Fourth Edition

The ID CaseBook

Case Studies in Instructional Design

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FOURTH EDITION

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To Dave: This one's for you!
PE

To MJJ: Thanks for driving the getaway car.
JQ

To CM, NM, and RM, all my best fellas.
KG

**And a collective acknowledgement to David Jonassen,
whose legacy is imprinted in this text.**
PE, JQ, and KG

Foreword

I doubt that many instructional design and technology faculty would argue with the notion that the preparation of instructional design (ID) professionals is no easy task. The skill set required to be successful at ID is extensive and complex, mandating not only conceptual knowledge of the design process, but also procedural knowledge of how to go about executing the process in a variety of contexts and for an endless array of clientele. Designers must demonstrate analytical skills to determine the learning and/or performance need and understand how to select and develop an intervention to address that need in a way that is culturally and contextually appropriate. The skills needed for this level of analysis and subsequent solution planning and creation cannot be developed simply from learning about the principles of instructional design. To truly learn the ID process and be able to apply the conceptual, procedural, and analytical skills in an effective way necessitates learner engagement in authentic practice with appropriate feedback. Although these ideas are reflective of the basic principles of ID, they are not so easy to carry out in the context of the typical ID course. Within the constraints of the semester, students may have the good fortune to work on a single project for a real client, but to gain the kinds of problem-solving skills and design competencies needed for broad application, such limited experience is not adequate. In this fourth edition of the *ID CaseBook*, Ertmer, Quinn, and Glazewski provide an important contribution toward the preparation of ID professionals, because their work supports this significant need for learners to apply newly learned skills and knowledge to solve real-world ID problems. One of the aspects of the *ID CaseBook* that I find most impressive is the comprehensive manner in which it serves its various stakeholders—students, instructors, and the instructional design and technology (ID&T) community.

For the learner, the *ID CaseBook* offers the chance to apply what seems in early, introductory classroom experiences to be a straightforward and logical process to the sometimes messy and ill-structured challenge of addressing instructional needs. As noted in the text, the practice of ID is a problem-solving process, filled with decisions that are best informed by what we know about how people learn. Also, as learners begin to delve into the ID process, they benefit by encountering the many logistical issues posed by developing solutions for the targeted learning environment, as well as the wide variety of learner groups with differing characteristics, prior knowledge, experiences, and belief systems whom they seek to assist. Learners of ID would also be well served by confronting the project management process that underpins the development of ID solutions, and all of the details and often-unpredictable stumbling blocks that can throw a wrench in even the best project plans. By engaging in the ID process within the scenarios included in the *ID CaseBook*, students are placed at the center of all of these issues, supporting the development of their own expertise in a way that will transfer more readily to the workplace, no matter the context.

For the instructor, the *ID CaseBook* provides an ID teaching framework that promotes a deeper level of learning than is possible with a more didactic approach. Although the cases included in the fourth edition are sufficiently open-ended to encourage multiple

solutions, the guidance provided on using cases for learning is helpful to the instructor (as well as the student) who may be new to using this approach. The use of cases and all of their inherent dilemmas can seem daunting from a teaching perspective; however, the authors have done a terrific job, providing specific strategies for how to incorporate the use of cases into the context of the ID course. In addition, the compendium included in the ID *CaseBook* exemplifies a great breadth of learning outcomes, content types, intended audiences, and targeted environments that will enhance the instructor's ability to provide a pragmatic and comprehensive learning experience. Instructors will also appreciate the discussion questions provided with each case, as they can help center the discussion around key issues. Through the organization of the text and the thoughtful ancillary materials, the authors have created an effective "performance support system" for instructors who wish to utilize the case-based approach to teaching ID.

For the instructional design and technology community, the *ID CaseBook* serves as an exemplar of empirically grounded, student-centered learning. The power of case-based instruction has been demonstrated through extensive research, as is also reflected in the prior and current work of these authors. Ertmer, Quinn, and Glazewski have produced another significant contribution toward the advancement of the ID&T profession, one that is based on sound theory and long-standing evidence of effective instructional design. We are fortunate to be able to benefit from their ongoing work in this area and thank them for helping us prepare the next generation of instructional designers.

