E-LEARNING AT UNIMAS: STUDENTS' ACCEPTANCE OF MORPHEUS FOR TEACHING AND LEARNING

Ang Wei Sook

Bachelor of Science (Honours)
Cognitive Sciences
2011
E-LEARNING AT UNIMAS: STUDENTS' ACCEPTANCE OF MORPHEUS FOR TEACHING AND LEARNING

ANG WEI SOOK

This project is submitted in partial fulfilment of the requirements for a Bachelor of Science with Honours (Cognitive Science)

Faculty of Cognitive Sciences and Human Development
UNIVERSITI MALAYSIA SARAWAK
2011
The project entitled ‘e-Learning at UNIMAS: Students’ Acceptance of Morpheus for Teaching And Learning’ was prepared by Ang Wei Sook and submitted to the Faculty of Cognitive Sciences and Human Development in partial fulfillment of the requirements for a Bachelor of Science with Honours (Cognitive Science).
Statement of Originality

The work described in this Final Year Project, entitled “e-learning at UNIMAS: Students’ Acceptance of Morpheus for Teaching and Learning” is to the best of the author’s knowledge that of the author except where due reference is made.

10/05/2011
(Date submitted)

(ANG WEI SOOK)
20666
ACKNOWLEDGEMENT

With this opportunity, I would like to convey my sincere gratitude to the valuable contributions of several individuals who make this paper a success. This research paper would not be accomplished without their precious time and effort.

My deepest thanks to my project supervisor, Dr. Norazila bt Aziz for her continuous guidance, wonderful suggestions and endless encouragement throughout this project. I learned a lot from her throughout this course.

Secondly, I would like to dedicate this work to my family for their financial and moral support throughout this project and my study in UNIMAS.

To all deans, lecturers and staffs of every faculty in UNIMAS, I would like to convey my gratitude and appreciation to their cooperation and assistance which helped in my data collection.

Last but not least, I would like to express my gratefulness to all my friends who always support and help in this project.
TABLE OF CONTENTS

Acknowledgements v
Table of Contents vi
List of Tables viii
List of Figures ix
Abstrak x
Abstract xi

CHAPTER 1 – INTRODUCTION

1.0 Introduction 1
1.1 Background of Study 2
1.2 Problem Statement 4
1.3 Research Objective
  1.3.1 General Objective 7
  1.3.2 Specific Objectives 7
1.4 Conceptual Framework 8
1.5 Research Questions 9
1.6 Research Hypotheses 10
1.7 Significance of Study 10
1.8 Definition of Terms
  1.8.1 e-learning 12
  1.8.2 Morpheus 13
  1.8.3 Acceptance 14
  1.8.4 Academic Achievement 14
1.9 Limitation of Study 15
1.10 Summary 16

CHAPTER 2 – LITERATURE REVIEW

2.0 Introduction 17
2.1 Importance and Advantages of e-Learning 18
2.2 Theory of e-Learning
  2.2.1 Constructivism 20
  2.2.2 Connectivism 20
2.3 Criteria for Successful e-Learning 21
2.4 Technology Acceptance Model (TAM) 23
2.5 Students’ Acceptance towards e-Learning 24
2.6 Findings on the Differences between Demographic Factor and e-Learning
  2.6.1 Gender and intention of using e-learning 25
  2.6.2 Frequency of use of e-learning system 26
  2.6.3 Academic achievement and usage of e-learning 27
  2.6.4 Technology access location and usage of e-learning 28
2.7 Summary 29
CHAPTER 3 – METHODOLOGY

3.0 Introduction 30
3.1 Research Design 31
3.2 Research Location 31
3.3 Research Population 32
3.4 Sample and Sampling Procedure 33
3.5 Research Instrument 36
3.6 Procedure for Data Collection 37
3.7 Procedure for Data Analysis 37
3.8 Summary 40

