CONCEPTUAL DESIGN OF REALITY LEARNING MEDIA (RLM) MODEL BASED ON ENTERTAINING AND FUN CONSTRUCTS

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By

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DECLARATION

I declare that this thesis is my own work and has not been submitted in any form for another degree or diploma at any other university or other institute of tertiary education. Information derived from the published and unpublished work of others have been acknowledged in the text and a list of references is given.

Ariffin Abdul Mutalib
15 April 2009

ABSTRACT

Many **e**Learning **m**aterials (**eLM**) have been developed for use in education and training. However, studies report that the investments on the courseware projects do not show good returns. Furthermore, the use and perception of teachers and students on eLM, such as courseware on CDs, are very low. In fact, many schools have stopped using courseware in the classrooms.

Many factors were identified influencing the disadvantages of courseware implementation in eLearning; nevertheless the way learning content in the eLM is blended and presented to learners is seen as one of the reasons. Existing eLM are found to be not entertaining and not invoking fun, making learners feel bored. In Interaction Design, although many guidelines have stated entertaining and fun as two important design elements, many developers still produced contents that failed to include these elements. One possible reason for this is the nature of fun and entertaining that are difficult to be realized without technical skills and creativity. This leads to the following research questions: (1) How to ensure that learning content is perceived entertaining and invoking fun by the end users?, (2) Can entertaining and fun learning material be effective?, and (3) How to enable instructors especially the non-technically-skilled to produce eLM that are considered entertaining and invoking fun?

Answering these questions leads this study to propose a conceptual design model of eLM which is able to ensure content is entertaining and invoking fun as perceived by the end users. Inspired by the famous reality TV shows, the proposed model is called Reality Learning Media (RLM). Therefore, the aim of the study is to propose a conceptual design model of RLM. To accomplish that, four specific objectives are formulated: (1) To determine the components of RLM, (2) To propose the conceptual design model of RLM, (3) To validate the conceptual design model of RLM through prototyping, and (4) To investigate user experience of RLM in terms of entertaining, fun, and effectiveness.

Comparative analysis, peer and expert reviews, content analysis, prototyping, and experimental studies are used to accomplish the objectives and aim. General findings show that RLM is perceived entertaining; in fact it is more entertaining than video and courseware. In addition, hypotheses-specific testings using one sample t-Test, independent samples t-Test, and ANOVA reveal that regardless of gender, academic achievement levels, and other eLM experience (before learning with RLM), respondents perceived RLM as entertaining and fun. Not only that, RLM is proven to be effective in delivering learning contents.

The main contributions of this study are the concept of reality video that has been put forward, the development of the conceptual design model together with the prototypes of the RLM. Apart from these, the recording techniques for RLM and the validated instrument measuring entertaining and fun are also significant contributions to the body of knowledge.

ABSTRAK

Pelbagai bahan pembelajaran elektronik (eLM) telah dibangunkan untuk kegunaan latihan dan pendidikan. Namun, banyak kajian melaporkan bahawa pelaburan terhadap projek-projek pembangunan koswer tidak menunjukkan hasil yang baik. Tambahan pula, penggunaan dan persepsi guru dan pelajar terhadap eLM, seperti koswer, adalah sangat rendah. Malah, kebanyakan sekolah tidak lagi menggunakan koswer dalam pembelajaran.

Beberapa faktor dikenalpasti mempengaruhi kelemahan penggunaan koswer dalam eLearning; termasuk cara bahan pembelajaran diolah dan dipersembah kepada pelajar. ELM yang sedia ada didapati tidak menghiburkan (*entertaining*) dan tidak membuatkan pelajar seronok (*fun*) sebaliknya menyebabkan pelajar menjadi bosan. Dalam Rekabentuk Interaksi (ID), walaupun kebanyakan garis panduan meletakkan *entertaining* dan *fun* di kalangan elemen rekabentuk yang penting, pembangun aplikasi dilihat gagal memuatkan elemen-elemen tersebut. Satu kemungkinan adalah sifat *entertaining* dan *fun* yang sukar dibentuk tanpa kreativiti dan kemahiran teknikal. Keadaan ini membawa kepada persoalan; (1) bagaimana memastikan kandungan pembelajaran *entertaining* dan *fun* dari sudut persepsi pengguna? (2) Bolehkah kandungan pembelajaran yang *entertaining* dan *fun* menjadi efektif? (3) Bagaimanakah cara membolehkan pengajar terutama yang tidak mempunyai kemahiran teknikal menghasilkan eLM yang *entertaining* dan *fun*?

