

## Instructional Technology for Teaching and Learning: Designing Instruction, Integrating Computers, and Using media

**Reviewer: Jackie Halliday**

Programme Leader, Diploma in Education Technology  
UNITEC Institute of Technology, Auckland  
New Zealand  
[jhalliday@unitec.ac.nz](mailto:jhalliday@unitec.ac.nz)

**Textbook details:**

Instructional Technology for Teaching and Learning: Designing Instruction, Integrating Computers, and Using media

Newby, T., Stepich, D., Lehman, J. & Russell, J.  
2000, 2<sup>nd</sup> ed., Columbus, OH: Prentice-Hall  
(ISBN: 0-13-914052-2)

This book is not just a recipe of ideas for teachers to use educational technologies in their classroom. It contains some powerful pedagogical strategies to encourage teachers to reflect on their own practice when confronted with the use of these technologies in teaching and learning.

The authors spend some time explaining why this book was written, how it is organised and how to use it going so far as to say “if we were studying this textbook, we would.....”(p.2) and prescribing a reading approach. They have defined the work as a textbook and it is targeted at pre-service and in-service teacher education. Indeed, the work seems to be a self contained course that tries to bring together three aspects of technology use in education: how instruction is designed, developed and improved; the types and uses of different media formats – especially the use of the personal computer; and how the design of instruction and media can be integrated to promote student learning (p.1).

The organisation of the text is very clear using the acronym of PIE representing the model of – planning, implementing, evaluating – and chapters are grouped around this. It is good to see a text emphasising the planning aspect of helping teachers to integrate technologies into their teaching and learning programmes as this is often the part that teachers have difficulty with. There is also a strong focus on learning theories and these underpin the advice and guidance given in the book.

Given this focus, I find it difficult to understand the use of the term *instructional technologies*. Because to my mind, this has connotations of a more didactic approach to teaching and learning. I would have preferred the use of *educational technologies* which I feel is more compatible with a learner centered approach. Furthermore, I wonder why the writers do not use the term *teacher* as the majority of people who will use this text are almost certain to be teachers, not instructors. To me, the term *learner-centered instruction* is an oxymoron.

The inclusion of reflective questions and activities for teachers is a sound feature of this book because only by teachers engaging in this reflective process will they be able to fully integrate and understand the implications of using these technologies for student learning. In the Preface, the authors state that these are to “help readers think about the ramifications and application of many of the principles that are discussed” (p.vi). Examples of the use of specific technologies in the learner-centered classroom are given and the story of one teacher’s journey is advanced throughout the book. These features help teachers think in terms of their own experiences thus aiding the process of transferring theory into practice.

Other features included in the book are Toolboxes. These can be one of three types, tips, tools or techniques and a useful feature is that they are positioned close to relevant text materials in each chapter. A chapter is devoted to the evaluation of instructional materials and the assessment of student performance. Here again I have difficulty with the term *instruction*. Why not refer these resources as *teaching materials*? A variety of innovative assessment techniques such as electronic portfolios, logs and journals, writing samples and interviews, are given to help teachers evaluate student performance and a whole toolbox is provided that contains advice on the use of electronic portfolios.

This book contains valuable advice and guidance for pre-service and in-service teachers regarding the integration of educational technologies into their teaching and learning programmes. Especially valuable is the emphasis on learning theories and the use of a variety of pedagogical strategies to encourage reflective practice.

Other instructional design models incorporating technology integration include the Reiser and Dick model; the ASSURE model; the Teacher Decision Making model, which gives explanation to the ADDIE process (Analysis, Design, Develop, Implement, and Evaluate); and the Kemp model. We used each of the models in previous teaching practices and found the models did not entirely address the needs of our Instructional Technology course. Shelly et al. indicated that when using technology, an instructional design model and planning take on a more important role for the teacher (2006, p. 6.22). Module seven: Students evaluate media by completing evaluation of one of the computer software programs available in the education computer lab. Instructional Technology for Teaching and Learning: Designing Instruction, Integrating Computers, and Using Media. PreK-12 Education. Higher Education. It successfully integrates instructional design principles, methods, media, and computing, and it uses a learner-centered approach that focuses on how to design solid technology-enhanced instruction that increases learning. It details the basic theories and applications of educational technology in a reader-engaging format. Features. NEW - Includes a new chapter, Using the Internet and Distance Education, which is particularly timely given the explosion of on-line technology. Instructional media help students visualize a lesson and transfer abstract concepts into concrete, easier to remember objects. Assess performance. Media is an excellent way to pose assessment questions for the class to answer, or students can submit mediated presentations as classroom projects. Use the board to present a problem the class should be thinking about during the lecture. Use the board for graphics as well as text and formulas. When Using the Whiteboard. Instructional technology for teaching and learning: Designing instruction, integrating computers, and using media (2nd ed.). Upper Saddle River, NJ: Prentice Hall Career & Technology. Pettersson, R. (1989).

TECHNOLOGY is a valuable instructional tool for teaching and learning fundamental concepts such as mathematics, reading, and writing. The teaching of advanced topics with abstract concepts can also...<sup>Â</sup> Instructional technology for teaching and learning: Designing instruction, integrating computers, and using media (2nd. ed.). New Jersey: Prentice Hall. Google Scholar. Papert, S. (1980). Mindstorms: Children, computers and powerful ideas.