

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

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fulfillment of the requirement for the degree of

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By

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April 2009

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## **DECLARATION**

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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 Information derived from the published and unpublished work of others have been acknowledged in the text and a list of references is given.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

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## **ABSTRACT**

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Many eLearning materials (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.

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## ABSTRAK

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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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On top of everything, The Almighty God knows better...

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*Ariffin Abdul Mutalib*

Universiti Utara Malaysia  
15 April 2009

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## DEDICATION

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In the name of Allah, The Most Beneficent, 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*

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15 April 2009

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## LIST OF ABBREVIATIONS

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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 21<sup>st</sup> 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  
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