Bagi mencari jawapan, kajian ini mengusulkan satu model rekabentuk konsep bagi eLM yang membolehkan kandungan dilihat *entertaining* dan *fun* dari sudut persepsi pengguna. Mendapat inspirasi dari rancangan TV realiti, model yang dicadangkan diberi nama *Reality Learning Media* (RLM). Maka, matlamat kajian ini adalah untuk mengusulkan model rekabentuk konsep bagi RLM. Untuk mencapai matlamat ini, empat objektif dibentuk iaitu untuk: (1) mengenalpasti komponen RLM, (2) mencadangkan model rekabentuk konsep bagi RLM, (3) mengesahkan model yang dicadangkan melalui pembangunan prototaip, dan (4) mengukur persepsi pengguna terhadap pengalaman menggunakan RLM dari segi *entertaining*, *fun*, dan keberkesanan.

Analisis perbandingan, penilaian oleh pakar dan rakan (*peer*), analisis kandungan, pembangunan prototaip, dan kajian bereksperimen digunakan bagi mencapai objektif. Dapatan umum melalui persepsi pelajar menunjukkan RLM adalah menghiburkan, malah lebih dari video dan koswer. Ujian hipotesis melalui *t-Test, Independent Sample t-Test*, dan ANOVA mendapati bagi sebarang jantina, tahap pencapaian akademik, pengalaman eLM selain RLM, RLM adalah *entertaining* dan *fun*. Lebih dari itu, RLM juga didapati menyampaikan kandungan pembelajaran dengan berkesan.

Sumbangan utama dari kajian ini termasuk konsep video realiti, pembangunan model rekabentuk konsep bagi RLM beserta prototaipnya. Selain itu, teknik merekod bagi penghasilan RLM dan instrumen penilaian aspek *entertaining* dan *fun* yang telah diujisahkan adalah sumbangan yang signifikan kepada bidang ilmu.

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Ariffin Abdul Mutalib

Universiti Utara Malaysia
15 April 2009

DEDICATION

In the name of Allah, The Most Beneficient, Most Merciful

Al-Fatehah

To my late father, Abdul Mutalib Hj. Arshad
To my late mother, Zawiyah Abu Bakar
To my family and friends, who believe in me…

Ariffin Abdul Mutalib

Universiti Utara Malaysia
15 April 2009

TABLE OF CONTENTS

Title	Page
Title Page	
Permission To Use	i
Declaration	ii
Abstract	iii
Abstrak	iv
Acknowledgement	v
Dedication	vi
Table of contents	vii
List of Figures	xii
List of Tables	xv
List of Abbreviations	xvii
CHAPTER 1: INTRODUCTION	
1.1 INTRODUCTION	1
1.2 MOTIVATION OF STUDY	2
1.3 PROBLEM STATEMENT	4
1.4 PROPOSED SOLUTION	12
1.5 OBJECTIVE	13
1.6 DEFINITION OF TERMINOLOGIES	14
1.6.1 eLearning Material (eLM)	14
1.6.2 Conceptual RLM Model	14
1.6.3 Conceptual Design Model of RLM	15
1.6.4 Content Analysis	15
1.6.5 Comparative Analysis	15
1.6.6 Expert	15
1.6 CONCEPTUAL FRAMEWORK	16
1.8 THEORETICAL FRAMEWORK	17
1.7 SCOPE	19
1.7.1 eLearning System	19
1.7.2 Respondents	20
1.8 CONTRIBUTION OF STUDY	20
1.8.1 The Concept of RLM	20
1.8.2 Conceptual Design Model of RLM	21
1.8.3 Prototype of RLM	21
1.8.4 Quick Video Recording Technique	22
1.8.5 Experience Instrument That Measures Fun and Entertaining	22
1.8.6 Test Results of The Prototypes	23
1.9 THESIS STRUCTURE	23
CHAPTER 2: REVIEWS ON RLM, CONCEPTS, AND THEORIES	
2.1 INTRODUCTION	25