Barbara B. Lockee
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Preface

Education within the professions isn't always as effective as we would like. Within a number of professions, including instructional design (ID), educators often report that their graduates are unable to apply what they've learned in school to the solution of authentic problems in practice. The consistent theme in these reports is the "inert knowledge problem" (Bransford, 1993, p. 174, paraphrasing Whitehead), which refers to graduates who have acquired domain knowledge but who are not adept at applying their knowledge to the solution of common problems in the discipline (Stepich & Ertmer, 2010).

Instructional design educators have recognized this problem for a long time and have worked to integrate the development of practical skills with conceptual knowledge in a variety of ways. For example, Quinn (1994) and Woolf and Quinn (2009) reported on an approach to learning and teaching ID in which small teams of students worked under the supervision of an instructor to design instruction for a real client. Rowland, Parra, and Basnet (1995) created a "design studio" (p. 231) in which students worked collaboratively to solve ID problems that gradually increased in complexity. Jonassen and Hernandez-Serrano (2002) provided students with stories that had been elicited from experienced instructional designers as a way to help them gain "conditionalized" knowledge (Bransford et al., 2000, p. 43).

In each of these examples, students were asked to apply their emerging knowledge of instructional design within the context of "real-world" situations, with their inherent messiness left intact. This allowed students to develop their technical skills while working on realistic, complex problems.

Similar to these examples, the case teaching approach used in this book enables ID educators to contextualize their students' mastery of ID skills by conveying the complexity and ill-structured nature of ID. In addition to the technical skills and knowledge needed to solve these problems of practice, students also gain the skillfulness needed to operate creatively and effectively in ambiguous, uncertain, and open-ended contexts. Case-based teaching and learning encourages students to focus on issues in addition to specific ID tasks and allows them to explore, in depth, the range of problems occurring within a given situation. In addition, case-based learning enables students to experience multiple, varied problem situations to a much greater extent than would be possible through a single internship or practicum experience. This, then, allows students to continually reflect on their emerging knowledge as they examine ID issues within a broad range of settings.

What Is a Case Study?

Wasserman described a case study as a "darn good story" (1994, p. 44). According to Barnes, Christensen, and Hansen (1994), a case study presents students with a "partial, historical, clinical study of a situation which has confronted a practicing administrator or managerial group" (p. 44) and asks them to provide solutions to the problems presented

in the situation through analysis, reflection, and discussion. In this text, we use an approach to case studies that is based on the business school model—that is, case studies are problem-centered descriptions of design situations, developed from the actual experiences of instructional designers.

The cases in this book are designed to be dilemma oriented: each case ends before the solution is clear. Students are expected to evaluate the available evidence, to make reasonable assumptions as necessary, to judge alternative interpretations and actions, and, in doing so, to experience the uncertainty that commonly accompanies design decisions. In particular, we hope that by analyzing the cases presented in this book, students will learn how to identify ID problems and subproblems; to recognize the importance of context in resolving such problems; and to develop, justify, and test alternative plans for resolving ID problems.

Organization

The ID CaseBook is divided into two parts. In Part I, "The Case-Learning Process: Strategies and Reflections," we provide students with suggestions and strategies for how to approach learning from case studies. Although students are typically excited about using cases in their ID courses, they often are apprehensive as well, probably because they are unfamiliar with this approach. We have found that providing helpful suggestions up front can considerably lessen students' initial concerns.

Part II includes 30 case studies situated in a variety of educational and business contexts. Case titles are categorized by audience/context. In addition, the matrix (included at the end of this preface) allows readers to see, at a glance, the variety of content areas addressed by the cases. This matrix helps instructors, particularly, select cases that are most appropriate to their students' needs. (Note: The Instructor's Resource Manual provides additional information about the issues and subissues addressed in each case.)

New to This Edition

- The fourth edition of *The ID CaseBook* consists of 30 instructional design case studies, including 10 new cases as well as 20 of your favorite cases from the previous editions.
- In general, the new cases in the book are longer and more complex than many of the earlier cases, and include more case details, artifacts, and dialogue.
- Together, the new and "returning" cases provide students with wonderful opportunities to examine a variety of demanding situations involving a wide range of contents, contexts, and audiences.
- Several new cases are situated in international contexts and deal with diverse audiences (e.g., nursing students, English language learners, health care workers, and teenage driver education students).
  We have also increased the number of cases dealing with issues related to game-based learning, Web 2.0 tools, and the design and evaluation of online instruction.

