directed to Section C. This was because respondents that had not heard of e-learning and had no wish to further their study could not be a prospect in e-learning program, as they might not be able to give relevant and valid opinions on questions related to e-learning and further studies. Figure 3.2 shows Section A of the web page. Respondents could only choose one option and they could not continue to the next section without answering all the questions (including the open ended question) in Section A.
The third web page was Section B where respondents were required to answer 15 questions related to e-learning perceptions. Respondents were allowed to choose one option only and they had to answer all open-ended questions in order to submit the questionnaire. After completing Section B, respondents would click ‘Continue’ button at end of web page to proceed to Section C. Part of the web page for Section B is shown in Figure 3.3.
Instructions
Please click at the button to indicate your choice. You are allowed to choose one option only.

Section B: E-Learning Perceptions

1. Based on your previous learning experiences, which of the learning method is most appealing to you?
   - Traditional classroom lecture
   - On-job training
   - Correspondence course
   - Learning via the Internet
   - Others Please state:

2. How many years have you used a computer?
   - Less than a year
   - 1-3 years
   - 4-6 years
   - More than 6 years

3. Have you accessed to the Internet before?

Figure 3.3 Online Survey Section B Web Page

The final web page was Section C where respondents were required to fill in their personal particulars. There were 7 questions in this section and all questions had to be completed before submission. Figure 3.4 presents the Section C web page. After completing the questions, respondents clicked ‘Submit Questionnaire’ button.
At this time, the back end database, which was hosted at www.brinkster.com would post all the data submitted to the Microsoft Access database named e-learning.mdb created for this survey. If the data were submitted successfully, a dialog box shown in Figure 3.5 would be displayed.

Figure 3.5 Dialog Box for Submission of Survey
3.4.2 Printed Questionnaire

Though the online survey was carried out to collect data, questionnaires were also printed out to distribute to groups of people who could not access the Internet frequently. Most of the elderly who are retirees were surveyed using printed questionnaire. The questionnaires were given to them during their exercise hours in the park or during their service in the community centre. The translation of the questionnaires in Bahasa Malaysia and Mandarin were done verbally through a face-face interview based on the questionnaires.

For adults at work who do not like to access the Internet or waiting for an Internet connection to establish, a hardcopy questionnaire were also distributed to them. Many respondents preferred to use this method compared to online survey. According to this group of respondents, a hardcopy can remind them of an uncompleted questionnaire whereas there was no reminder of the online survey in case they could not complete it in one session. To ensure there would be enough completed questionnaire for analysis, 200 copies of questionnaire were distributed to different group of adults through snowball distribution method. Questionnaires were given to about 15 researcher’s contacts and each of them received 10-15 copies of questionnaire for distribution. Each of them was asked to further distribute the questionnaires. Distribution by hand was expected to have better response compared to online survey as researcher could follow up with respondents who had not returned the questionnaire.

3.5 Data Processing

The data collected were analysed using Statistical Package for Social Science Version 11.5. The analysed data were then synthesized and presented in tables, figures and narrative forms. In the event of missing data or invalid answers, the questionnaire
was considered void and not used in the analysis. This was to be consistent as the online survey could not be sent and was therefore considered unusable if there was even one question unanswered. Besides using percentages and frequencies to analyse data, basic statistics of mean, standard deviation, and cross tabulations are also calculated. To find out whether there is any difference of perception between different demographic characteristic, comparison between gender, age groups and educational level were analysed against the eight e-learning aspects tested. As for the open-ended questions, all answers were recorded and categorized according to the keywords used.

3.6 Summary

This chapter has presented the overall methodology used for this study. It presented the research design, described how the instruments were being developed and the process of identifying populations and samples. A further explanation of questionnaire distribution, data collected and research methodologies was also presented in this chapter.