DEVELOPMENT AND VALIDATION
OF A MODEL OF TECHNOLOGY-
SUPPORTED LEARNING FOR
SPECIAL EDUCATIONAL NEEDS
LEARNERS IN MALAYSIAN
INSTITUTIONS OF HIGHER
LEARNING

ROSLINDA BINTI ALIAS

Thesis submitted in fulfillment
of the requirements for the degree of
Doctor of Philosophy

Faculty of Education

March 2016
AUTHOR’S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and the results of my own work, unless otherwise indicated or acknowledged as referenced work. This topic has not been submitted to any academic institution or non-academic institution for any degree or qualification.

I hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

Name of Student : Roslinda binti Alias
Student I.D. No : 2010281122
Programme : Doctor of Philosophy (Education)
Faculty : Education
Thesis Title : Development and Validation of a Model of Technology-Supported Learning for Special Educational Needs Learners in Malaysian Institutions of Higher Learning

Signature of Student :

Date : March 2016
This study is intended to develop and validate the Model of Technology-Supported Learning for Special Educational Needs (SEN) Learners in Malaysian institutions of higher learning (IHLs). This is due to the lack of technological-research based on the SEN learners particularly in IHLs in Malaysia. Utilizing the design and development research (DDR) approach, this study comprises three phases. The first phase of the study is the needs assessments and model development. Needs assessments were conducted among the eight public as well as 66 SEN learners from eight selected Malaysian IHL through interview as well as an adapted and validated questionnaire. Content analysis on the selected Malaysian IHLs’ websites was carried out for the initial foundation of the prototype for the Model. Information from needs assessments, content analysis and literature review was then used to develop an initial extensive prototype of the Model of Technology-Supported Learning for SEN Learners. The second phase of the study is the Model validation, involves a heterogeneous group of subject matter experts (SMEs). Eleven SMEs were involved in validating the Model through Delphi technique. After thorough revisions and recommendations by the SMEs, the final extensive version of the Model of Technology-Supported Learning for SEN Learners was developed which consists of six important elements that are: 1) Academic Affairs, 2) Student Affairs, 3) Library, 4) University Administration, 5) Community, Industrial Networking and Alumni, and 6) Special Department/Unit for SEN learners. The third phase of the study is the instantiation of the Model. For the purpose of instantiation, one of the elements in the Model i.e. ‘e-group’ was chosen to be exemplified. To instantiate the Model, two e-groups were created for SEN learners who were currently studying in Universiti Teknologi MARA (UiTM) and public. The usefulness of the technology for the SEN learners was observed. The overall findings of the needs assessments showed that SEN learners faced various challenges and barriers in IHLs and these including barriers in teaching and learning and challenges in dealing with the IHLs community. For the second phase of the study, the 11 SMEs reached a consensus on the Model in the round two of Delphi. This indicated that the Model is feasible to be implemented at the Malaysian IHLs. The findings of the third phase of the study proved that the technology supported SEN learners socially and emotionally. Through the support, SEN learners could sustain in their learning journey in IHL. It is thus recommended that the Model of Technology-Supported Learning for SEN Learners could be used as one of sources by the Malaysian IHLs authorities in their planning for the development and improvement of the existing educational system so that an inclusive environment could be established in IHLs.
My sincere gratitude goes to Prof. Dr. Nor Aziah Alias and Dr. Abu Bakar Ibrahim, who not only served as my main supervisor and co-supervisor respectively, but also share their expertise and comments in making this research more focused and well planned. I am also indebted to Universiti Teknologi MARA (UiTM) and the Ministry of Education for sponsoring my study under the Staff Scholarship Scheme and Skim Latihan Akademik Bumiputera (SLAB).

My deepest thanks also go to the Ministry of Education on their assistance and support in the research data collection. This includes all the officers involved directly and indirectly from Universiti Malaya (UM), Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), Universiti Malaysia Pahang (UMP), Universiti Teknologi Malaysia (UTM), Universiti Pendidikan Sultan Idris (UPS), Universiti Teknologi MARA (UiTM) and Universiti Islam Antarabangsa Malaysia (UIAM), without their help and assistance this research would not have been possible. And not forgetting all the Subject Matter Experts (SMEs) who were willing to share their time and expertise in validating and improving the Model of the research.

My deepest gratitude goes to my beloved husband and best friend Azwadi Mokhtar for his unconditional loves, strong support, relentless sacrifice and continuous understanding. I always remember the hardships and the happiness we went through together. To my good-natured sons Ahnaf al-Qais, Amru al-Qais and Akhtar al-Qais that have lightened up my life, my deep love and prayers will always be with all of you.

I am very grateful to my beloved parents’ in-law, Haji Mokhtar Ahmad and Hajjah Azizah Ishak, my brothers – Ahmad Zamri Alias, Ahmad Zakri Alias, Ahmad Zainurin Alias, Ahmad Zaidi Alias and Ahmad Zoolhelmi Alias; and all my in-laws who kept praying for my success. To my beloved aunty Badariah Zakaria and my beloved sisters Rosmawati Alias and Norhuda Ariffin, thanks for your support and encouragement. To my sisters and brother in-law Aida Mokhtar, Ahmad Uzair Mokhtar and Nadirah Mokhtar thank you very much on everything.

This acknowledgement is also to Prof. Dr. Rahmattullah Khan, who has always supported and encouraged me to be the best in all aspects of my life. Not forgetting, all of the lecturers and colleagues at the Faculty of Education thank you for your knowledge, guidance and support.

This thesis is also dedicated to my late father Alias bin Ali, my late mother Zainun Zakaria, my late eldest brother Ahmad Zaini Alias and my late aunts Zabedah Zakaria and Zalihah Zakaria who inspired me to chase rainbows and create one of my own (Al-Fatihah). Finally, this appreciation goes to all of my friends, especially Hasnah Wardati, Munira Jalil, Nuzha Mohd Taha, Sarizah Sulaiman, Paridah Mohd. Ali, Nurul Huda Wan Zahidi, Roslinda Abdul Wab and Mahadi Kamaludin who were always by my side during my ups and downs. I will always treasure our friendships.
TABLE OF CONTENTS

CONFIRMATION BY PANEL OF EXAMINERS ii
AUTHOR'S DECLARATION iii
ABSTRACT iv
ACKNOWLEDGEMENTS v
TABLE OF CONTENTS vi
LIST OF TABLES xi
LIST OF FIGURES xiv
LIST OF ABBREVIATIONS xvii

CHAPTER ONE: INTRODUCTION 20
1.1 INTRODUCTION 20
1.2 BACKGROUND OF THE STUDY 20
   1.2.1 Education in Malaysia 20
   1.2.2 Institutions of Higher Learning (IHLs) in Malaysia 22
   1.2.3 Persons with Disabilities in Malaysia 24
   1.2.4 Education for Persons with Disabilities in Malaysia 28
   1.2.5 Inclusive Education 32
   1.2.6 Inclusive Education in Malaysia 34
1.3 STATEMENT OF THE PROBLEM 34
1.4 RESEARCH OBJECTIVES 38
1.5 RESEARCH QUESTIONS 38
1.6 SIGNIFICANCE OF THE RESEARCH 39
   1.6.1 Theoretical Significance 39
   1.6.2 Practical Significance 40
1.7 LIMITATIONS 40
1.8 DELIMITATIONS 41
1.9 OPERATIONAL DEFINITIONS 42
   1.9.1 Learning 42