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Multimedia-Based Instructional Design: Computer-Based Training, Web-Based Training, and Distance Learning

William W. Lee & Diana L. Owens, 2000
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This book is published by Jossey Bass Pfeiffer. The book/CD-ROM package on how to design and develop multimedia-based instructional design, presenting that the same instructional design process can be used for all media. The CD-ROM contains job aids and tools, and demo software. It is useful for course developers who are beginning their first multimedia project. Lee is director of performance technology for American Airlines Training Group in Fort Worth, Owens is a consultant in multimedia training.

The book has 29 chapters and divided into four parts. The first part covers the thirteen chapters at the multimedia needs assessment and analysis. Chapter 1 introduces multimedia needs assessment and front-end analysis. Chapter 2 discusses types of need and data-collection techniques. Chapter 3 addresses types of front-end analysis. The next nine chapters deal with the nine types of front-end analysis. They also explain how all of the data collected during front-end analysis fits into the design of the project. Chapter 4 describes audience analysis that the target population is for the solution, and their demographic as well as learning needs. Chapter 5 provides technology analysis which the type of technology available and technological considerations in delivering the solution. Chapter 6 describes the environmental considerations in delivering the solution that is called situation analysis. Chapter 7 presents task analysis that the physical and mental requirements for getting the job done. Critical incident analysis describes tasks require that training or information be provided to the target audience in chapter 8. Chapter 9 deals with objective analysis which the performance and instructional objectives for the solution and making the distinction between the types of objectives as well as when and where to use them; also their impact on the content as well as delivery media. Chapter 10 discusses selecting the most appropriate media for a solution. Chapter 11 describes extant data analysis that is materials are available and which need to be developed basically or making a "build-or-buy" decision. Chapter 12 highlights cost analysis. Chapter 13 also presents a method for reducing the time required to complete an analysis without sacrificing quality called rapid analysis method.

The second part includes the six chapters at the multimedia instructional design. Chapter 14 introduces multimedia instructional design. The design phase uses conclusions from the project assessment an analysis phase to build a road map for development. The next five chapters present steps and activities that will guide us for our project. Project scheduling at the activity level is often the result of design decisions and compromises made on the basis of the cost, availability, and capability of key personnel and tools in chapter 15. Chapter 16 suggests typical roles and responsibilities that are assigned to activities on a multimedia instructional design and development team. Chapter 17, media specification describes standards and design for multimedia elements such as theme and interface design and functionality, writing style and grammar guidelines, feedback and interaction standards, video and audio treatments, text design and standards, graphic design and standards, animation and special effects. Chapter 18 presents information on how to structure and group content so that it is well organized, covers the objectives, and is written to the appropriate level of skill and knowledge. The final planning step of multimedia instructional design is establishing the configuration control plan for developing course materials in chapter 19.

The third part covers the five chapters at the multimedia development and implementation. Chapter 20 introduces multimedia development. Whatever the type of multimedia, the basic development principles remain the same: Establish a framework of templates, models, development specifications, and standards; develop the media elements that fit into the framework; review and revise the product; and finally implement the finished product. Chapter 21 examines common development components. There are four stages in development methodology. Preproduction, production, postproduction and quality review, and delivery or implementation. These are also multimedia development team member's roles. Chapter 22 presents four activities for developing computer-based learning environments. These are creating storyboards, creating and assembling media elements, performing online reviews, delivering and implementing the course. Chapter 23 elaborates stages for developing Internet, Intranet, Web-based, and performance support learning environments. Chapter 24 contains activities in the procedure developing an interactive distance broadcast course, whether by satellite or over telephone lines.

The fourth part consists the five chapters at the multimedia evaluation. Chapter 25 introduces multimedia evaluation. This part of this book explains summative evaluation from two perspectives. These are developing accurate measurement instruments such as tests and observation instruments, and applying appropriate statistical measures to the instruments for the purpose of analyzing results. Chapter 26 summarizes purpose of evaluation according to organizational and individual needs. Chapter 27 clarifies three activities for measures of validity. These are determining the level and type of validity required, determining validate measurement instruments, and documenting your decisions. Chapter 28 critics five stages for instrument development and measurement plan. Select the types of measurements, develop the measurement instruments, calculate the length of each instrument, calculate the weight of each item, and decide when the instruments should be administered. Finally chapter 29 tries to clarify collecting and analyzing data. There are five activities in this process. Set up the database, develop an evaluation plan, collect and run the data, interpret the data, and document your findings.

The book gives detailed descriptions of how to develop multimedia training courses. Therefore, the contents of the chapters present theoretical issues and practical considerations. Each chapter consists a step-by-step process for completing multimedia training and includes action tables listing activities required at each phase. In this respect, the book is a useful guide for who are interested in instructional technology, instructional design, especially graduate students, practitioners in the field, and organizations in the multimedia-based instructional design and related fields. Overall conclusion is that it is highly usable to beginning instructional design students, including those whose first language may not be English. Because, book is well written and easy to read. Furthermore, the use of tables and figures to explain the written text is a benefit to the beginning instructional designer.

The book had not contained list of tables and figures in the contents. It would be make the book even more helpful. In addition, if real-life scenario in the beginning of the each chapter may be took place, it would have been more clarify the present chapter. More examples of key concepts would have been helpful to the reader.

The strengths of Multimedia-Based Instructional Design: Computer-Based Training, Web-Based Training, and Distance Learning is that it attempts to fill a gap in multimedia-based instructional design literature. Revised and updated second edition of this book may be purchased April 2004. This new edition includes automated tools, updates on standards, and each chapter.

Reference: Lee, W.W. & Owens, D.L. (2000). Multimedia-Based Instructional Design: Computer-Based Training, Web-Based Training, and Distance Learning. San Francisco, CA: Jossey-Bass/Pfeiffer.
http://www.pfeiffer.com/WileyCDA

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William W. Lee is director of educational research and development at the National Headquarters of the American Heart Association in Dallas, Texas, providing leadership and consulting in the integration of technology into training as well as the design, development, and evaluation of training. Dr. Lee teaches at the University of Texas at Dallas in the Department of Management and Professional Development and the University of Oklahoma in its Professional Development Department. He is a well-known speaker at regional, national, and international conferences and was the 1997 recipient of the Distinguished Achievement Award from the Dallas, Texas, chapter of ASTD and the Penn State University College of Education Alumni Association Leadership and Service Award for his writing and speaking.

Diana L. Owens

Diana L. Owens is a consultant and principle owner of Training Consulting Softek, an independently owned company specializing in multimedia training development that has worked with clients such as Verizon Telecommunications, EDS, American Airlines, Blockbuster Video, and TGI Friday's Corporation, among others. Owens was previously employed by EDS, Action Systems, Multimedia Learning, Inc., CAE Link, and the U.S. Air Force.