

Review of “The dimensions of an instructional design knowledge base: Theory, research, and practice”

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Abstract

This review assesses the book titled "The instructional design knowledge base: Theory, research, and practice" authored by Richey, Klein, and Tracy, highlighting its emphasis on foundational knowledge, extensive theory base, and application to current Instructional Design (ID) practices. The book offers a comprehensive overview of ID theories from various disciplines, making it valuable for scholars, graduate students, educators, and practitioners in the field. It also guides decision-making and includes suggestions for future research, making it beneficial for researchers aiming to contribute to the field of ID.

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Introduction

The field of Instructional Design, as highlighted by Richey, Klein, Tracey (2011) and Bond and Dirkin (2018), is a dynamic profession with continuous growth and development aimed at enhancing learning and performance. Despite its ongoing evolution, there are challenges such as oversimplified definitions and limitations in understanding its full scope and interdisciplinary nature. The book being reviewed stands out for its comprehensive description of the complexity, diversity, and foundational principles of instructional design.

The writers of the book are scholars with rich experience and several publications in the area. For example, Richey has a great deal of experience in teaching, developing programs, and conducting educational research. She has several publications in the area of ID and technology, and received several book awards. Similarly, Klein has authored several publications and won several awards for his scholarship. Tracey's teaching and research focus on the theory and research of interdisciplinary design including developing a designer's professional identity, design thinking, and empathic design. In general, the authors are both

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scholars and practitioners in the field, and they offer a balance of the conceptual and practical aspects of ID, making their work comprehensive and very relevant. This review is organized into four key sections to illuminate the primary focus areas, strengths, and significance of the book in the field of instructional design.

Overview of the Book

With 240 pages divided into 10 meticulously crafted chapters, the book offers a detailed exploration of various theories that have influenced the evolution of ID theory and practice. The first chapter, “The Dimensions of an Instructional Design Knowledge Base”, provides an overview of the book and helps readers understand its objectives and overall organization. In this chapter, the authors present a brief history of ID, noting that the term “instructional design” was not typically used until the 1970s. As a result, instructional designers identified themselves as educational psychologists, media specialists, or training designers. In this chapter, the authors identified and introduced the following six content domains of the ID knowledge base: learners and learning processes, learning and performance contexts, content structure and sequence, instructional and non-instructional strategies, media and delivery systems, and designers and design processes. They also argue that ID is more than just knowing the procedural steps in various design models and that to be a successful designer, one must have an in-depth understanding of these domains. The authors also distinguished between foundational theories borrowed from other disciplines and those developed within the profession, demonstrating the multidisciplinary nature of ID’s knowledge base.

The second chapter discusses the “General Systems Theory” as one of the underlying foundational ID theory bases. It begins with a description of the major elements of systems theory and explains how the systems approach functions. The authors argue that the general systems theory principles have shaped the direction and orientation of most ID models and procedures. Detailed examples of how the theory translates to ID are provided emphasizing how systemic and systematic thinking set the basis for understanding and solving ID problems. The chapter also presents a description and comparison of various Instructional Systems Design (ISD) models rooted in the general systems theory. They are collectively known as the ADDIE (Analyse, Design, Develop, Implement, and Evaluate) model. In the end, the chapter highlights the relevance of the theory for each of the six ID domains introduced in the first chapter. This chapter guides instructional designers, both novice and experienced, in selecting more contextually appropriate ISD models.

The third chapter, “Communication Theory”, starts by describing how the notion of communication has evolved and the varying perspectives and the associated models of communication. Emphasis is placed on philosophical orientations and the applications of communication theory and models to ID. The authors claim that the application of communication theory in ID has solid research support. The chapter closes with an interesting summary illustrating the components drawn from communication theory. It also presents how these components affect each of the six ID knowledge base domains.

The fourth chapter deals with “Learning Theory” and examines various clusters of learning theories with their philosophical orientations and instructional design applications. For instance, the ID application of behavioral learning theory includes teaching machines and programmed instruction, task analysis, behavioral objectives, practice, and feedback (p.54). Cognitive design strategies that facilitate the storage and retrieval of information, (including message design techniques, and instructional strategies such as rehearsal, chunking, mnemonics, and the use of advance organizers) (p.59) are all the ID application of cognitive learning theories. They have also presented lots of empirical studies that support the impact of different learning theories in shaping ID principles and practices. Similar to the previous chapters, this chapter ends by showing the elements derived from learning theories and how these elements relate to each of the six domains of the ID knowledge base.

The fifth chapter, “Early Instructional Theory”, focuses on uncovering the contributions of the early instructional theories such as Tyler’s Basic principles of curriculum and instruction to the ID field. The authors argue that the key elements and principles found in ID models today such as the importance of analyzing and addressing learner characteristics, sequencing objectives and activities, aligning objectives, instruction and assessment, etc. are all rooted in these early instructional theories. To those who confuse ID with early instructional theories, the authors clarified that the two are closely aligned but early theories are precursors to the ID theories and models.