CHAPTER 4 – FINDINGS AND DISCUSSION

4.0 Introduction 41
4.1 Descriptive Analysis of Demographic Information 43
4.2 Findings and Results 44
4.2.1 Students’ perceived usefulness of e-learning 44
4.2.2 Students’ perceived ease of use of e-learning 44
4.2.3 Hypothesis $H_1$ 46
4.2.4 Hypothesis $H_2$ 47
4.2.5 Hypothesis $H_3$ 48
4.2.6 Hypothesis $H_4$ 49
4.3 Discussion 51
4.4 Chapter Summary 53

CHAPTER 5 – METHODOLOGY

5.0 Introduction 54
5.1 Summary of the Study 55
5.2 Recommendation 57
5.3 Conclusion 57

REFERENCES 59
APPENDICES 65
LIST OF TABLES

Table 3.1
Table of the number of active Morpheus students in each faculty 33

Table 3.2
Table of the number of courses registered online, the number of courses actively using Morpheus and the percentage of the courses 35

Table 3.3
Summary of research questions, number of questions in questionnaire used to analyse research questions and data analysis 39

Table 4.1
Summary of Demographic Information 43

Table 4.2
Mean and standard deviation for students’ perceived ease of use 45

Table 4.3
Mean and standard deviation for students’ perceived usefulness 45

Table 4.4
Independent t-Test for gender 46

Table 4.5
Independent t-Test for frequency of usage 47

Table 4.6
One way ANOVA for academic achievement 48

Table 4.7
Independent t-Test for technology access location 49

Table 4.8
Summary of the findings 50
LIST OF FIGURES

Figure 1.1
Conceptual Framework 8

Figure 2.1
Theoretical Framework 24
ABSTRACT

The rapid growth of the e-learning market has drawn much discussion about the learners' acceptance of various e-learning systems. The acceptance of e-learning platform among UNIMAS students need to be determined so that instructors can have better understanding of students' perception. The objective of this research is to investigate UNIMAS students' acceptance towards the use of the e-learning system adopted by the university for teaching and learning. UNIMAS chose Moodle as Learning Management System (LMS) and started to implement since year 2006, named as Morpheus. In order to examine UNIMAS students' acceptance towards e-learning system, Technology Acceptance Model (TAM) is used in this research as the theoretical framework. The research design used was survey research which focuses on cross-sectional research. The respondents were the UNIMAS students from eight faculties who have been selected randomly according to actively using Morpheus courses in academic semester 2010/2011, semester 1. 120 questionnaires were distributed and there are 105 questionnaires with complete data were collected with respondents' demographic information, perceived ease of use, perceived usefulness and intention to use towards the e-learning system. The degree of students' acceptance is measured by computing the mean of perceived ease of use and the mean of perceived usefulness. The findings showed there are high perceived usefulness and high perceived ease of use towards usage of Morpheus at UNIMAS. Furthermore, findings also showed there is no significant difference in students' acceptance of the usage of Morpheus based on gender and technology access location. On the other hand, findings showed there is significant difference in students' acceptance based on frequency of usage and academic achievement. Future researches are recommended to investigate the challenges and barriers of e-learning at UNIMAS as well as comparing the acceptance of e-learning in UNIMAS with other universities.
ABSTRAK

e-pembelajaran di Unimas: Penerimaan Morpheus bagi Mahasiswa untuk Pengajaran dan Pembelajaran

Ang Wei Sook

CHAPTER 1
INTRODUCTION

1.0 Introduction

e-learning has become a popular term in education nowadays and is increasingly ubiquitous in higher educational institutions (HEIs) (Masrom, 2007). A recent trend in higher education has been to set up e-learning systems to provide students with online access and learning content (Park, 2009). e-learning initiatives in Malaysia are mainly undertaken by universities, colleges and business enterprise (Anuwar Ali, 2004). Many educational institutions have also developed ICT and e-
of universities adopting e-learning to enhance the effectiveness of the curriculum delivery is increasing. E-learning is a complex platform which results in a guided learning process according to the demand of the market and the learners. E-learning has changed the nature of knowledge, enabling lifelong learning and autonomous learning (Tick, 2006). However, the fundamental processes of human learning is still the same where students still need to actively engage with the learning materials, and they still have to find ways to express their understanding after learning have taken place (Stephenson, 2001).