2.2 LEARNING 25
2.2.1 Importance of Learning 27
2.3 ELECTRONIC LEARNING 28
2.3.1 Definition of eLearning 30
2.3.2 Dissimilarities Among eLearning, Online Learning, and Computer-based Learning 30
2.3.3 Components of eLearning 31
2.3.4 Implications of eLearning To The Study 32
2.4 ELECTRONIC LEARNING MATERIAL 33
2.4.1 Electronic Book 34
2.4.2 Interactive Multimedia 35
2.4.3 Courseware 38
2.4.4 Educational TV Programme 38
2.4.5 Implications of eLM To The Study 39
2.5 VIDEO-BASED LEARNING 39
2.5.1 Past Studies on VBL 40
2.5.2 Classifications of VBL 41
2.5.3 The Learners and The Instructors 43
2.5.4 Implications of VBL to The Study 43
2.6 REALITY VIDEO 44
2.6.1 Implications of Reality Video To The Study 47
2.7 ACTIVE LEARNING 47
2.7.1 Implications of Active Learning To The Study 49
2.8 SELF-PACED AND SELF-DIRECTED LEARNING 50
2.8.1 Formal And Informal Learning 51
2.8.2 Implications of Self-paced And Self-directed Learning To The Study 53
2.9 LEARNING THEORIES 54
2.9.1 Anchored Instruction 54
2.9.2 Aptitude Treatment Instruction 55
2.9.3 Cognitive Flexibility 56
2.9.4 Cognitive Load 57
2.9.5 Constructivist 58
2.9.6 Experiential 59
2.9.7 Minimalism 59
2.9.8 Multiple Intelligence 60
2.9.9 Situated Learning 61
2.9.10 Symbol System 62
2.9.11 Implications of Learning Theories To The Study 63
2.10 ENTERTAINING AND FUN 64
2.10.1 Task-focused 64
2.10.2 User-focused 65
2.10.3 Experience-focused 66
2.11 CONCLUSION 70

CHAPTER 3: RESEARCH METHODOLOGIES

3.1 INTRODUCTION 72
3.2 THE ELICITATIVE, INVESTIGATIVE, AND DEDUCTIVE APPROACH 74
3.2.1 Communication With Experts 75
3.2.2 Content Analysis 77
A. Models gathering 78
B. Comparative analysis of the models 78
C. Development of conceptual design model of RLM 78
D. Hypothesizing 80
3.3 THE ANALYTICAL, CONSTRUCTIVE, AND HYPOTHETICO APPROACH 81
3.3.1 Prototyping 81
A. Software lifecycle 82
B. ELearning systems methodologies 84
C. Video production methodologies 87
i) Multiple sources system 89
i) Quick video recording technique 90
3.3.2 Investigating User Experience 94
A. General issues of evaluation 95
B. Evaluation techniques for RLM 97
i) The instrument 98
ii) Measurement dimensions 99
iii) Effectiveness 100
iv) Sampling 101
C. Data collection 104
D. Data Analysis 107
3.4 CONCLUSION 107

CHAPTER 4: RLM CONCEPTUAL DESIGN MODEL

4.1 INTRODUCTION 109
4.1.1 ELM Selection 110
4.2 STRUCTURAL COMPONENTS 112
4.3 CONTENT COMPOSITION COMPONENTS 119
4.3.1 CCC Elaboration 128
4.4 THE PROCESS OF MAKING RLM 132
4.5 THE PROPOSED RLM MODEL 137
4.5.1 Conceptual Design Model of RLM 139
4.6 CONCLUSION 141

CHAPTER 5: PROTOTYPES DESIGN AND DEVELOPMENT

5.1 INTRODUCTION 143
5.2 THE PROTOTYPES 144
5.3 THE DEVELOPMENT OF RLM 146
5.3.1 Pre-production Phase 146
5.3.2 Production Phase 147

A. Applying QVRT 148
i) Video recorder 148
ii) Tripod 149
iii) Microphones 149
iv) Modes 150
5.3.3 Post-production Phase 151
5.3.4 The RLM 151
A. The opening section 151
B. The reality content section 153
i) Pedagogical aspects 154
ii) Human entity 163
C. The closing section 164
5.4 COURSEWARE DESIGN AND DEVELOPMENT 165
5.5 CONCLUSION 171

CHAPTER 6: USER EXPERIENCE AND EFFECTIVENESS

6.1 INTRODUCTION 173
6.2 TESTING THE EFFECTIVENESS 174
6.2.1 Results of Effectiveness Testing 175
6.3 PRE-USER EXPERIENCE TESTING 177
6.3.1 Evaluation Instrument 178
A. Elicitation works 179
B. Q-MEF 184
C. Q-MEF wellness and consistency 185
i) Pilot subjects 186
ii) Statistical procedures 186
iii) Results of validity test 187
iv) Results of Interitem consistency analysis 187
6.3.2 Evaluation Subjects 187
6.3.3 Factor Analysis 188
A. Entertaining dimension 189
B. Fun dimension 191
6.4 USER EXPERIENCE TESTING 192
6.4.1 Demographic Background 192
6.4.2 General Findings 194
6.4.3 Hypotheses Testing 197
A. Testing H_1 197
B. Testing H_2 204
C. Testing H_3 206
D. Testing H_4 207
E. Testing H_5 208
6.5 CONCLUSION 210