As in the previous three editions, each case consists of a case narrative and a set of questions designed to invoke ID practice. The *case narrative* includes relevant background

information for the case, such as the problem context, key players, available resources, and existing constraints. In addition, each case includes *relevant data* presented in a variety of forms and formats. There are two sets of discussion questions at the end of each case to stimulate students' thinking and to provide a focus for class discussion. The first set of questions—*Preliminary Analysis Questions*—asks students to identify and discuss issues from the case, to consider the issues from multiple perspectives, to develop a plan of action to resolve problems, and/or to specify possible consequences resulting from their recommended plans. The second set of questions—*Implications for ID Practice*—requires students to think more broadly about the issues presented in the case from the point of view of ID theory and practice.

As was true for the third edition, we've made it easy for instructors to identify and select relevant cases for their students. For example, each case title includes a subtitle that reflects the content of the case or the context in which it occurs. Sometimes these subtitles also provide information about the specific issues in the cases without giving away any of the more subtle details.

Perhaps even more helpful to instructors than the addition of case subtitles, however, is the organization of the text. Cases are combined into sections, with each section representing the specific context in which that group of cases occurs. For example, the first section of the text contains 7 cases that are situated in K–12 environments, followed by a section containing 11 post-secondary cases. The final section includes 12 cases situated in a corporate or manufacturing environment. This organization helps instructors identify which cases are most relevant to their needs. As noted earlier, a matrix pulls all of this information together, making it easy for instructors to determine which cases are appropriate for their students. Finally, we have expanded Part I, "The Case-Learning Process: Strategies and Reflections," to introduce readers to learning from cases using case-based reasoning and to provide guidance on selecting strategies for completing case analyses.

Instructors will be pleased to know that all cases, including those that appeared in the previous edition but are no longer included in the fourth edition, can be accessed through Pearson's Custom Library. This site enables instructors (and students) to order only the specific cases they would like to use in their courses. This will be particularly helpful to those who use a limited number of cases and don't typically require their students to purchase the book.

Ancillaries

The *Instructor's Resource Manual* for this book is available in a downloadable, digital format at the Instructor's Resource Center (IRC) at www.pearsonhighered.com. If you have any questions regarding access the IRC, please contact your local Pearson sales representative.

The *Instructor's Resource Manual* includes learning objectives, background information, and additional references for each case. Specifically, the IRM presents:

- *Case Matrix:* A summary matrix, similar to that located at the end of the preface, but with two additional columns that allow instructors to see, at a glance, the particular issues and subissues of each case

- *Teaching Suggestions:* Ideas for instructors regarding the different ways the cases can be used with different levels of students
- *Case Overview:* A brief description of the case, including the "big idea" students should glean from the case
- *Case Objectives:* The specific focus of the case (the supporting concepts/principles learners should use in analyzing the case issues); the knowledge, skills, and/or attitudes students should gain from their case analyses and discussions
- *Debriefing Guidelines:* Suggestions from the case authors regarding how to think about the case

It is our hope that the combined features of *The ID CaseBook* and the Instructor's Resource Manual provide both students and instructors with a challenging and rewarding learning experience. If you or your students have suggestions for future editions, we'd love to hear from you! Our e-mail addresses are pertmer@purdue.edu, quinn@oakland.edu, and glaze@indiana.edu.

Acknowledgments

References

Barnes, L. B., Christensen, C. R., & Hansen, A. J. (1994). *Teaching and the case method: Text, cases, and readings*. Boston: Harvard Business School Press.

Bransford, J. D. (1993). Who ya gonna call? Thoughts about teaching problem solving. In P. Hallingen, K. Leithwood, & J. Murphy (Eds.), *Cognitive perspectives on educational leadership* (pp. 171–191). New York: Teachers College Press.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.) (2000). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academies Press.

Jonassen, D. H., & Hernandez-Serrano, J. (2002). Case-based reasoning and instructional design: Using stories to support problem solving. *Educational Technology Research and Development, 50*(2), 65–77.