The implementation of e-learning practice found in higher educational institutions is Learning Management System (LMS). The LMS is designed to deliver teaching programmes by providing shells to fill with course content and offer various types of course delivery methods (Gardner & Holmes, 2006). There are three types of LMS, which are commercial, proprietary and open source. LMS that are used in the higher education environment includes WebCT, Blackboard, LearningSpace, eCollege, and Moodle (Morgan, 2003). WebCT and eCollege are proprietary, Blackboard is commercial while Moodle is open source of LMS.

There are a lot of higher education in Malaysia including Universiti Malaysia Sabah (UMS), Universiti Sains Malaysia (USM), Universiti Teknologi Malaysia (UTM) as well as Universiti Malaysia Sarawak (UNIMAS) adopt Moodle as LMS due to the advantages of Moodle. Moodle is an open source which is free of charge which can be customized easily, support large user community and is allowing for
reflection, intellectual development and social interaction (Universiti Malaya, 2008). It is a free web application that educators can use to create effective online learning sites.

The rapid growth of the e-learning market has drawn much discussion about the learners’ acceptance of various e-learning systems (Liu, Liao & Peng, 2005). Learners need to make good use of e-learning in order to benefit from it. There are many ways to access learners’ acceptance and one of the ways to understand the acceptance is by investigating learners’ perceptions toward the usefulness and the ease of use of the LMS used. With the data gained from learners’ perception, e-learning can therefore designed to meet learners’ requirements.

Technology acceptance model (TAM) is used in this study as it has been proven to be a theoretical model that help explain and predict users’ system acceptance behavior after a period of interaction with the system (Park, 2009). Thus, TAM is suitable to be used as a guide to examine the acceptance of students towards e-learning system as their learning platform.

1.2 Problem Statements

Every student in UNIMAS has an account in Morpheus and their use of Morpheus as their e-learning platform depends on their instructor’s decision whether to implement it or not. Morpheus has been implemented since 2006 (Chen, 2009) yet
the question of how well learners accept e-learning as a learning medium has not been well-researched. Students who had high level of acceptance indicated that the e-learning was convenient and flexible for them (Lim, Hong & Tan, 2008). Hong, Lai & Holton (2003) investigated a web-based course at Universiti Malaysia Sarawak and reported that more than half of their respondents had high level of acceptance with the web-based course. The effectiveness and usefulness of the usage of Morpheus should be examined since Morpheus ought to be an efficient platform to enhance students' learning due to the advantages of e-learning.

According to Romanov & Nevgi, 2008, merely offering lecture notes and learning materials for a course are not sufficient for students. Poon, Low and Yong (2004) studied web-based learning environments at several local universities in Malaysia and reported that their respondents were not fully comfortable with e-learning. Thus, questions regarding the usage of Morpheus at UNIMAS would provide insight on whether students feel comfortable with the usage of Morpheus or whether Morpheus does contribute to students' learning process. The design and the appearance of Morpheus plays an important role in affecting students' perception towards e-learning platform, and, this indirectly affect the frequency of usage of Morpheus among UNIMAS students. This is because if students feel comfortable in using Morpheus, students will highly engage in it. By knowing students' intentions as well as understanding the factors that influence students' beliefs about e-learning, educators can create mechanisms for attracting more students to adopt this learning environment (Grandon, Alshare, & Kwan, 2005).
1.3 Research Objectives

The research objective was divided into two parts, which are general objective and specific objectives.

1.3.1 General objective:

To investigate UNIMAS students’ acceptance towards the use of e-learning system adopted by the university for teaching and learning.

1.3.2 Specific objectives:

1. To examine UNIMAS students’ perceived ease of use of the e-learning system adopted by the university for teaching and learning.

2. To examine UNIMAS students’ perceived usefulness of the e-learning system adopted by the university for teaching and learning.

