Education is constantly changing to reflect student needs as well as changing pedagogies. The most interesting and important innovation in education, in recent years, is the widespread introduction of computers. Of particular interest in the 21st century are the Internet and, more specifically, the World Wide Web. Just as in the turn of the century the pressures of change created by industrialization forced the educational system to respond by rethinking the structures of the institutions and the roles of the educators (see Strover & Bryant, 1987), so do the pressures generated by the Internet today mandate changes in education. A consideration of the pedagogical applications of computer and Internet technologies is of considerable importance to educators. That this is recognized by institutions of higher education is clear in that “instructional integration of information technology” was reported by CIOs in the United States as the “single most important IT issue confronting their institutions over the next two-three years (Campus Computing Project, 2004).

When considering issues of pedagogy and computer/Internet technologies, educators must look beyond the traditional classroom. The economic, social, and cultural changes in higher education have led to an irreversible shift from the traditional, space-and-time bound institution to one that offers increasingly cost-effective, technologically-enhanced programs. Online learning has thus become a force to reckon with, both in distance learning and as an adjunct to the traditional classroom. This trend is likely to increase rather than decrease. With access to the Internet now all but universal for faculty members in the United States (Office of Higher Education at NEA, 2002), faculty are increasingly using the Internet in their teaching. As well, more students than ever are studying online—over 1.9 million students in the United States alone, in the fall of 2003. Amazingly, the projected growth in online enrollment (of 20% a year) exceeds the overall expected growth for the entire higher education student population (Sloan Consortium, 2004).

Given these facts, it is alarming that the growth of online education has not been accompanied by a concomitant growth in pedagogical resources for educators. Yet, research shows that teaching methods have been slow to adapt to the technology (Twigg, 2001), and the need for pedagogical change is pressing. An equally urgent need is for such growth to be under-girded by sound learning theories and instructional modeling. Although there is a wealth of instructional design theories, designing online courses through the incorporation of appropriate theories can be challenging to educational practitioners and instructional designers who are often unfamiliar with theoretical materials. Studies show an inconsistency in online teaching and learning due to a discrepancy between theories and practice in online education (Irlebeck, Kays, Jones, & Sims, 2006). Clearly there is an imminent need to provide guidance in online teaching and learning so that educators and designers use technology more effectively in teaching practice and instructional design.
INSTRUCTIONAL MODELING AND ONLINE LEARNING

Instructional modeling, by definition, is the use of instructional models to systematically demonstrate how to incorporate an integrated set of strategy components in instruction, using Reigeluth’s (1983) terminology, to achieve desired learning outcomes. While instructional models present a particular way that the content is sequenced, the instructional modeling is focused more on a strategic scheme that promotes effective teaching and learning and an action that demonstrates the strategic scheme. Differing from instructional models, instructional modeling reflects a theory-to-practice process in action where teaching and learning follow the steps of an instructional model and present perceivable effects of the model on a target population.

In traditional classrooms, instructional modeling is often subsumed under the broader, more recognizable term “best practices.” However, this interchangeable use of the terms may cause some confusion, particularly when instructional modeling means a schematic approach to demonstrating effective teaching. As we understand it, best practices do not necessarily entail an integrated set of strategy components. They could be an instructional technique to teach students how to retell a story, or a particular method to solve a problem. Therefore, for our purposes in this book, we prefer to distinguish the term instructional modeling from “best practices” by defining the former as a process in action that demonstrates a strategic scheme for effective teaching and learning, and the latter as effective instructional techniques and methods in teaching and learning.

Online learning differs significantly from traditional classroom learning in terms of the instructional mode, ways of communication, pace of learning, and many other characteristics that have posed enormous challenges to educators and instructional designers. And, as we have previously noted, they suffer from a relative lack of pedagogical resources. One of the recent efforts attempted by practitioners who have experienced success in their online teaching is to disseminate best practices to offset this lack of pedagogical resources. However, the ability to generalize the best practices is often limited by such factors as social and economic status, geographic regions, and related demographic information (Wright, 2000). Besides, the use of isolated instructional techniques or methods (as identified by best practices) to address issues of an entire online course can be inefficient from the instructional design perspective. An organized and efficient approach to these issues is crucial. The goal of this book focuses on online instructional modeling as a systematic approach to effective online teaching and learning. However, readers may also benefit from the inclusion of some best practices as identified by the online community of educators, which can most effectively be used in conjunction with the instructional models to effectively design, develop, and manage online teaching and learning.