Quinn, J. (1994). Connecting education and practice in an instructional design graduate program. *Educational Technology Research and Development, 42*(3), 71–82.

Rowland, G., Parra, M. L., & Basnet, K. (1995). Educating instructional designers: Different methods for different outcomes. In B. B. Seels (Ed.), *Instructional design fundamentals: A reconsideration* (pp. 223–236). Englewood Cliffs, NJ: Educational Technology Publications.

Stepich, D. A., & Ertmer, P. A. (2010). "Teaching" instructional design expertise: Strategies to support students' problem-finding skills. *Technology, Instruction, Cognition, and Learning, 7*, 147–170.

Wasserman, S. 1994. *Introduction to case method teaching: A guide to the galaxy*. New York: Teachers College Press.

Woolf, N., & Quinn, J. (2009). Learners' perceptions of instructional design practice in a situated learning activity. *Educational Technology Research and Development, 57*(1), 25–43.

Case Matrix

K–12 CONTEXT

| Title	Subtitle	Content	Audience/Context
1. Scott Allen	Designing Learning Objects for Primary Learners	Constructivist and simulated learning environments	K–12 Australian learners
2. Michael Bishop	Implementing Gaming Technologies in Traditional K–12 Contexts	Middle School Science (genetics)	K–12 teachers
3. Denny Clifford	Designing Learning Experiences for Middle School Science Teachers	Science teaching	Middle school teachers
4. Paul Lindley	Developing a Video Game for History Education	Internment of Japanese-Americans during World War II	Alternative high school students
5. Sandra Sanchez and Vincent Peters	Helping a School Prepare for a New Mandate	Common Core Standards	K–12 teachers
6. Tina Sears	Evaluating the Impact of a K–12 Laptop Program	Technology integration and impact	Fifth-grade teachers
7. Maya Thomas	Implementing New Instructional Approaches in a K–12 Setting	Pre-algebra for at-risk students	Seventh-grade learners
8. Jackie Adams	Evaluating a Federally Funded Faculty Training Program	Faculty development for technical educators	University and high school teachers
9. Jennie Davenport and Pedro Lopez	Converting a Powerful Workshop to an Online Format	HIV/AIDS prevention	Adult gay and bisexual men
10. John Falkin	Designing an Online Graduate Seminar	Graduate social work education	Social work faculty
11. Malcolm Gibson	Designing Authentic Online Experiences for Adult Learners	Computer science	Professional certification
12. Helen Ginn	Evaluating a New Driver Training Program for Teenagers	Converting content from face-to-face to online settings	Drivers' training for high school students
13. Lindsey Jenkins	Piloting Case-based Learning in a Blended Learning Nursing Curriculum	Undergraduate nursing courses	Nursing school faculty
14. Mark Jones and Sue Gulick	Meeting Challenges in the Design and Delivery of a University-wide First-year Experience Course	First-year experience program	First-year university students
15. Pat Kelsoe and Jean Fallon	Implementing Innovation within an Established Curriculum	Pediatrics education	Medical school
16. Beth Owens	Addressing Multiple Perspectives and Constraints in ID Practice	Culinary arts program	Professional education

K–12 CONTEXT (*Continued*)

Title	Subtitle	Content	Audience/Context
17. Camille Suarez	Redesigning Curriculum for Hybrid Training in a Public Health Setting	Elder home safety	Outreach social workers Elder citizens public health setting
18. Frank Tawl and Semra Senbetto	Designing Curriculum for Southeast Asian Trainers	ID training	Asian Training Institute ID consulting
19. Abby Carlin	Documenting Processes in a Manufacturing Setting	Equipment operation	Manufacturing
20. Iris Daniels	Cross-Cultural Challenges in Designing Instruction	CBT for manufacturing management software	International corporate consortium
21. Lynn Dixon	Designing an Interactive Kiosk to Celebrate World Wetlands Day	Wetlands	Visitors to aquarium
22. Craig Gregersen	Balancing a Range of Stakeholder Interests When Designing Instruction	Product liability training	Corporate ID consulting
23. Scott Hunter	Developing Online Assessment in an International Setting	Sales consultant certification	Automobile industry
24. Margaret Janson	Developing Learning Objects for Adult Learners	Incorporating interactivity into learning objects	Oil exploration industry
25. David Jimenez	Performance Improvement of Engineers	Oil drilling software	Natural gas industry ID consulting
26. Davey Jones	Designing an Electronic Performance Support System	Retail support tool	Retail
27. Diane King	Rapid Design Approach to Designing Instruction	Team leader training	Corporate ID consulting
28. Natalie Morales	Managing Training in a Manufacturing Setting	On-the-job training and certification	Manufacturing
29. Andrew Stewart	Managing Consulting Activities in an Evaluation Context	Transportation training	Corporate ID consulting
30. Jack Waterkamp	Managing Scope Change in an Instructional Design Project	Software development training	System administrators, software trainers