CHAPTER 7: CONCLUSION

7.1 INTRODUCTION 212
7.2 OVERALL DISCUSSION AND HYPOTHESES TESTINGS 213
7.2.1 Summary of Findings 214
7.2.2 How To Make Use of RLM In HLI 217
7.3 CONTRIBUTIONS 218
7.4 LIMITATIONS AND RECOMMENDATIONS 219
7.4.1 RLM 220
7.4.2 Perceptions 222
7.4.3 Research Participants and Culture 222
7.4.4 Relations to Computer Games and Commercial Systems 223
7.5 CONCLUSION 223

REFERENCES 225

APPENDIX A 246
APPENDIX B 247
APPENDIX C 248
APPENDIX D 249
APPENDIX E 250
APPENDIX F 254
APPENDIX G 259
APPENDIX H 261
APPENDIX I 263
APPENDIX J 285
APPENDIX K 288
APPENDIX L 290
APPENDIX M 291
APPENDIX N 292
APPENDIX O 293
APPENDIX P 294

LIST OF FIGURES

Figure	Page
Figure 1.1: List of asked questions.	5
Figure 1.2: Distribution of reality and non-reality TV	8
Figure 1.3: Architecture design for EchoSystem	11
Figure 1.4: Echo360 – default interface	12
Figure 1.5: Research conceptual framework	16
Figure 1.6: Theoretical framework	18
Figure 1.7: Processes involved in this study	19
Figure 1.8: Flow of contributions of the study with relationships	23
Figure 2.1: Lennox's classification of eLearning components	32
Figure 2.2: eLearning components proposed by Colace et al.	32
Figure 2.3: Transcending Skinner and Taylor	54
Figure 2.4: Conceptual framework of components of a computer system	64
Figure 2.5: Synonyms for entertaining and fun	68
Figure 2.6: Criteria for entertaining	69
Figure 2.7: Criteria for fun	70
Figure 2.8: Summary of related literature	71
Figure 3.1: Basis of methodology	73
Figure 3.2: Relationships among approaches and activities	76
Figure 3.3: Star lifecycle	84
Figure 3.4: Division of areas in MSS (*source: Clendenin (1998) p246*)	89
Figure 3.5: The Quick Video Recording Technique (QVRT)	91
Figure 3.6: Different roles of actor; (i) actor as instructor, (ii) actor as learner	92
Figure 3.7: Approaches of evaluation	95
Figure 3.8: Classifications of educational software education categories	97
Figure 3.9: Design of the instrument	101
Figure 3.10: Flow of the experiment.	106
Figure 4.1: User interface of the selected courseware	114
Figure 4.2: Categories of components	117
Figure 4.3: Conditions for classification	117
Figure 4.4: Model for structural components of RLM	118
Figure 4.5: Model for content composition components of RLM	129
Figure 4.6: Model for the process of producing RLM	136
Figure 4.7: Proposed RLM model	138
Figure 4.8: Conceptual design model of RLM in relation to RLM model	140
Figure 4.9: Proposed conceptual design model of RLM	141
Figure 5.1: Preparing and setting-up props	147
Figure 5.2: Video recorder	148
Figure 5.3: Digital tape	148
Figure 5.4: Samples of shots with use of tripod	149
Figure 5.5: Samples of shots without use of tripod	149
Figure 5.6: Zooming and focusing	150
Figure 5.7: The prototypes on CD	151
Figure 5.8: Title element	152

