

Book Review

Foundations of Educational Technology

Foundations of Educational Technology: Integrative Approaches and Interdisciplinary Perspectives. J. Michael Spector (2012). Routledge, NY, 2012. 196 pp. \$49.95. Soft Cover. ISBN: 978-0-415-87471-7

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Abstract

J. Michael Spector's *Foundations of Educational Technology: Integrative Approaches and Interdisciplinary Perspectives* is intended as an introductory-level textbook for graduate students and upper-level undergraduates seeking an orientation to foundational principles in educational technology. The book is successful in its intended purpose, but Spector's presentation of educational technology as a non-reductive and cross-disciplinary field creates structural tensions between the text's intended role as introductory survey and the underlying complexity of its philosophical hermeneutic.

Print textbooks about educational technology pose a conundrum: their purpose is to address the application of new technologies to teaching and learning. Yet they are themselves instances of an educational technology so old that we rarely think of it as a "technology" at all (Spector, J. M., & Lockee, B., 2009). A similar tension between presenting current developments in the field and encouraging researchers, practitioners and theorists to explore the "long view" pervades J. Michael Spector's *Foundations of Educational Technology: Integrative Approaches and Interdisciplinary Perspectives*.

Foundations of Educational Technology is intended as an introductory text for graduate students or advanced undergraduates seeking an orientation to the educational technology field. It succeeds in this, although as Spector remarks in the Preface "[t]his is by no means a definitive treatise" (p. xviii). The text is well written and sequenced. It adopts a four-part structure, starting with an introductory section that sets out Spector's definition of educational technology and other foundational topics, then proceeds through brief but information-dense explorations of theoretical and practical perspectives before concluding with a—too short—discussion of applications in various real-world contexts. Individual chapters are organized around a consistent sequence of presentation (core chapter text), reflection (short-answer questions reviewing key concepts) and application/integration (a longer challenge/scenario question with associated exercises). A certain

amount of compression and ellipsis is required to cover what are sometimes large topic areas; this is offset by the collection of printed text and online references Spector provides at the end of each chapter.

Part 1 of the text (chapters 1 through 6) might easily be expanded into its own book. Spector starts with the deceptively simple questions of how to define technology and how to define education. After an excursus demonstrating that arriving at practical definitions is not at all a simple task, he proposes the following: “educational technology involves the disciplined application of knowledge for the purpose of improving learning, instruction and/or performance” (p. 10). The remainder of part 1 follows, almost in its entirety from the implications of this definition. Spector views educational technology as an empirical discipline, but a non-reductive one, in the sense that not only is it a complex system in and of itself, but it also interacts with other complex systems such as cultural dynamics and ethical values. Spector in fact makes a point of foregrounding values both social—“Do not create disadvantages for one population while creating advantages for another population” (p. 15)—and scientific throughout part 1, a concern that echoes through the following sections of the text.

After discussing several conceptual distinctions necessary to the field (intentional versus unintentional learning; aspects of learning, training and performance as well as how these can be supported) Spector arrives in chapter 6 at a critical but highly compressed discussion of what technology integration in education means. Building on Merrill’s “First Principles of Instruction,” (2002) Spector notes that “something is well integrated when it is no longer the focus of attention ... One did not focus on chalk and the chalkboard in traditional schoolrooms—they were there and effectively integrated” (p. 53). Successful integration of technology in education is, therefore, a matter of bringing new technologies into educational environments in such a way that they eventually fade into the supporting infrastructure, improving the environments they inhabit without dominating them.

Parts 2 and 3 of *Foundations of Educational Technology* perhaps come closest to providing the general-purpose topical surveys one expects in an introductory text. Part 2 progresses cleanly, touching first on major theories of human development (chapter 7), moving on to theories of human learning and performance (chapter 8), a lucid discussion communication theories and models (chapter 9) and concluding with an overview of instructional theory (chapter 10). Part 3 is similarly well sequenced, beginning with a discussion of needs assessment and change management (chapters 11 and 12), progressing to topics relating to applications of technology in teaching and the pragmatics of twenty-first century skills as these have emerged in the global economy (chapter 13) and finally reviewing the manifold challenges of technology integration with instructional design (chapters 14 and 15).

Parts 2 and 3 are good as topical surveys go, though much of the material covered is available in texts by other authors. What makes Spector’s treatment distinctive is his ongoing return to the idea that effective educational technologists must grapple with questions outside the ordinary purview of the field. He muses, for example, on the

apparent decline of the classic liberal arts education, and draws on examples from the Torah to illustrate that solving complex and ill-formed problems has been a perennial human occupation (pp. 132-133).

Omissions are inevitable with any survey text, though occasionally puzzling here. Given Spector's expressed interest in the social contexts of technology integration, one might expect at least a mention of communities of inquiry. The affordances of some non-traditional deployments of computer technology, such as serious games, are also not discussed.

Part 4 comprises a single chapter and its brevity reflects Spector's intention that it provide a "starting point for further discussion and exploration" (p. 161). The purpose of this chapter is to illustrate how the educational technology principles discussed in the previous sections of the book might be applied in a variety of government, business and scholastic contexts. Curiously, however, Spector chooses to undermine much of the effort he has just undertaken to define and elaborate on these principles by emphasizing Wittgenstein's concept of "meaning as use" right at the start of the chapter.

While this provides great flexibility for application and interpretation, it also inadvertently creates the impression that each context is discontinuous with the others (hence the meaning and significance of educational technology principles changes in each context). Cross-contextual trends, such as the expansion of private testing companies into technology and curriculum development for public K-12 schools are treated based on their separate effects in each sector, rather than unitarily, as two ends of the same process.

Overall, *Foundations of Educational Technology* is a superb introductory text, though potentially more challenging than some others. It is a relatively slender book that, by virtue of Spector's presentation of educational technology as a non-reductive and cross-disciplinary field, implies a longer, more complex and more comprehensive tome.

References

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