Instructional Technology Research, Design and Development
Lessons from the Field

Nor Aziah Alias & Sulaiman Hashim
Instructional Technology Research, Design and Development:
Lessons from the Field

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# Table of Contents

Preface.................................................................................................................................................. xx

Acknowledgment.................................................................................................................................. xxiii

## Section 1
### Introduction

**Chapter 1**
Design and Development Research in Instructional Technology ......................................................... 1  
*Nor Aziah Alias, Universiti Teknologi MARA, Malaysia*  
*Sulaiman Hashim, Aminudin Baki Institute, Malaysia*

## Section 2
### Problem Definition and Analysis

**Chapter 2**
Defining Research Problems: Processes for Beginning Researchers ..................................................... 25  
*Sonja A. Irlbeck, Capella University, USA*  
*Nan Thornton, Capella University, USA*

**Chapter 3**
Conducting Needs Analysis in Preparation towards the Development of Electronic Self-Instructional Materials (e-SIM)........................................................................................................ 43  
*Haziah Jamaludin, Universiti Teknologi MARA, Malaysia*  
*Hairani Wahab, Universiti Teknologi MARA, Malaysia*  
*Suzana Hamzah, Universiti Teknologi MARA, Malaysia*

**Chapter 4**
First Year Students Conceptions of Learning: A Phenomenographic Research ..................................... 56  
*Despina Varnava-Maroucho, European University Cyprus, Cyprus*
Chapter 5
Technodiversity: Lessons Learned from a Diversity Exchange

Kimberely Fletcher Nettleton, Morehead State University, USA
Lesia Lennex, Morehead State University, USA

Section 3
Techniques and Strategies

Chapter 6
Developing a Method for the Design ofSharable Pedagogical Scenarios

Marcelo Maina, Universitat Oberta de Catalunya, Spain

Chapter 7
Design and Evaluation of a Web-Based Learning Module on Computer Networking

Sulaiman Hashim, Aminudin Baki Institute, Malaysia

Chapter 8
Using a Design Research Approach to Investigate the Knowledge-Building Implications
of Online Social Networking and Other Web 2.0 Technologies in Higher Education Contexts

Cameron Richards, Universiti Teknologi, Malaysia

Chapter 9
Qualitative Investigation for Educational Technology: A Lesson on the Presentation
of Methodology

Afendi Hamat, Universiti Kebangsaan Malaysia
Mohamed Amin Embi, Universiti Kebangsaan Malaysia

Chapter 10
Qualitative Research Dilemma in the Study of Blog Forums: Practical Issues

Xavier Thayalan, Universiti Teknologi MARA, Malaysia
Faridah Noor, Universiti Malaya, Malaysia

Chapter 11
An Instructional Design “Use Case”: Instructional Technologies for Developer Stakeholders

Shalin Hai-Jew, Kansas State University, USA

Chapter 12
Searching for Information on the Web: A Guideline for Effective Searching

Fadhilah Mat Yamin, Universiti Utara Malaysia, Malaysia
T. Ramayah, Universiti Sains Malaysia, Malaysia
Section 4
Design and Development

Chapter 13
“The Proffer”: Using Scenarios for Instructional Technology Planning ......................................................... 203
Shalin Hai-Jew, Kansas State University, USA

Chapter 14
Rapid Implementation of e-Learning using a Technology Design Model.......................................................... 219
S. Johan Coetzee, University of the Free State, South Africa
Alistair Smart, University of the Free State, South Africa

Chapter 15
A Step by Step Guide to Design and Delivery of Mobile Learning Content.................................................. 238
Serge Gabarre, University Putra Malaysia, Malaysia
Cécile Gabarre, University Putra Malaysia, Malaysia

Chapter 16
Instructional Technology Design of Smart Malay-Mandarin Dictionary (SMMD) to Support Vocabulary Acquisition in Teaching Chinese as a Foreign Language .......................................................... 256
Yingsoon Goh, Universiti Teknologi MARA, Malaysia
Saiful Nizam Warris, Universiti Teknologi MARA, Malaysia
Hasiah Mohamed, Universiti Teknologi MARA, Malaysia
Norlina Mohd Sabri, Universiti Teknologi MARA, Malaysia