Figure 5.9: The actor addressing the verso element 152
Figure 5.10: Course 2 lists the developing team after the content 153
Figure 5.11: DVD-like audio/video control 154
Figure 5.12: Combination of text and graphic 155
Figure 5.13: Real objects 155
Figure 5.14: Actor lecturing to the audience 156
Figure 5.15: Instruction-based style 157
Figure 5.16: Demonstration style 158
Figure 5.17: Briefing and objective 159
Figure 5.18: Planned content 160
Figure 5.19: Mistakes in speech; causing laughter 161
Figure 5.20: Mistakes in action; causing repetition of step 161
Figure 5.21: Slide-based separator 163
Figure 5.22: Debriefing slots 164
Figure 5.23: Thanking remark 165
Figure 5.24: IntView v1 framework 167
Figure 5.25: Title page 169
Figure 5.26: Table of content 170
Figure 5.27: Typical layout 170
Figure 5.28: Page with picture and text 171
Figure 5.29: Video demonstrating the explanation 171
Figure 6.1: Two divisions of subjects 173
Figure 6.2: Summary of instrument development 179
Figure 6.3: Summary of elicitation works 180
Figure 6.4: Items in the Q-MEF Instrument 184
Figure 6.5: Results of KMO and Bartlett's tests – entertaining 189
Figure 6.6: Results of rotated component matrix – entertaining 190
Figure 6.7: Component suggested after two items removed 190
Figure 6.8: Results of KMO and Bartlett's tests – fun 191
Figure 6.9: Results of component matrix test – fun 192
Figure 6.10: Gender 193
Figure 6.11: Academic achievement 193
Figure 6.12: Fair distribution of academic achievement over gender 193
Figure 6.13: Graph and statistics showing subjects will use RLM again next time 195
Figure 6.14: Graph and statistics showing learners prefer to use RLM more than courseware and video 196
Figure 6.15: Graph and statistics showing RLM caters appropriate content satisfactorily 197
Figure 6.16: Graph showing RLM was entertaining 198
Figure 6.17: Mean and standard deviation for each item 199
Figure 6.18: Cumulative mean – mean obtained from all observed means 199
Figure 6.19: Graph showing RLM was fun 199
Figure 6.20: Means and standard deviation on fun 200
Figure 6.21: Means for entertaining aspect is significantly different between RLM and video 201
Figure 6.22: Graph showing RLM is more entertaining than video 201

Figure 6.23: Means for fun aspect is significantly different between RLM and video 202
Figure 6.24: Graph showing RLM makes more fun than video 202
Figure 6.25: Graph showing RLM is more entertaining than courseware 203
Figure 6.26: Means for entertaining aspect is significantly different between RLM and courseware 203
Figure 6.27: Means for fun aspect is significantly different between RLM and courseware 204
Figure 6.28: Graph showing RLM makes more fun than courseware 204
Figure 6.29: Descriptive statistics for RLM (entertaining) in different groups (i.e. subjects learning using video and courseware) 205
Figure 6.30: t-Test results for entertaining aspects of RLM between different groups 205
Figure 6.31: Descriptive statistics for RLM (fun) in different groups (i.e. subjects learning using video and courseware) 206
Figure 6.32: t-Test results for fun aspects of RLM between different groups 207
Figure 6.33: Descriptive statistics for mean-RLM-entertaining and subjects' gender 207
Figure 6.34: ANOVA results for mean-RLM-entertaining and subjects' gender 208
Figure 6.35: Descriptive statistics for mean-RLM-fun and subjects' gender 208
Figure 6.36: ANOVA results for mean-RLM-fun and subjects' gender 208
Figure 6.37: Descriptive statistics for mean-RLM-entertaining and subjects' academic achievement 209
Figure 6.38: ANOVA results for mean-RLM-entertaining and subjects' academic achievement 209
Figure 6.39: Descriptive statistics for mean-RLM-fun and subjects' academic achievement 209
Figure 6.40: ANOVA results for mean-RLM-fun and subjects' academic achievement 210
Figure 7.1: Non-technical-skill participants are able to create RLM 217