The sixth chapter focuses on “Media Theory” and provides a comprehensive definition of media, an overview of the role of media in the learning process, and a comparative analysis of early and new approaches to media selection and media use. As the book was published before the popularity of different social media and new developments in the instructional technology field, including artificial intelligence (AI), readers need to complement this chapter with a closer examination of up-to-date literature in the area (including the edited book of Richey, 2013; An, 2021). However, the chapter remains an essential resource to understand the focus of media theory, the different ways in which media impacts learning, and the manifestations of media theory in ID. Also, it gives an insight into the researches that support media theory applications in ID.

“Conditions-Based Theory”, discussed in chapter seven, is among the major theory bases of ID that stem from ID research and practice, especially from Robert M. Gagne’s works. As the core principles of ID are rooted in this theory, as the authors noted, many ID scholars consider this theory as the heart of ID. The chapter clearly and comprehensively presents the foundations of the conditions-based theory, its key principles, and its application in ID. The chapter ends with thought-provoking research ideas and a summary of how the elements of this theory are related to the domains of ID.

The eighth chapter, “Constructivist Design Theory”, examines how the theory evolved, its foundations, assumptions, and key principles as well as its influences on ID. The authors distinguished the underlying assumptions of the two commonly known constructivism orientations, individual constructivism or cognitive constructivism and social constructivism, and argued that the two orientations have the most impact on ID. Reading this chapter helps readers understand the philosophical and theoretical bases of active learning, facilitation of learning, authentic, contextualized, and problem-based learning, rich and collaborative learning environments, and scaffolding.

Chapter nine, “Performance Improvement Theory”, examines the theories and models of performance improvement (PI) and its contribution to the ID knowledge base. Indicating how PI and ID are related, in this chapter, the authors have discussed the theoretical and philosophical foundations of PI, five basic PI models (e.g., Gilbert’s Harless’s, Rummier and Brache’s, and Kaufman’s models of PI), three models of PI evaluation (Donald Kirkpatrick’s four-level model, Brinkerhoff’s an integration model, Swanson and Holton’s model of measuring performance results), and trends in the applications of PI in to ID. They have also provided empirical support for PI applications in ID and suggestions for future studies. This chapter is worth reading particularly for those who focus on enhancing performances of individuals and organizations.

In the last chapter, “A Taxonomy of the Instructional Design Knowledge Base”, the authors described the ID knowledge base, synthesized the eight foundational theories discussed earlier, and illustrated the impacts of each theory on the ID theory, practice, and research. In so doing, they defined the nature of taxonomies and their uses, developed a six-part taxonomy of ID’s knowledge base domains, and suggested the taxonomy as a conceptual framework for the ID field. When reading the last chapter, one can sense that the ultimate goal of the book, describing the ID knowledge base, is properly achieved.

Strengths and Relevance of the Book

The book has several strengths. To start with, the book provides a succinct summary of all the theories illustrated in the book making it easy to follow and interesting to read. We also consider it a perfect resource for scholars, students, and practitioners in the education field in general and in the field of curriculum and instruction in particular since it provides a rich representation of the ID literature. Those who are new to the ID field would benefit a lot as a comprehensive list of references is included. Unlike other books written about ID, this book also illustrates the continuing debates in the ID literature and indicates the areas where empirical studies are sought for the benefit of ID researchers.

Although the book primarily targets scholars and advanced graduate students of ID, given its comprehensiveness and readability, it can be used as an essential reference material for students of curriculum and instruction at all levels, educational psychologists, instructional technologists, adult educators, distance educators, and for anyone else who seek to deeply understand the broad and complex nature, evolution, theoretical, philosophical and empirical foundations of ID. Even though the book does not focus on how to design instruction, those who design instruction will also greatly benefit from the book as it helps them to understand the theoretical foundations of the ID field and to make or justify ID decisions they may come across. As such, the book is unique as it is useful for both academicians and practitioners in the broader field of education.

The book is flawless in many respects. However, it would have benefited a lot if the authors had examined the ID applications of critical theory, feminist pedagogy as well as adult learning theories. We hope that in the next edition of the book, the authors will consider these theories and new developments in the ID field including the impact of artificial intelligence on ID, and make the book more comprehensive and relevant.

Concluding Remarks

Although ID is a well-established profession and an area of study with a distinct set of competencies and guiding theories, there are still misunderstandings about its nature and scope. Richey, Klein, and Tracey's book "The Dimensions of an Instructional Design Knowledge Base: Theory, Research, and Practice", the reviewers contend, is exceptionally an important resource to understand the nature, breadth, and depth of the ID field. We strongly believe that the book helps to clarify confusions around the kind of competence and qualification needed to deliver ID courses in Ethiopian higher learning institutions or other places with similar problems.

The book can also be considered an invaluable reference for those who teach foundations of curriculum and instruction courses for undergraduate or postgraduate students. This book is particularly significant in informing Ethiopian higher education institutions where subject matter specialists with very little or no awareness of ID are given full autonomy and responsibility to design programs of study and instruction. Hence, we highly recommend this book for anyone interested to learn about ID and its broader knowledge base.

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