Preface

There is not one simple approach to using technology, especially one as unique as the World Wide Web. As innumerable people rush to "become a presence" on the Web, educators too feel the pressure to become Web-savvy. This press to make classes, and indeed, entire degrees available through the Internet, has led to a plethora of flashy, often pedagogically unsound sites.

This book represents a compendium of current international thought and issues on assessing, designing and delivering instruction via the Web. There are many books and articles providing quick fixes on the mechanics of how-to put your classes on the Web, and ignore or omit matters of instructional import. A major concern of many professional educators is the quality and efficacy of the instruction being delivered in this manner. Public schools are required to use textbooks and other instructional materials that have been stamped with a "seal of approval" regarding content and pedagogy. However, an increasing number of instructors, at all grade levels, are using Internet sites as both content sources and delivery mechanisms: sites that have not been evaluated by state organizations and commissions to assess theoretical and instructional appropriateness.

How should instructional delivery be modified for Web access? What independent cognitive responsibilities have been placed uniquely on the learner? How may we ensure that Web instruction is more than an electronic correspondence course?

The contributors to this collection offer a variety of points of view dealing with Web site instructional design issues and the cognitive impacts of learner interactions with the Web. The chapters range from theoretical analyses of student-centered learning to guidelines reflecting appropriate educational constructs. Due to the nature of the topic, there is no obvious way to organize the content. Therefore, the chapters are arranged alphabetically by first author.

Bastiaens and Martens from the Open University of the Netherlands (Conditions for Web Based Learning with Real Events) argue for the importance of real cases for independent learning. An Electronic Performance Support System (EPSS), based on the Web, provides students the opportunity to work in a professional context as opposed to the artificial

environments in classrooms. They provide excellent explanations of terms and impacts of issues related to real world learning.

Berg, Collins, and Dougherty of the University of Maryland, Baltimore Campus (Design Guidelines for Web-Based Courses) discuss design elements and considerations of students and instructors for three types of courses – Web supplemented, Web enhanced and Web based. They emphasize prototyping using input from representative users, most of whom have learned their Web skills outside of academia.

Berry, University of Pittsburgh, (Cognitive Effects of Web Page Design) presents an overview and background of major theoretical and design issues. Of major importance are his suggestions for future research topics such as text presentation, windowing, visual complexity, browser mentality (instructional intent), wayfinding and cognitive load and effort.

Bonk, Cummings, Hara, Fischler, and Lee from Indiana University (A Ten Level Web Integration Continuum for Higher Education) clearly explain and analyze instructional considerations to help faculty integrate the Web in instructional situations. Their continuum offers guidelines for an instructor at any level of Web commitment.

Fisher from Marquette University (Implementation Considerations for Instructional Design for Web-based Learning Environment) using a model of staff development for middle school teachers, discusses the importance of aiding learners in transforming information into meaningful learning experiences. She provides authentic assessment rubrics that promote the use of a range of approaches enabling students to communicate and make meaning in collaborative Web learning environments.

Leflore of North Carolina A&T (Theory Supported Design Guidelines for Web-Based Instruction) discusses how to present to-be-learned material and how students are required to interact with and interpret the material from three perspectives - Gestalt, cognitive and constructivist. She presents guidelines with examples of Web instruction and activities based on these theoretical bases.

Lockee, Danielson, and Burton, Virginia Technical University, (ID and HCI: A Marriage of Necessity) address user interface considerations using the traditional instructional design linear model. They emphasize the greater importance of the interface for Web-based courses and present a number of factors for the instructional designer.

Lowther, Jones and Plants from the University of Memphis, (Preparing Tomorrow's Teachers to Use Web-Based Education) present an organiza-

tional scheme for preparing teachers using levels of Web integration and Web information literacy (browser, Boolean searches, and Web technical skills). They close with suggestions and guidelines for some instructional approaches and recommendations for integrating the Web into teacher education programs.

Maddux and Cummings of the University of Nevada, Reno, (Developing Web Pages as Supplements to Traditional Courses) present pedagogically sound guidelines for instructors who are without support services, yet desire to incorporate the Web in their classes. Their lists of example Web sites should prove very helpful to novice site designers.

Miller and Miller from Texas A&M University-Commerce (Theoretical and Practical Consideration in the Design of Web-Based Instruction) contend a correspondence between cognitive models of memory and the structure of the Web and present suggestions on how to apply this similarity in planning instruction on the Web. They emphasize the relationship between theory and practice in designing Web course structure, media and communications.

Oliver and Herrington, Edith Cowan University, Australia, (Using Situated Learning as a Design Strategy for Web-Based Learning) present an instructional design model for situated learning. Their model describes and applies the integration of the elements of situated learning (content, learning activities and learning support) to a Web-environment.

Persichitte from the University of Northern Colorado (A Case Study of Lesson Learned for the Web-Based Educator) relates first hand experiences with problems (and solutions) of conducting a Web-based class. Throughout her narrative, she emphasizes the importance of the instructional design process in preparing a Web-course.

Powers and Guan, Indiana State University, (Examining the Range of Student Needs in the Design and Development of a Web-Based Course) argue that a needs assessment must consider more than discrepancies or gaps. Learners' technology skills, interpersonal concerns and possible physical or learning disabilities are factors that must be taken into account in designing instruction for the Web.

Rogers of Bemidji State University (Layers of Navigation for Hypermedia Environments: Designing Instructional Web Sites) discusses characteristics of learners and of Web sites. She promotes the importance of considering the interactions of users and sites as a whole in order to provide appropriate structures that enable learners to learn.

Smith-Gratto, North Carolina A&T, (Strengthening Learning on the

Web: Programmed Instruction and Constructivism) addresses the role of programmed instruction in designing Web sites for building knowledge bases which learners may then manipulate in a constructivist manner. She argues that although the Web promotes open-ended explorations, exploration is not enough - learners need to be focused toward achieving outcomes.

Spector and Davidsen from the University of Bergen, Norway, (Designing Technology Enhanced Learning Environments) offer a well-constructed argument for the use of models in designing for complex learning. Using an instructional design methodology called model-facilitated learning (MFL), they present six basic principles to guide the development of designing cognitively engaging interactions and activities around the content of system dynamics.

Hopefully, this collection of ideas by international authors will prove thought provoking and engaging. Comments, contentions, confutations and complaints are welcome.

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