About the Authors

Peggy A. Ertmer is Professor of Learning Design and Technology at Purdue University. She continues to love teaching with case studies and is finding more and more connections between case-based learning and the development of ID expertise. Peg actively mentors both students and peers, including pre- and in-service teachers, in the use of case-based and problem-based learning (PBL) pedagogy, online teaching and learning, and self-regulated learning skills.
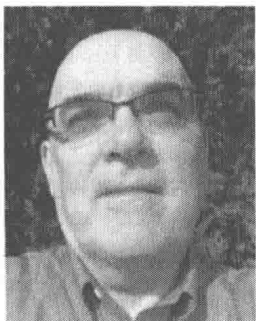
James A. Quinn is Associate Professor of Education at Oakland University, where he teaches courses in instructional design. He continues to enjoy teaching with cases and grappling with the considerable challenges of doing so. Jim is very happy that the *ID CaseBook* has reached its 15-year milestone and hopes that it continues to be a resource for ID students and instructors for many more years.

Krista D. Glazewski is Associate Professor of Instructional Systems Technology at Indiana University. Her research interests include supporting complex problem solving in problem-based learning. She works most predominantly with K–12 teachers, supporting them as they transition their instructional approaches and their students to more open-ended environments.

Contributors

Sue Bennett is Associate Professor in the University of Wollongong's Faculty of Education with 20 years of experience designing technology-based projects for school and university education and for industry training. Sue's research investigates how people engage with technology in their everyday lives and in educational settings, and she has a particular interest in design thinking.

M. J. Bishop is Associate Professor in Lehigh University's Teaching, Learning, and Technology Program. Her teaching and research interests include examining how various instructional media and delivery systems might be designed and used more effectively to improve learning. She has also explored ways that instructional technologies might be employed to facilitate students' academic and social transition from high school to college.

Laurie Brantley-Dias is Associate Professor of Learning Technologies at Georgia State University. Her current scholarship and teaching focuses on examining teachers' knowledge for technology integration, designing web-enhanced instruction for K–12 audiences, and using video-based reflection for teachers' professional development. She has worked as an instructional designer, trainer, and/ or consultant for K–12, corporate, and higher education clients.

Katherine S. Cennamo is Professor of Learning Sciences and Technologies at Virginia Tech. With over 30 years of experience in designing instructional products, her work focuses on the nature of design practice and how to best prepare instructional designers for professional practice. She is co-author of the textbooks *Real World Instructional Design* and *Technology Integration for Meaningful Classroom Use*.

Theresa A. Cullen is Associate Professor in Instructional Psychology and Technology at the University of Oklahoma, where she coordinates the undergraduate technology integration courses. Her research interests include girls' interest in STEM careers and how pre-service teachers use social networks to prepare for their future classrooms.

Melissa J. Dark is a Professor in Computer and Information Technology. Dr. Dark has worked on several science, math, engineering, and technology curriculum and instruction projects with business and industry, government, and higher education. She has extensive experience in needs assessment, instructional design, development, and evaluation of STEM education programs and initiatives.

Walter Dick is Professor Emeritus of Instructional Systems at Florida State University. His major interests are instructional design and evaluation. He is the co-author of the widely used text *The Systematic Design of Instruction*. Walter lives with his wife in Pennsylvania and Alabama.

Aaron Doering is Associate Professor and Co-Director of the Learning Technologies Media Lab at the University of Minnesota where he designs, develops, and researches numerous forms of technology that support teaching and learning.