THE CONTRIBUTION OF THIS BOOK

This book addresses pressing needs in online education by (a) bridging theories with practice, (b) addressing emerging issues in online pedagogy and instructional modeling, and (c) identifying best practices in online teaching and learning. The book targets educators globally with an emphasis on diverse aspects in online design and modeling that include learner characteristics, media, communication, social-economic, and cultural differences. A major contribution of this book is to bring together online theories and practices with an emphasis on instructional modeling. Thus, the book is significant both theoretically and practically. At the theoretical level, it contributes to the knowledge base in online learning. It enhances our understanding of the underlying principles of online learning. At the practical level, the book provides an array of instructional models ranging from Wilmes, Huffman and Rickman’s “SIMPLE”
model, Giguere et al’s asynchronous online discussion model, to Yang’s “STEP” model which, among others, readers will find beneficial in online instructional practices.

This book also reflects the collective effort of online learning theorists and practitioners who challenge the traditional theoretical boundaries in instructional design, identify parameters critical to building online instructional models, and propose models applicable to online teaching across disciplines. Fortunately, we are able to bring together a group of excellent authors who represent perspectives on teaching and learning from a broad range of academic institutions—from private to public comprehensive, teaching to research, and from state and national to international. This book should thus appeal to readers from the United States to the international educational community. Practitioners in K-12 system should find this book of particular note, given that the nearly 49.5 million students enrolled in schools in 2003 (Enrollment Management Report, 2005) are members of the Net Generation who have grown up with exposure to, and familiarity with, the Internet. Beyond the educational community, anyone interested in e-learning, including corporations who will employ students from the Net Generation, will find this book a useful companion as they discover helpful information in online instructional modeling and practices that are under-girded by sound theories.

THE ORGANIZATION OF THIS BOOK

The three sections of this book are organized to maximize the value for the readers as they move from the theoretical to the practical and from a focus on models to specific issues of teaching and learning to multidisciplinary perspectives.

Section I presents a theoretical perspective on online instructional modeling, and includes four chapters which go beyond the boundaries of traditional instructional theories to propose a more holistic approach.

In Chapter I, the concept of functional relevance is introduced by Glenn E. Snelbecker of Temple University, Susan M. Miller, Kent State University, and Robert Z. Zheng, University of Utah. Functional relevance theory posits that educational technologies can succeed only to the extent their relevance to teaching and learning is clear. The authors focus on the importance of functional relevance to design in online and Web-based instruction, with emphasis on learners’ needs and their perceptions of the relevance between learning and instruction.

Chapter II reflects a philosophical thinking on the relationship between instructional environments and model-facilitated learning. Glenda Hostetter Shoop, Patricia A. Nordstrom, and Roy B. Clariana, Pennsylvania State University, consider the ways in which models, as pedagogical tools, can come together with technology to facilitate successful learning. Although their focus is largely pedagogical, pedagogy is strongly supported by a theoretical framework.

The focus on theory continues in Chapter III, with Deb Gearhart’s, Troy University, theory-to-practice perspective on online learning through the understanding and application of Flexible Learning Theory in a technologically-supported flexible learning environment. Gearhart’s elaboration on the theory of flexible learning provides a theoretical framework for educators in teaching and design.

Finally, in Chapter IV, Paul Gorsky, Avner Caspi, and Eran Chajut of the Open University of Israel, offer a meta-level approach to instructional design in terms of resources and dialogues common to all instructional systems. In their focus on building an infrastructure for theory of instructional design, the authors work towards a much-needed unified theory, sorely lacking in online learning today.

Section II deals with issues of teaching and learning in online instruction. The models in this section cover a wide range of topics in online learning: from interactivity, learning systems and planning,
to online assessment. The models focus on both theoretical and practical aspects of online learning by including case studies and empirical data that help illustrate the complexity of online learning.