3. To examine whether there are differences in UNIMAS students’ acceptance towards the use of the e-learning system adopted by the university based on gender.

4. To examine whether there are differences in UNIMAS students’ acceptance towards the use of the e-learning system adopted by the university based on frequency of usage of the system.
5. To examine whether there are differences in UNIMAS students' acceptance towards the use of the e-learning system adopted by the university based on academic achievement.

6. To examine whether there are differences in UNIMAS students' acceptance towards the use of the e-learning system adopted by the university based on technology access location.

1.4 Conceptual Framework

The technology acceptance model which serves as the theoretical framework used to investigate UNIMAS students' acceptance towards e-learning at UNIMAS,

Figure 1.1: The conceptual framework is discussed based on the Technology Acceptance Model (TAM)

The technology acceptance model which serves as the theoretical framework used to investigate UNIMAS students' acceptance towards e-learning at UNIMAS,
Morpheus. Each learner has individually perception due to individual experiences and learning. The learners’ demographic factors including gender, frequency of e-learning usage, academic achievement and technology access location are the important factors to determine the acceptance of e-learning. Hence, the acceptance of e-learning is investigated based on the learners’ demographic factors. In this study, the independent variables are gender, frequency of usage, academic achievement and technology location whereas perceived usefulness and perceived ease of use are the dependent variables.

1.5 Research Questions

RQ1: What is the UNIMAS students’ perceived ease of use of the e-learning system adopted by the university for teaching and learning?

RQ2: What is the UNIMAS students’ perceived usefulness of the e-learning system adopted by the university for teaching and learning?

RQ3: What is the difference in UNIMAS students’ acceptance towards the use of the e-learning system adopted by the university based on gender?

RQ4: Is there difference in UNIMAS students’ acceptance towards the use of the e-learning system adopted by the university based on frequency of usage of the system?

RQ5: Is there difference in UNIMAS students’ acceptance towards the use of the e-learning system adopted by the university based on academic achievement?
RQ6: Is there a difference in UNIMAS students’ acceptance towards the use of the e-learning system adopted by the university based on technology access location?

1.6 Research Hypotheses

\( H_0 \) 1.1: There is no significant difference in UNIMAS students’ acceptance of the usage of Morpheus based on gender.

\( H_0 \) 1.2: There is no significant difference in UNIMAS students’ acceptance of the usage of Morpheus based on frequency of usage.

\( H_0 \) 1.3: There is no significant difference in UNIMAS students’ acceptance of the usage of Morpheus based on academic achievement.

\( H_0 \) 1.4: There is no significant difference in UNIMAS students’ acceptance of the usage of Morpheus based on technology access location.

1.7 Significance of Study

This study focused on e-learning at UNIMAS. This study helps to identify the effectiveness and usefulness of e-learning at UNIMAS from the learner’s viewpoint. From this study, educators can be aware of the shortcomings of Morpheus and take immediate actions to improve so that e-learning can further benefit UNIMAS.
students. This study creates awareness about the challenges of students when they are accessing Morpheus. All of the challenges have to be overcome and improved so that the efficiency of e-learning at UNIMAS can be increased in the shortest time and students will feel more comfortable in using Morpheus.

Students’ perception towards e-learning platform at UNIMAS should be identified to investigate whether students familiar with Morpheus and find out whether e-learning at UNIMAS is useful for UNIMAS students. The ease of use of Morpheus is also important to identify whether technology access locations are needed for students to fully engage in the usage of Morpheus. The perception of students towards the usage of Morpheus is important for lectures to further improve Morpheus so that the implementation of Morpheus can meet students’ needs. Lectures can improve and implement features, design and materials of course which are more comfortable according to students’ preference based on the feedback given by UNIMAS students after carrying out this study.

Furthermore, gender differences in using Morpheus are to be identified to know whether different genders would have different attitude towards e-learning. This study identifies whether actively participating in Morpheus activities would boost academic achievement. Students are strongly encouraged to engage in Morpheus activities which related to their taken courses if e-learning platform does help in their studies. Besides, it is important to identify whether the usage of Morpheus can directly or indirectly increase the interaction between lectures and
students. As a result, this study is important to carry out so that it can benefit UNIMAS students and help in Morpheus design.

