Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.
Perceptions of Educators Regarding the Acceptance of
Multi-User Virtual Environments
as an Educational Tool

Presented in fulfilment of the requirements
for the degree of Master of Business Studies
at Massey University
Wadduwage Vimani Eranda Udumalagala Gamage
Student Number: 04001443

Dr. Alexei Tretiakov, Dr. Barbara Crump
February, 2010
Abstract

The concept of Multi-User Virtual Environments (MUVEs) has opened new avenues in the educational spectrum. Despite its popularity as an educational environment tool, the successful implementation of a virtual classroom is heavily reliant on the educator. This research focuses on the perceptions of educators regarding the acceptance of the MUVE as an educational tool. The Technology Acceptance Model (TAM) was used to identify and evaluate the potential benefits of the MUVE in the domain of education. The qualitative approach was considered to be the suitable approach for this study. Semi-structured interviews were conducted with 22 educators; these interviews included the demonstration of a virtual class located in the Second Life Island known as Jokaydia. The collected data was transcribed using NVivo software, and analysed using constant comparison analysis. The transcribed interviews were provided to another researcher in order to obtain an independent analysis; this created the basis for triangulation of participants’ perceptions. A summary of this analysis was then sent to all participants to confirm its credibility. The conclusions of the study suggest that the combination of MUVEs’ features and strengths will eventually influence the educators to accept the MUVE as an educational tool, although several areas of concern are identified. Future growth in the educational uses of MUVEs is examined, the implications and limitations of the study are discussed, and ideas for future research are elaborated on.

Keywords: MUVE, Second Life, education, TAM, ease of use, subjective norm, enjoyment, facilities, compatibility, security and trust, collaboration, awareness, media richness, discovery learning, situated learning, role playing, controlled environment, immersiveness.
Acknowledgements

My personal thanks go to my supervisors Dr. Alexei Tretiakov and Dr. Barbara Crump for their valuable guidance throughout this project.

I would like to express my gratitude to the 22 individuals who gave of their time to participate in my research interviews, and were so open and friendly to me as they shared their own experiences in the educational world.

My appreciation is also extended to Jokay Wollongong for friendly assistance and arranging a place in Jokaydia to build the virtual class.

Last but not least, I record special thanks to my husband, Rohitha, for his constant support throughout the study, and to my son, Dulan, for his patience and understanding.
# TABLE OF CONTENTS

CHAPTER ONE - Introduction ........................................................................................................ 9
Purpose ........................................................................................................................................ 11
Research Overview .................................................................................................................... 12
Significance .................................................................................................................................. 12
Thesis structure .......................................................................................................................... 13

CHAPTER TWO - Literature Review ............................................................................................ 15
Second Life as a Representative of MUVE ................................................................................. 15
Technology Acceptance Model ..................................................................................................... 16

Ease of Use .................................................................................................................................. 17
Subjective Norm ............................................................................................................................ 19
Enjoyment ..................................................................................................................................... 20
Facilitating Conditions ................................................................................................................ 21
Compatibility ................................................................................................................................ 24
Security and Trust ......................................................................................................................... 26
Educational Benefits ....................................................................................................................... 28

Collaboration ............................................................................................................................... 29
Awareness ..................................................................................................................................... 30
Media Richness ............................................................................................................................. 31
Discovery Learning ....................................................................................................................... 32
Role Projection .............................................................................................................................. 33
Situated Learning ........................................................................................................................... 36
Immersive Environment ............................................................................................................... 37
Controlled Environment .............................................................................................................. 38
Summary ....................................................................................................................................... 39

CHAPTER THREE - Research Design ......................................................................................... 41
Qualitative Approach ..................................................................................................................... 42
Interviews and the Demonstrated Virtual Class ........................................................................... 43

Schedule of Questions .................................................................................................................. 44
Sample Selection and Description ................................................................................................. 48
Data Collection Process ............................................................................................................... 53
Data Analysis ................................................................................................................................. 54
Validation ....................................................................................................................................... 56
LIST OF IMAGES AND FIGURES

Image 1 - Avatar in Second Life, Jokaydia Island ................................................................. 33
Image 2 - Entrance to the Virtual Class ................................................................................ 63
Image 3 - Billboards displayed in the Virtual Class to provide navigational support .......... 64
Image 4 - Laptops and YouTube Video presentation ............................................................. 65
Image 5 - Presentation Screen ............................................................................................ 66
Image 6 - Educator and student avatars in the Virtual Class ................................................ 67
Image 7 - Diagrams used in the Virtual Class ................................................................. 68
Image 8 - Tool that contains Twitter facilities ................................................................... 69
Image 9 - The Presentation slides and assignment details for students ......................... 69
Image 10 - Student avatar submitting an assignment using the tool ................................. 70
Image 11 - Discussion area for student avatars ................................................................. 71
Image 12 - MOODLE in the Jokaydia server ..................................................................... 72
Image 13 - SLOODLE integration tools in the Virtual Class ............................................. 72
Image 14 - Student avatar accessing checker .................................................................... 73
Image 15 - Student avatar entering into the Virtual Class .................................................. 74
Image 16 - The Login Zone in the Virtual Class .................................................................. 74
Image 17 - Student avatar attempts to enrol in a course using SLOODLE ...................... 75
Image 18 - Student avatar engaged in a quiz ..................................................................... 76
Image 19 - Student avatar sending an assignment to MOODLE ....................................... 76
Image 20 - Educator avatar viewing the SLOODLE presenter ........................................ 77
Image 21 - Virtual Classroom 2 layout ............................................................................. 78
Image 22 - The slide presentation in the Virtual Classroom 2 .......................................... 78
Figure 1 - The structure of the analysis outcomes ............................................................. 83
LIST OF TABLES

Table 1 - Educators in Second Life.................................................................170
Table 2 - Details of educators who participated in the research.........................50
Table 3 - Experiences with Educational Tools, Video Games and MUVE...............52
Table 4 - Summary of interview details.................................................................53
Table 5 - Independent Researcher's Analysis Part I ............................................174
Table 6 - Independent Researcher's Analysis Part II ...........................................175