Stephen Dundis is Associate Professor Emeritus in the Human Resource Development Program at Northeastern Illinois University. He has taught courses in instructional design, needs assessment, and computer-based instruction at both the graduate and undergraduate level. His research interests include design issues in online learning/support, virtual collaboration and problem-solving, and case- and apprenticeship-based instructional strategies.

Joanna C. Dunlap is Associate Professor and Assistant Director for Teaching Effectiveness at the University of Colorado Denver. Joni's interests focus on the use of sociocultural approaches to enhance learners' development and experience in postsecondary settings. Recently, her work has revolved around online education, specifically social presence, student engagement, and social media and networking tools to support learning.

Gary Elsbernd lives in Topeka, Kansas, with his wife and three children. With more than 20 years of experience in the field of performance technology, Gary holds a patent on methods around electronic performance support systems. Gary is the lead web and mobile user experience architect for a leading insurance company in Kansas City, Missouri.

Xun Ge is Associate Professor in the Department of Educational Psychology, College of Education at the University of Oklahoma. Her primary research involves designing effective instructional scaffolds, tools, and open learning environments to support students' reasoning, ill-structured problem-solving, and self-regulated learning. She has collaborated extensively in research projects with faculty from various domains, including health sciences and engineering.

Michael M. Grant is Associate Professor in the Instructional Design and Technology program at the University of Memphis. His research considers how to best help K–12 teachers and university faculty integrate technology, as well as how students represent their learning with technology. Most recently, his research, service, and consulting has focused on teaching and learning with mobile computing devices.

Allison Gulati is Associate Dean of Students and Director of Strategic Initiatives at Lehigh University. In her role, she works with student life departments including First Year Experience, Residence Life, Leadership Development, Student Activities, and Community Service. Her areas of interest include organizational leadership development and planning and developing new co-curricular strategies for advancing college student learning.

Barry Harper is the University of Wollongong Program Dean in Malaysia. He was previously the Dean of the Faculty of Education, Director of the Educational Media Laboratory, and leader of the Intelligent Environments research group for the Smart Internet Technology Centre. His research focuses on the theory, design, development, implementation, and evaluation of technology-supported learning environments.

Ronni Hendel-Giller is a seasoned learning and development professional, who currently serves as Vice President of Client Services for Maritz Learning. She has extensive experience

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Shanna M. Hicks has over 15 years' experience supporting human performance in human resource management and development and currently works for Eclipse Aviation. But this just gives her the opportunity to do what she loves most: teach yoga.

Janette R. Hill, Professor in the College of Education at the University of Georgia, has over 17 years of experience in the areas of instructional design, particularly in online learning environments. Dr. Hill has an extensive publication record and has served as PI or co-PI on several grant projects funded by leading foundations such as NSF and the Wallace Foundation.

Simon Hooper is an Associate Professor at Pennylvania State University, where he studies, designs, and develops technology to support teaching and learning.

Kun Huang is an instructional designer at the University of North Texas Health Science Center. Over the past few years, she has been working with health science faculty to design and develop technology-supported constructivist learning environments. Her research focuses on scaffolding students' metacognition, knowledge transfer, complex problem-solving, and conceptual change in science.

Julie Jabaley is co-founder and principal of Leverage Points Consulting, which supports public health entities striving to amplify effectiveness and outcomes through instructional and project management solutions. She has created curricula and delivered training in K–12, higher education, and public health environments. Julie most recently worked on developing a hybrid curriculum for a parenting intervention at Georgia State University.

Carol S. Kamin is Associate Professor in the Department of Medical Education at University of Illinois in Chicago, College of Medicine. In addition to teaching in the medical school, she also teaches a master's degree in health professions education online and in person in an international program. Her research interests include greater understanding of the role of media in learning.

Mable B. Kinzie applies ID and new technology to support learning and development across disciplines and environments; her current work focuses on teaching quality to support early child development. With more than 50 interactive/instructional products and 50 publications, she has been recognized as a Harrison Outstanding Faculty Member at the University of Virginia and received national awards for scholarship and instructional development. So far, she's found it's impossible to have too much fun.

Molly M. Lane is core faculty in the Instructional Design for Online Learning specialization at Capella University, where she teaches online courses in instructional design and