1.8 Definition of Terms

In this section, conceptual and operational definitions of e-learning, Morpheus, acceptance, academic achievement are discussed.

1.8.1 e-learning

e-learning comes from the word electronic learning. It is first called as Internet based training and Web-based training (Webopedia, 2010). Web-based learning (WBL) which is also known as e-learning, refers to Internet technologies used to deliver knowledge that enhance the instructional process (Low, Poon & Yong, 2004). Moreover, E-learning is also referred to the web-based courses, computer-mediated communications and multimedia enhanced delivery medium and it has the potential to make the learning process active (Lim, Hong & Tan, 2008). Learning takes place when learner is acquiring knowledge and skills and able to apply it when they need to solve problems.

Koohang and Harman (2005) stated that “e-learning is the delivery of education of all activities relevant to instructing, teaching, and learning through various electronic media” while Stockley (2003) defined e-learning as “the delivery
of the learning, training or educational program by electronic means by using computer or electronic device to provide training, educational or learning material”.

On the other word, e-learning is another way of transferring or delivering knowledge by teaching and learning process regardless of distance with the use of electronic devices. The real value of e-learning lies not only to train anyone at anywhere and anytime but also to train the right people to get the right skills and knowledge at the right time (Govindasamy, 2002).

In this study, e-learning refers to the LMS of Moodle used by UNIMAS named Morpheus. Students can access e-learning platform at UNIMAS anywhere and anytime whenever there is internet connection available. UNIMAS had started implementing e-learning since 2006. The major aim is to assist in courses delivery.

1.8.2 Morpheus

Morpheus is the official online learning system of UNIMAS which consists of many features and activities designed to promote collaborative and student-centered learning (Centre for Applied Learning and Multimedia, 2010). Morpheus provides full authority to lecturers in order to enhance students’ learning experience by managing and conducting online activities.

In this research, Morpheus refers to the e-learning platform used at UNIMAS which connect lectures and students outside the lecture halls. Morpheus provides an
alternative to lecturers so that they can manage and conduct online activities which would enhance students' learning experience. Students often get study materials via Morpheus. Study material may include lecture notes, tutorial questions, assignments, questions, provide links to other websites. Every student at UNIMAS has a Morpheus account and they register for the courses that they take in a particular semester.

1.8.3 Acceptance

Students' acceptance can be defined as "the demonstrable willingness within a user group to employ information technology for the tasks it is designed to support" (Dillon & Morris, 1996, p. 5). This will also contribute to high usage of students in e-learning since they are comfortable with the application and usage e-learning.

In this study, acceptance refers to the degree of students' acceptance and usefulness of Morpheus adopted by UNIMAS. Students tend to use and engage in Morpheus when they found Morpheus is useful and easy to use.

1.8.4 Academic achievement

There are different indicators of academic achievement, ranging from global indicators, such as post-secondary attainment and school GPA, to some specific indicators, such as standardized test scores in a specific academic area for example Mathematics, and even to variables as students' academic aspiration and students'
academic self-concept (Fan & Chen, 2001). Academic achievement is the academic result which students attained in their studies. It is the level of measurement in studies which measured by personal effort and abilities.

In this research, academic achievement is measured in the form of Cumulative Grades Point Average (CGPA). The pointer of CGPA is directly proportional to the result of students. This means that the higher the pointer of CGPA, the better the result of the students. The highest pointer is 4.00 and this means that a particular student scores A in subject which he or she takes.

1.9 Limitation of Study

This study only can be generalized at UNIMAS. The e-learning platform which is used at UNIMAS is not the same with other higher educational institutions. Thus, the perception, ease of use, usefulness and attitude of e-learning platform will be different. This study is not evaluating Morpheus but to examine students' perception and hence examining the usefulness and ease of use of Morpheus based on the courses offered by UNIMAS according to faculty.