LIST OF TABLES

Table	Page
Table 1.1: Respondents' opinion on the existing eLMs	5
Table 1.2: Subjective feedback	7
Table 2.1: Relationships of learning methods and their rates of understanding.	35
Table 2.2: Levels of interactivity	37
Table 2.3: Videotypes: different category of VBL	41
Table 2.4: Categories of RTS	45
Table 2.5: Attributes of formal and informal learning	52
Table 3.1: Classification of lifecycle models	82
Table 3.2: Video production techniques	87
Table 3.3: Techniques of evaluation for each evaluation approach	95
Table 3.4: Characteristics of entertaining	99
Table 3.5: Summary of the procedure, apparatus, and techniques of the experiment.	105
Table 4.1: Justification for selecting eLM	111
Table 4.2 Structural components of courseware	115
Table 4.3 Structural components of video	116
Table 4.4 Structural components of ETP	116
Table 4.5: Summary of structural components of eLM	117
Table 4.6: Proposed structural components of RLM	118
Table 4.7: Content composition components for courseware	123
Table 4.8: Content composition components for video	123
Table 4.9: Content composition components for ETP	124
Table 4.10: Summary of content composition components of eLMs	125
Table 4.11: RLM content composition components based on the analyzed eLMs	125
Table 4.12: Proposed RLM content composition components	127
Table 4.13: Video aspects involved in making RLM	133
Table 5.1: Descriptions of the prototypes	145
Table 5.2: Contents for each title	146
Table 5.3: Summary of the activities involved and output obtained of each stage through the IntView v1 framework	167
Table 6.1: Scores in pre-test and post-test	175
Table 6.2: Means for pre-tests and post-tests	176
Table 6.3: Score difference (post-test minus pre-test)	177
Table 6.4: Detail of measurement items with authors and frequencies	180
Table 6.5: Criteria for entertaining and fun	182
Table 6.6: Groups for characteristics for entertaining	182
Table 6.7: Groups for characteristics for fun	182
Table 6.8: Summary of characteristics of entertaining and fun in studies listed in Table 6.5	183
Table 6.9: Reliability Statistics for entertaining	188
Table 6.10: Reliability Statistics for fun	188
Table 6.11: Results of MSA – entertaining	189

Table 6.12: Results of MSA – fun 191

LIST OF ABBREVIATIONS

Abbreviation	Complete Terminology
ACHA	Analytical, Constructive, and Hypothetico Approach
AICC	Aviation Industry CBT Committee
ANOVA	One Way Analysis of Variance
API	Application Protocol Interface
ATI	Aptitude Treatment Instruction
BTP, KPM	Bahagian Teknologi Pendidikan, Kementerian Pelajaran Malaysia
CAI	Computer-Aided Instruction
CAL	Computer Assisted Learning
CBL	Computer-Based Learning
CBT	Computer-Based Training
CCC	Content Composition Components
CD	Compact Disc
CE	Courseware Engineering
CGPA	Cumulative Grade Point Average
CTGV	Cognition and Technology Group at Vanderbilt
DVD	Digital Video Disc
eBook	Electronic Book
EIDA	Elicitative, Investigative, and Deductive Approach
eLM	Electronic Learning Materials
EPEES	Ensure, Provide, Engage, Establish, Strengthen
ETP	Educational TV Programme
Fh IESE	Fraunhofer Institute of Experimental Software Engineering
HCI	Human-Computer Interaction
HLI	Higher Learning Institution
IADIS	International Association for Development of the Information Society
ICT	Information and Communication Technology
ID	Interaction Design
IMM	Interactive Multimedia
ISO	International Organization for Standardization
JAD	Joint Application Development
KMO	Kaiser-Meyer-Olkin
LCMS	Learning Content Management System
LMS	Learning Management System
LO	Learning Object
MSA	Measure of Sampling Adequacy
MSS	Multiple Sources System
OUM	Open University of Malaysia
PC	Personal Computer
Q-MEF	Questionnaire for Measuring Entertaining and Fun
QUIS	Questionnaire for User Interaction Satisfaction
QVRT	Quick Video Recording Technique
RAD	Rapid Application Development

RLM	Reality Learning Media
RSS	Really Simple Syndication
RTS	Reality TV Shows
SC	Structural Components
SCORM	Sharable Courseware Object Reference Model
SE	Software Engineering
SUMI	Software Usability Measurement Inventory
SUS	System Usability Scale
TAM	Technology Acceptance Model
UNITAR	Universiti Tun Abdul Razak
VBL	Video-Based Learning
VC	Virtual Classroom
VCD	Video Compact Disc
XML	Extensible Markup Language

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Learning is a common process for everybody. Naturally from birth, a person will start to learn, and the learning process will mature together with the cognitive and physical development. As the learning processes mature, the kind of learning methods including formal and informal change and blend, to equip the person with more and more new knowledge. Learning processes and techniques evolve to align with chronicle factors. In this 21st century, learning is closely associated with technology.

Beginning with analog learning method, technology advancement has led to more sophisticated digital learning environments. Benefits of digital technologies can be seen in terms of content diversity; more media can be used more widely including text, graphics, animation, audio, video, and interactivity (Chapman & Chapman, 2000). This gives many impacts to the field of education where teaching and learning are involved. Accordingly, many academics have been carrying out research to investigate how learning and its facilitation can be more effective.

This scenario has given better opportunities for communities to learn. Gradually, not only learning in traditional environment where attending classes is essential, but also communities can learn online with the help of digital technologies. With this, learning

The contents of the thesis is for internal user only

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