In Chapter V, Paul Giguere, Tufts University, and Scott W. Formica, Wayne M. Harding, and Michele R. Cummins, SSRE at the Harvard Medical Hospital, consider interaction strategies appropriate for learning in large classes. They address a range of interaction strategies designed to facilitate effective learning in large (over 40 students) online courses, supporting their recommendations with empirical evaluations of two strategies in seven courses.

In Chapter VI, Graham Bodie, Purdue University, Margaret Fitch-Hauser, Auburn University, and William Powers, Texas Christian University, introduce an online learning system, Concept Keys, which allows a blended learning approach by integrating the use of two or more complementary approaches to teaching social skills and advancing pedagogical goals. The authors support their discussion with empirical data from two studies.

In Chapter VII, Harrison Hao Yang, State University of New York at Oswego, presents an approach to enhancing social presence in online learning through the use of the STEP approach. The STEP approach to teaching includes Scaffolding before starting new learning topic, Transaction during the learning process, Evaluation during and after each learning topic and Presentation of outcomes. The author supports the use of this method with empirical data assessing students’ perceptions in an online class.

In Chapter VIII, Barbara Wilmes, Stephanie Huffman, and Wendy Rickman, from the University of Central Arkansas, present another model—a technology planning model for online instruction. The SIMPLE model encompasses a consideration of Student/instructor assessment, Inventory, Measurement, Planning, Leadership, and Evaluation. The authors present clear guidance for educators on how to use this model for strategic technology planning.

In Chapter IX, Haomin Wang, Dakota State University, considers an important issue in online instruction: the means of promoting interactivity between learners and instructional sources (which are primarily online learning materials and activities). Wang’s framework for promoting interactivity includes the following components: ensuring accessibility, enhancing legibility and readability, using multimedia, promoting cognitive engagement, supporting learner control, and maintaining system control. Both teachers and instructional designers can avail of this clearly articulated framework to improve their teaching-learning experience.

In Chapter X, Pedro Willging, University of La Pampa of Argentina, considers a different aspect of online interactions—human-to-human social interactions in online classes. Willging uses social network analysis (SNA) methods to investigate interaction patterns among students in comparison to their instructors’ perceptions of these interactions. Educators can utilize the data from this study to analyze online interactions in their own classes and thus improve teaching and learning.

In the final chapter in Section II, Bobbe Baggio, of Advantage Learning Technologies, and Yoany Beldarrain, of Florida Virtual School, examine the issue of anonymity in online instruction. While anonymity is an important issue in teaching and learning, the authors frame this chapter in a larger context, considering both issues pertinent to learning, as well as broader social, cultural and educational implications.

**Section III** presents broad multi-disciplinary perspectives on online instructional modeling by including models and best practices that extend beyond the traditional concepts of teaching and learning.

The section opens with an investigation by Brian Cameron, of Pennsylvania State University, on the relationship between online gaming, cognitive style, and feedback type on academic achievement. Gaming has become an accepted aspect of life for the Net Generation and Cameron addresses this issue by investigating how teachers can utilize gaming to model effective teaching and learning in an online environment.
In Chapter XIII, Bruce J. Diamond, of William Paterson University, and Gregory M. Shreve, of Kent State University, consider another unique but pressing issue: ways to facilitate the learning of students with special needs. The authors offer an information technology adaptive model for helping students, especially those with learning disabilities or deficiencies in basic skills or academic achievement, to learn more effectively using an adaptive hypermedia system.

In Chapter XIV, Kenneth L. Miller, of Youngstown State University, and Susan M. Miller, of Kent State University, discuss another specialized issue: online supervision in clinical training. Although the focus in this chapter is on advantages and challenges of cyber-supervision in the clinical training of counseling professionals, the issues are largely generalized to cyber-training in a range of professional fields, academic and medical. The authors support their application of cyber-supervision across multiple disciplines with an examination of two models: the Cognitive-Behavioral model and Integrative-Developmental model.

Another inter-disciplinary application is developed by Michael F. Russo, Sigrid Kelsey, and Maud Walsh, at Louisiana State University, in Chapter XV. They posit a model integrating information literacy into a discipline-specific content area, partnering the university library partners with the instructor. E-struction has the multiple goals of introducing learners to electronic (library) resources and teaching them the basic concepts of information literacy in the context of any discipline-specific content area.

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REFERENCES


