

# Instructional-Design Theories and Models

## Volume III

Building a Common Knowledge Base

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instruction for each of four major *outcomes* of instruction: skill development, understanding, affective development, and integrated learning outcomes. Each of these chapters also synthesizes the current knowledge about that kind of instruction. Finally, Unit 4 offers ideas that may prove useful for building a common knowledge base about instruction.

Because this volume contains many ideas that may be difficult for all but the most experienced to digest, we have tried to make it easier for the reader by preparing the same kind of unconventional **foreword** for each chapter as was done for Volume II. Each chapter foreword outlines the major ideas presented in the chapter. This offers something akin to a hypertext capability for you to get a quick overview of a chapter and then flip to parts of it that particularly interest you. It can also serve preview and review functions and make it easier to compare different theories. Furthermore, we have inserted **editors' notes** in most chapters to help you relate elements in a chapter to fundamental ideas presented in other chapters. Finally, each unit has a foreword that introduces the chapters in that unit.

It is our sincere hope that this book will help to move instructional theory to the next stage of development—creating a truly common knowledge base with a consistent terminology. We hope it will help instructional theorists and researchers to contribute to the growing knowledge base about instruction in a way that acknowledges and builds on prior work, and that it will help instructional designers and graduate students to understand and utilize the full range of accumulated knowledge about how to help people learn.

— CMR & ACC

# Unit 1

## Frameworks for Understanding Instructional Theory

### Unit Foreword

This unit lays the groundwork for a shared language and a set of common understandings in instructional theory. This unit foreword provides brief descriptions of the primary ideas in each of the chapters in this unit, which offer some organizational schemes for understanding and developing a common knowledge base about instruction. We strongly recommend reading this unit before reading any of the other chapters in this book.

In chapter 1 we (Reigeluth & Carr-Chellman) look at the constructs and terminology used to describe and understand instructional theory. First, we define instruction as anything that is done purposely to facilitate learning. Based on this definition and understanding of the entire field of instructional design, we make the case for the need for a common knowledge base and then relate design theory, instructional design theory, student-assessment design theory, curriculum design theory, learning theory, and the learning sciences to instruction. We identify several aspects of instructional design theory, including event, analysis, planning, building, implementation, and evaluation design theory within instructional design theory. These aspects are then related to the concept of layers of design (Gibbons & Rogers, chapter 14). We identify the need for a significantly new paradigm for future change efforts and describe the need for learner-centeredness in that paradigm. We share the results of a small Delphi study to help build consensus on common terms, which lays a foundation for a common language in our field.

Chapter 2 takes up the issue of what we mean by instruction itself (as opposed to instructional theory, which we deal with in chapter 1). Here Reigeluth and Keller take up the issues associated with major constructs that make up instructional theories. They settle on instructional situations, methods, approaches, components, and content sequencing as the categories of constructs concerned with instruction. Built on an analogy to rules of English grammar, these constructs are linked and designers are advised to carefully consider the relationships among the categories.

In chapter 3 Merrill discusses the principles of good instruction that may be common to all instruction. Calling these “First Principles,” Merrill lays out

the qualifications for inclusion in this list, along with the principles in brief and in more detail. The principles include the demonstration principle, application principle, task-centered principle, activation principle, and integration principle. The chapter takes up the difficult task of elaborating on these principles and relating them to one another to create a defensible set of principles that Merrill asserts will create effective and efficient instruction.

Chapter 4 (Reigeluth & Carr-Chellman) focuses on the situational principles of instruction—ones that vary from one situation to another. This chapter describes what situational principles are and links them to the notion of universal principles through an analogy of the universe and galaxies. In an effort to increase precision in our language and knowledge base, we elaborate on kinds, parts, and criteria as ways to make methods more precise. Principles as heuristics, or rules of thumb, are particularly important for precise descriptions of methods. A review of learning taxonomies leads us to a description of the instructional theories we have included in units 2 and 3.

—CMR & ACC

## 1

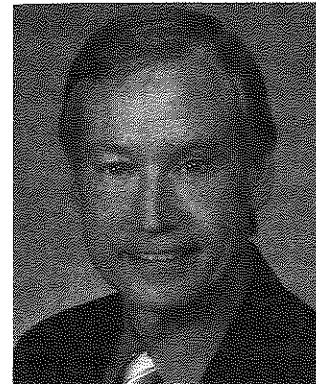
## Understanding Instructional Theory

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**Charles M. Reigeluth** received a BA in economics from Harvard University. He was a high school teacher for three years before earning his doctorate in instructional psychology at Brigham Young University. He has been a professor in the Instructional Systems Technology Department at Indiana University's School of Education in Bloomington since 1988, and served as chairman of the department from 1990 to 1992. His major area for service, teaching, and research is the process for facilitating district-wide paradigm change in public school systems. His major research goal is to advance knowledge to help school districts successfully navigate transformation to the learner-centered paradigm of education. He has published nine books and over 120 journal articles and chapters. Two of his books received an "outstanding book of the year" award from the Association

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