Preface

This book is about design and development in Instructional Technology Design and development research (Richey & Klein, 2007), or was formerly known as developmental research (Richey, Klein & Nelson, 2004) is an emerging form of research in the field of instructional technology. This method is also similar to designed case research (Reigeluth & Frick, 1999), design-based research (Reeves, 2006 & Herrington, et. al, 2007), formative research (Nieveen, 2009), and design research (Bannan-Ritland, 2003; Van der Akker, 2007) with differences in certain focal aspects. For the purpose of this book, we employ the definition of design and development research as:

The systematic study of design, development and evaluation processes with the aim of establishing an empirical basis for the creation of instructional and non-instructional products and tools and new or enhanced models that govern development (Richey & Klein, 2007)

This book has been prepared to guide researchers who are embarking on a design and development research in instructional technology. These will also include emerging researchers and graduate students in the field of education, computer science, and information technology. It propagates design and development research (DDR) or design-based research but is not limited to specific deliberations on the methodology. It takes a more general approach to presenting design, development and other aspects of instructional technology research through various lessons learned by practitioners in the field. The book offers case-like examples which are detailed accounts of the different phases of the research (analysis, design, development, implementation/delivery and evaluation) that can be a valuable resource for research methodology instructors and students.

Many researchers have designed, developed, and evaluated products in the field of instructional technology, some without comprehending what constitutes design based or design and development research. The book aims to give readers an overview of such research and how it is conducted in different contexts and purposes. What is most pertinent is the provision of practical knowledge on different aspects of design, development and evaluation research through lessons learned by the contributing authors or researchers. It is also the aim of the the book to provide a discussion point among students and instructors on the distinctions among the various approaches to design-focused research and how best to design and execute one.

The book will follow suit other texts by Richey and Klein (2007), Plomp and Nieveen (2009), Van Den Akker, Gravemeier, McKenney and Nieveen (2006) and Kelly, Lesh and Baek (2008) in projecting design and development research as a viable research alongside other common research designs. We

also applaud and support the initiatives taken by the Design Based Research Collective that seeks to "refine a definition of design experimentation that is broad enough to encompass a diversity of research perspectives, yet rigorous enough to sustain theoretical and methodological attacks on its robustness and cumulativity" (http://www.designbasedresearch.org/index.html). Similar commendation to the International Society for Design and Development in Education for the publication of the Educational Designer Journal to "promote excellence in the research-based design, development, and evaluation of educational products and processes…" (http://www.educationaldesigner.org/ed/). It is in the light of these efforts that this book is initiated. It is hoped that it will further expand the design research knowledge base.

As each problem and its solution is unique, lessons learned from each case will be valuable to the researcher. Concrete "lessons" presented in each chapter illuminate the multi-dimensionality of IT development initiatives that include content, context, culture, designers, technological imperatives, diversity of users and facets of the learning environment. The book has an international "flavour" brought in by the various chapter contributors that will lend to the sharing and understanding of design and development research experience in a more globalized context.

ORGANIZATION OF THE BOOK

The book presents cases in analysis, design, development, implementation and evaluation of instructional technology products, models and programs. It comprises an introductory chapter on design and development research (DDR) and four sections representing the components of a typical design and development research: (1) problem definition and analysis (2) techniques and strategies, (3) design and development and (4) evaluation.

- The first section introduces the reader to the general characteristics and pertinent aspects of DDR through a case example.
- The second section deliberates on the early stages of the research that includes the process of defining research problems and analysis of learners, learning and technology issues. In this case, the issue discussed is how culture of place impact technology communication.
- The third section focuses on techniques and strategies that may be taken to conduct a design and development research. Both quantitative and qualitative cases are presented in this section.
- The fourth section presents design and development cases. Nine chapters on the design and development of products, tools, model, learning environment and courses are expected to aid the reader in conducting a similar design and development project.
- The focus of the fifth section is on the evaluation process in a design and development research.

Each section is initiated by a prelude describing the focus of each chapter and the lessons learned from the section. Each chapter includes the description of the author(s)' research and lessons learned that may come in the form of the researchers' reflection on their experiences and/or recommendations for future design and development researchers. Eventhough the chapters are a mix of two separate procedures – that of planning and designing a piece of research, and that of designing and developing an instructional product, it is hoped that emerging design and development researchers will be able to use this book and emulate some of the research aspects explicated in the chapters.

A word of caution: Since the chapters constitute complete research conducted by the author(s), the contents are inclusive of all elements of a research report and are not rigidly demarcated according to only a certain aspect of design and development research. An overlap of discussion in the different sections is thus, inevitable.

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