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BOOK REVIEW/COMPTE RENDU

Online Education Using Learning Objects

R. McGreal (Ed.)
London: RoutledgeFalmer, 2004, 361 pages

This book brings together contributions by key leaders involved in the development and research of Learning Objects (LOs) and LO systems. Edited by Rory McGreal, *Online Education Using Learning Objects* provides a comprehensive summary of current issues and challenges involved in the development and distribution of LOs in higher education. This book will be of interest to faculty members involved in developing and teaching online courses, instructional designers, researchers interested in LOs, and in particular those involved in the technical aspects of the use and implementation of LOs.

The book has 26 chapters, which are organized in five parts: Learning Objects and Metadata; Constructing and Creating Learning Objects; Contextualization and Standardization of Learning Objects; Learning Object Profiles, Applications and Models; and From the Semantic Web to EML and Instructional Engineering. Each section is prefaced by an overview by the editor, which helps guide the reader through a complex and technically rich discussion. The book begins with a helpful list of acronyms and abbreviations to assist the nontechnically inclined reader with technical terms that are used throughout the chapters. An appendix includes a summary of definitions and terms related to metadata and LOs, a list of international organizations involved in developing metadata standards for LO development, software solutions, and a list of LO repositories. Throughout the book the authors provide many relevant online resources for further exploration.

In the introduction, McGreal outlines a number of issues including the need to define LOs: "One would expect that a book about LOs would be able to provide the readers with a commonly accepted definition. At present, this is proving very difficult" (p. 6). Examining four definitions, he proposes that "Learning objects can be defined as any reusable digital resource that is encapsulated in a lesson or assemblage of lessons grouped in units, modules, courses and even programmes" (p. 13). Part One introduces the reader to LOs and includes a discussion of the purpose and

potential of LOs (Downes) and a history of LOs and various definitions of learning objects (Sosteric & Hesemeier). Koper and van Es note, "The major problem with the LO model as it has been applied until now, is that LOs are not typed to their usage in the context of a unit of learning" (p. 45). This observation sets the stage for a significant amount of the content of the remainder of the book, which focuses on the description of various approaches to developing international standards for LOs (in particular, metadata), required elements of metadata necessary to realize the full potential of LO sharing and reuse, LO repositories and distribution systems, and software solutions and strategies.

Part Two, which includes chapters that identify the importance of instructional design, will be of particular interest to instructional designers and faculty who teach online. Ally, for example, suggests an approach to developing LOs that faculty developers and instructional designers will find useful. While focused on LOs, several contributors throughout the book include valuable summaries and reviews of essential elements of instructional design. The importance of evaluation is also emphasized. Parts Three and Four deal with the more technical aspects of metadata and refining metadata classification and software systems with the goal or realizing the potential of the global exchange of LOs. These chapters contain detailed technical descriptions of approaches to metadata management and systems. Although technically focused, they also include important information about emerging models and software architecture for sharing LOs. For example, Richards, Hatala and McGreal provide a detailed summary of "Pool, Pond, and Splash," an architecture for a network of LO repositories. Part Five introduces the reader to emerging concepts and a preview of the semantic Web and its potential to contribute to e-learning.

Although the title suggests a broader scope, *Online Education Using Learning Objects* focuses primarily on identifying emerging challenges and initiatives that exploit the future potential of LOs and LO repositories, and on detailed technical descriptions of issues and solutions for improved metadata tagging, emerging international standards, and technical requirements of LO software systems. The importance of instructional design and the integration of pedagogical elements to LO classification (metadata) systems is emphasized throughout the book. Educators who are less interested in the technical aspects of LOs and metadata may find some chapters challenging to read. Nevertheless, the book provides important and detailed information about the complex and emerging potential of LOs. Additional content that would enhance this important contribution include: more examples of LOs; practical instructional design suggestions on how to construct reusable LOs; a discussion of strategies for dealing with concerns about intellectual property rights; the implica-

tions for teaching skills and faculty development; and organizational, policy, and resource strategies for the development and exchange of LOs.

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