

Preface

HISTORY

Early in 2005, Phil Harris, Executive Director of the Association of Educational Communications and Technology, approached Mike Spector and asked if he would like to lead the development of the third edition of the *Handbook of Research on Educational Communications and Technology*. Spector consulted with Dave Jonassen, editor of the previous two editions, and with Lane Akers, Senior Education Editor at Routledge Publishers. A strategy was then developed to make the third edition more international in terms of scope and contributions and to have an editorial team rather than an individual editor lead the effort. Spector, Harris, Akers, and Jonassen then discussed who might comprise that editorial team. By May 2005, the editorial team of Mike Spector, Dave Merrill, Jeroen van Merriënboer, and Marcy Driscoll was formed.

The strategy developed to determine the contents had four major steps: (1) extended conversations with Jonassen to take lessons learned from the first two editions into this edition; (2) a survey of AECT members to get their reactions to the second edition and recommendations for the third edition; (3) presentations at the annual meetings of AECT in 2005 and again in 2006 to get direct feedback from AECT members about plans for the third edition; and (4) ongoing discussions among the editors via teleconference, videoconference, and occasional face-to-face meetings about the *Handbook*.

Nearly 200 persons responded to the *Handbook* survey, which asked about general use, individual chapters in the second edition, and their desires for the third edition. Responses indicated that the *Handbook* is used primarily by doctoral students initiating a research review for their dissertation studies, by faculty as an additional resource for teaching courses on related topics, and by researchers seeking a quick review on a specific topic. Recommendations for the third edition included addressing more topics and having shorter chapters with more references to recent research. We followed these recommendations to the best of our ability.

At the 2005 AECT meeting, the editorial team developed the basic organization of the *Handbook* around four parts: (1) Strategies, (2) Technologies, (3) Models, and (4) Design and Development. These parts reflect major aspects involved in deploying informa-

tion and communications technologies (ICT) for educational purposes; they are preceded by a Foundations part and followed by a Research Methodologies part. Each part was led by one of the coeditors with assistance from a second coeditor and several external reviewers.

Also at that meeting, the editorial team with significant input from Jonassen developed an initial list of desired contributors. The agreement with our publisher, Lawrence Erlbaum Associates, was that the second edition would remain available online through the AECT website to AECT members, so some excellent chapters in that edition were not included in this third edition. Author guidelines were developed that reflected the outcomes of the survey and the organizational framework developed by the editorial team. Specifically, we asked for shorter chapters with longer bibliographies, and we also requested keywords with definitions to be included in a glossary and an indication (via asterisks in the reference section) of core references.

A general call for contributions was issued to the AECT membership. The lead editor for each part of the *Handbook* was responsible for determining the contributing authors to that part and for coordinating drafts and reviews of that part of the *Handbook*. In short, the editorial team functioned as a team, with coeditors having and taking responsibility for the various parts of this *Handbook*.

We made a conscious effort from the very beginning to include many more non-American contributors. Rather than simply ask those who had contributed to the first two editions to again make a contribution, we determined that we ought to think ahead to the fourth edition. We also knew that the second edition would remain available for the indefinite future. As a consequence, when we eventually approached authors, we expressed a preference for pairing a highly experienced author with a promising young scholar who conceivably could lead a contribution in the next edition. The intent in selecting authors was to ensure that chapters would be broadly representative of the relevant research in a particular area rather than reflecting only one view or approach.

The *Handbook* took shape in late 2005. At that time, we had as many as 100 chapters targeted for development. The editorial team narrowed that list to about 65 in early 2006 when development of individual

chapters took place. Along the way, a few contributors decided they could not make the contributions they had wanted to make and withdrew from the process. One of the most distinguished contributors who had also made valuable contributions to the first two editions, Bill Winn, passed away unexpectedly. Bill cannot be replaced; however, his chapter on computer-mediated technologies was a critical one. Art Graesser agreed to take on the formidable task of leading the development of that chapter in a short period of only six months. In the end, the third edition of this *Handbook* consists of 56 chapters divided into six parts.

CONTENTS

As already noted, the third edition is divided into six parts. Part I, Foundations, led by Marcy Driscoll, is expected to remain fairly stable over the years and require only minor updating every five years or so. The Foundations part includes historical, theoretical, and methodological foundations and perspectives. This initial part of the *Handbook* is aimed at the various sets of assumptions that underlie research in educational communications and technology. Some of these assumptions are based on what has gone before. Others are based on developments in other disciplines. The goal in this part of the *Handbook* is to make these assumptions explicit, summarize key developments, and provide pointers to exemplary work that has implications for research in educational communications and technology.

Part II, led by Dave Merrill, is focused on strategies. The various chapters in the Strategies part cover both instructional and learning strategies, although the emphasis is on implications for design and development. These various strategies can be linked with subsequent chapters in Parts III, IV, and V of the *Handbook*, in accordance with our organizational framework.

Part III, led by Mike Spector, is focused on technologies. The editorial team collectively decided that the distinction between hard and soft technologies was too facile and not especially meaningful, and it was dropped in this edition. The Technologies part of the *Handbook* consists of 17 chapters on both digital and non-electronic technologies, intelligent and non-intelligent technologies, and planning and evaluation technologies, as well as technologies for implementation.

Part IV, led by Jeroen van Merriënboer, focuses on models. Issues concerned with various types of and approaches to learning are discussed. These models clearly inform design and development and can be

linked to various instructional strategies covered in Part II. The Models part includes general models directed toward learning in schools as well as outside schools and models that focus on learning in specific domains such as medicine, science, and reading.

Part V, led by Dave Merrill, focuses on design and development. This part of the *Handbook* discusses research that pertains directly to professional practice. Readers will find chapters on familiar topics such as competency development, task analysis, change agency, and performance assessment. The Design and Development part also covers innovative treatments of design languages, design and development teams, and user-centered design and development.

Part VI, led by Jeroen van Merriënboer, focuses on methodological issues. This part follows the empirical cycle through theory development, experimental design, and data collection and analysis. Design sections adhere to the main parts of the *Handbook* and treat, in order, research on strategies, technologies, models, and design and development. For data collection, special requirements for (virtual) laboratories are discussed. Analysis methods include the analysis of learning processes, interactions, and complex performances. The Methodological Issues part ends with a discussion by the editorial team of a research agenda that should help our field to build a strong scientific foundation for the future.

USE

The division into four core parts that represent key aspects of using information and communications technologies to support learning and instruction, preceded by a Foundations section and followed by a Methodological Issues section, is intended to facilitate use of this research handbook. We have intentionally kept titles brief and descriptive to help facilitate those who wish to follow a thread through the four core parts of the *Handbook*.

An example of a thread concerned with research on instructional modeling and representation might involve the chapters on representation strategies, modeling technologies, model-facilitated learning, and design languages. Many such threads are possible. Individual chapters were primarily developed to represent stand-alone treatments of specific topics within the framework and guidelines provided. All chapters have extensive lists of references that should prove useful to researchers new to a particular area of research and to doctoral students conducting their background research.

It is our belief that professional practitioners and educational researchers will benefit from the chapters in Parts I and VI. These chapters, as well as many others in the *Handbook*, are likely to be useful for those responsible for leading graduate seminars in the areas of educational technology, instructional systems, or learning environment design and development. It is our hope that this edition of the *Handbook* will be as

useful as the previous two editions. Time will tell. In any case, we invite you to give us your feedback, which we will pass along to whoever is selected to lead the development of the fourth edition.

Learn, educate and persevere.

*Mike Spector, Dave Merrill,
Jeroen van Merriënboer, and Marcy Driscoll*