Chapter 17
The Art and Science of Designing and Developing an Online English Language Training Module for Adult Learners .................................................................................................................. 270
Wan Zumusni Wan Mustapha, Universiti Teknologi MARA, Malaysia

Chapter 18
Design and Development of a Multimedia Constructivist Learning Environment to Affect the Achievement of Chemistry Learners .................................................................................................. 287
Vickneasvari ap Krishnasamy, SMK Kampong Kastam
Toh Seong Chong, Universiti Sains Malaysia, Malaysia
Irfan Naufal Umar, Universiti Sains Malaysia, Malaysia

Chapter 19
Using WEDPI Learning Package to Upgrade Teacher’s Skills on Information Technology .................. 306
Johan Eddy Luaan, Universiti Teknologi MARA, Malaysia
Sabariah Shariff, Universiti Malaysia Sabah, Malaysia
Zulkifli Mohamed, Universiti Malaysia Sabah, Malaysia
Chapter 20
Designing, Developing and Evaluating Professional Language and Intercultural Competencies with Phone Simulations .................................................................................................................................................................................. 319
   Cécile Gabarre, University Putra Malaysia, Malaysia
   Serge Gabarre, University Putra Malaysia, Malaysia

Chapter 21
Globalizing and Localizing: Creating an Introductory Public Health Course and Online Learning Environment (A Case Study).................................................................................................................................................................................. 335
   Shalin Hai-Jew, Kansas State University, USA
   Beth A. Montelone, Kansas State University, USA
   Lisa C. Freeman, Northern Illinois University, USA

Section 5
Evaluation

Chapter 22
Formative Evaluation of an Arabic Online Vocabulary Learning Games Prototype: Lessons from a Malaysian Higher Learning Institution Experience .................................................................................................................................................................................. 357
   Muhammad Sabri Sahrir, International Islamic University, Malaysia

Chapter 23
Moving Beyond Four Walls: The Expanding Online Teacher Preparation Classroom ................................................................. 370
   Tina Heafner, University of North Carolina at Charlotte, USA
   Teresa Petty, University of North Carolina at Charlotte, USA
   Richard Hartshorne, University of Central Florida, USA

Chapter 24
The Effectiveness of an Inquiry-Based Computer-Simulated Lesson in Physics ................................................................. 401
   Sopiah Abdullah, Universiti Malaysia Sabah, Malaysia
   Nyet Moi Siew, Universiti Malaysia Sabah, Malaysia
   Merza Abbas, Universiti Sains Malaysia, Malaysia

Compilation of References .................................................................................................................................................................................. 426

About the Contributors .................................................................................................................................................................................. 467

Index .................................................................................................................................................................................................................. 476
Chapter 7

Design and Evaluation of a Web–Based Learning Module on Computer Networking

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ABSTRACT

The Malaysian Secondary School Information Technology (IT) curriculum introduced in 1999 was developed based on the Smart School's framework which emphasised on the use of self-directed, self-access, self-assess and self-pace learning methodologies. However, the introduction of the online IT self-learning module that was supposed to help teachers in adopting this methodology has not been implemented well. As a result, teachers tend to revert to their traditional teaching approaches which could jeopardize the success of the IT curriculum's objectives. This study was carried out to design, develop and evaluate a new web-based learning module which the researcher hopes could improve or possibly replace the existing module.

The module was developed in accordance to the developmental research approach which employed different types of evaluation methodology depending on its stage of development. The methods included peer review, expert review, cooperative evaluation and experimental design. The first three methods were used to address both the design and the development objective of this study while the latter is to address its evaluation objective. The result of this evaluation shows strong corroboration between all data sources (achievement test, survey and interview). In addition, the result also indicates that students who used the module have more positive perception toward the IT subject. This finding not only established the effectiveness of the module, but also the positive effect of using such module on students' achievement and their perceptions towards the subject.

This finding has two direct implications. First, the empirically proven design principle used in the design and development of the web-based learning module in this study can be used as a reference model for those who are interested in developing a similar module. Second, the finding of this study suggests the potential of integrating the use of a web-based learning module in the IT classroom.

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