

**INTERACTION DESIGN IN E-LEARNING USING
KANSEI ENGINEERING**

BY

PURA ANAK SIPOK

**BACHELOR OF SCIENCE (HONS) INFORMATION
TECHNOLOGY**

**THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENT FOR THE DEGREE OF
BACHELOR OF SCIENCE**

**FACULTY OF SCIENCE COMPUTER AND
MATHEMATICS**

UNIVERSITI TEKNOLOGI MARA

JANUARY 2012

ACKNOWLEDGEMENT

First of all, I would like to praise and show my sincere gratitude to God for His blessings and His guidance to help me to complete my thesis on time. Without His blessings and His mercy, this thesis would not have been completed.

I would like to express my utmost appreciation to my supervisor Dr. Anitawati Mohd Lokman and Pn. Fauziah Redzuan for their motivation, guidance and genuinely assist me throughout the process of completing this thesis. I am so grateful for their determination in providing me with constant guidance, remarkable ideas and supports, encouragements and value advices throughout completing this thesis.

I would like to give my biggest appreciation to my coordinator Pn. Jamaliah Taslim for sharing her intellectual inspiration, constructive criticism and guidance in conducting this thesis.

Besides that, I would like to show my unconditionally love to my parents, for giving me their devotion, love, patients, supports and in believing that I can do my best. Without their love and support, I would not have the courage to complete my thesis.

Last but not least, I would like to express my special thanks to all my lecturers and my fellow friends for sharing their ideas and to everyone who involved directly and indirectly in the completion of this thesis.

Thank You.

ABSTRACT

E-learning exploits interactive technologies and communication systems to improve the learning experience. It has the potential of transforming the way students learn. It can raise standards, and widen participation in lifelong learning. It has been discovered that emotion can affect the learning experience. However, understanding the emotional reaction of student in a complicated learning environment is challengeable task. The effect of interactivity on students learning still yields different result. There are still some who claimed there are the advantages of interactivity, while others claimed mixed results of interactivity. Therefore, it can be argued that there is still room for more research in this area. Especially in order to recognize which element of interactivity helps student learning, and which is not. Thus, this research aims to propose an interaction design for E-learning to make it more interactive and attractive to all students. Kansei Engineering method is used in this research, to achieve the solution to the problem. The method is used to analyze the relationships of students' emotional responses and interaction design elements in E-learning. The data analyze from Kansei Engineering method is use to propose a guide on interaction design of Kansei E-learning applications. The recommendation of interaction design for E-learning applications will contribute to the body of knowledge of E-learning specifically to the emotional design. Students' attention also can be capture by instigating emotional connectivity to the E-learning applications. A propose guide can help the designers to develop interactive and attractive courses.

Keywords: Interaction Design, E-learning, Kansei Engineering, User Experience, Design Element.

TABLE OF CONTENTS

APPROVAL FOR SUBMISSION.....	i
DECLARATION.....	ii
ACKNOWLEDGEMENT.....	iii
ABSTRACT.....	iv
TABLE OF CONTENTS.....	v
LIST OF FIGURES.....	vi
LIST OF TABLES.....	vii

CHAPTER 1: INTRODUCTION

1.1 Research Background.....	2
1.2 Problem Statement.....	2
1.3 Research Objectives.....	3
1.4 Scope of Research.....	3
1.5 Significance of Research.....	3
1.6 Thesis Organization.....	4

CHAPTER 2: LITERATURE REVIEW

2.1 Interaction Design.....	7
2.1.1 The Interaction Types in CMSs.....	8
2.2 E-learning.....	9
2.2.1 Categories of E-learning.....	10
2.2.2 Effective E-learning.....	10
2.2.3 Emotion and E-learning.....	12
2.3 Kansei Engineering.....	14
2.4 User Experience.....	16
2.5 Design Element.....	16

CHAPTER 3: RESEARCH APPROACH AND METHODOLOGY

3.1 Introduction to Kansei Engineering.....	18
3.1.1 Kansei Engineering Techniques.....	19

CHAPTER 1

INTRODUCTION

This chapter provides the overview of background and rationale for the research project. It also discusses about the research background, problem statement, research objective, research scope and research significant of proposed interaction design for E-learning to make it more interactive and attractive to all students.

1.1 Research Background

Nowadays, necessity for studying continuously has been increased and also learning has become a must in the present even. This tended to develop the distance learning systems that the learner can freely study without being caught in the restriction of time. The most popular sector of this distance learning is E-learning. E-learning commonly refers to teachings efforts propagated through the use of computer in an effort to impart knowledge in online environment. It has been discovered that emotion can affect the E-learning experience. In general, emotion has to do with how one feels. This feeling, if positive is believed to have a productive effect on individual. However, feelings of a negative nature seem too negatively on the individuals' learning experience. In the recent years, some researchers have investigated the impact of emotions in learning. At the same the research findings show the relatively between context and the learning process. Besides, the rapid development of information technology leads to extremely dynamic changes in various tools and technologies applied to the E-learning process. However, building computer devices or systems with the ability of responding to learner emotions is a challengeable task. Kansei Engineering, as a novel concept in the modern era of E-learning addresses the psychological feelings such as emotions, moods and impressions of the learner. The concept of Kansei is a branch of artificial intelligence that has a close relationship with designing of systems and devices which can recognize, interpret, and process human emotions. Previously, there were many research performed to support students and extend their potential in E-learning environment, but still a few have considered the emotional aspect in design of the