

BOOK REVIEW

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Strategic Applications of Distance Learning Technologies, by Mahbubur Rahman Syed

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Strategic Applications of Distance Learning Technologies, by Mahbubur Rahman Syed (Hershey, PA: Information Science Reference, 2009, 354 pages, \$180.00).

Rapid innovation in educational technology has produced tools that have changed the landscape of distance learning. These changes point to both challenges and opportunities for educators and the students they instruct.

From the ubiquitous web browser to more specialized tools (such as virtual learning environments like Blackboard, rich media virtual conferencing systems like Elluminate, all the way to immersive games and simulations) these new technologies both create and respond to the expectation, be it a blessing or a curse, or bit of both, that, like their connections to other media, students' connections to learning experiences be always on and everywhere at once.

Strategic Applications of Distance Learning Technologies, although hard to hold (the book is a large and unwieldy) and sometimes hard to read (its language tends to be quite technical and its chapters fall in no particular order), is a valuable book for two reasons. First, the discussions of projects one finds between its covers give an informative tour of the research being done by scholars working at the intersection of distance learning technology and pedagogy, and offer an overview of the possibilities for teaching these technologies represent. Second, in light of these possibilities, the book raises important questions about the responsibilities distance educators now have, and what best practices we should follow, as we and our students gain access to increasingly rich and interactive learning environments.

The book proceeds from the enabling assumption that web-based, digital technolo-

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gies have come to influence, if not define, the parameters of distance learning and that they will continue to do so. In his introduction Syed writes, "the digital revolution, powered by the engines of information and communication technologies, has fundamentally changed the way people think, behave, communicate, work and earn their living." These changes do indeed run deep; as illustrated by the exponential growth of distance learning programs worldwide, the availability of online learning opportunities has already changed attitudes concerning when and where formal education may occur, and what a learner's relationship to the source(s) of formal education might be.

Taken together, the book's chapters convey a sense of how, thanks to improvements in the technologies of distance learning, it is now possible to help students learn at a distance in ways that were unimaginable as recently as 10 years ago. The book is full of news about tools that provide unprecedentedly rich, immediate, and individually targeted learning experiences. The question of how best to accomplish distance *education*, however, as distinguished from the question of how to accomplish remote *training* or *personal learning*, is a distinct and important one, and one to which fewer chapters in the volume directly respond. Every chapter in *Strategic Applications of Distance Learning Technologies* has something to offer, but most galvanizing are those chapters that do, in some way, point to distinctions between *training* (learning to perform a task), *learning* (the acquisition of new information and the assimilation of that information into the context of one's preexisting personal knowledge and values), and *education* (the development of an expert sensibility negotiated with reference to the normative moral, ethical, social, and intellectual standards of an academic or other professional community) as achieved in online environments.

In chapter 5, for example, a chapter that offers one case of structured instruction done at a distance, authors Müldner, Shakshuki, and Kerren describe the design of an automated tutoring system that helps students of com-

puter programming understand algorithms. The system takes an incremental approach to this instruction: students work through a given programming project one operation at a time, interacting with the system as it offers targeted feedback, when requested, in the form of textual and visual explanations. Student centered, the structured hypermedia algorithm explanation (SHALEX) system at the heart of the experiment provides students with feedback on several levels, keeping global project goals in view while helping students explain and program each operation for themselves. Similar tools, described in other chapters, supply similar support: the purpose of these systems is to provide personalized instruction (sometimes with great sophistication) with respect to predetermined tasks. Feedback is more flexible, and the learning environment more personalized, than has been true in previous generations of such tools; nonetheless, the outcomes of the lesson are predetermined and entail the mastery of basic subject matter, in this case fundamental principles of programming. Assessment involves evaluation of a student's ability to apply these principles as solutions to predetermined problems.

But what if the instruction at hand, the learning to be done, the experience to be gained, does not follow predictable paths? This question, particularly relevant to coursework in the humanities, and equally relevant to advanced studies in any academic discipline, goes unasked in most chapters, simply because those chapters confine themselves to discussions of technical issues or basic instruction in more technical or lower level courses. But what about more ambiguous learning situations, all of whose elements cannot be predicted in advance, and whose outcomes are indeterminate and may be reconsidered after the fact? What about the achievement of *education* in the sense of a process that develops students' awareness of and ability to participate in the intellectual atmospheres of disciplinary and professional cultures on a deeper level of psychosocial understanding? Does *Strategic Applications of Distance Learning Technolo-*

gies offer hope that distance learning technologies may be strategically deployed to achieve such immersive intellectual initiations?

The short answer to this question is yes, but one must at times read between the lines, and between the chapters, to sense it. For example, the authors of chapters 7 and 9 usefully detail scenarios in which information technology (IT) professionals and business pilots, respectively, avail themselves of distance learning experiences for continuing professional development. Emphasizing the personalization of instructional delivery for continued professional development, Fok and Ip, the authors of chapter 7, “An Agent Based Framework for Personalized Learning in Continuing Professional Development,” propose an architecture for providing continuing professional development to IT professionals. They persuasively argue that personalized, asynchronous, learner-centered, and at least partially automated training has become a necessity for such workers, noting that the fast pace of technological change has put them under constant pressure to update their skills.

The system Fok and Ip propose includes “personalization features” that match learning resources to the training needs of individual IT professionals. Such features include catalogs of learning objects drawn from the Internet that automatically present the learner with a choice of objects deemed appropriate for that learner based on an analysis of the learner’s profile. In addition, the system can also sequence retrieved objects for the learner and monitor the learner’s progress, offering formative support as needed. Such a system might appear to be the whole enchilada, the distance educator’s holy grail, were it not for one crucial point the authors make themselves: *in order to be meaningful educationally, learning activities must be contextualized with reference to the rules and values of communities of practice.*

A related example of professional training emerges, in chapter 9, from the context of business aviation pilots who maintain their certifications by participating in remotely delivered

training programs. The pilots’ virtual training grounds make use of two key features of successful online learning experiences recommended in other chapters of this book: real time interaction for feedback and networking, as well as realistic simulations that create conditions in which individualized, active learning may take place.

But here is the point: the activities of the pilots in question gain meaning for taking place in the context of a preexisting professional community. The presence of this context enhances the pilots’ training, and contributes to the success of their instruction: it means the social interactions that take place in the virtual learning environment of their training are likely to gain value by virtue of extending into other professional activities, such as professional networking. It also means that the lessons the pilots undertake are always already framed by the professional values and standards of the business aviation industry. In other words, although the pilots connect with the training environment remotely, they know that, when they connect, they operate within an environment informed by the traditions, conventions, and standards of a particular community of practice. The accompanying awareness of larger connections—to the guiding concepts, intellectual and ethical values, and shared objectives of that community, with reference to which the activities of the lesson figure in consequential ways, seems to make all the difference between *training/learning* and *education* with respect to distance instruction.

Detached from the contexts of communities of practice in which they figure significantly, lessons may lead to *training/learning*, but not always to *education*. Some, like the IT professionals and business aviators described in chapters 7 and 9, come to distance learning immersed in the cultures of their industries; they already have it. For other learners, the values, concerns, conventions, and methods characteristic of communities of practice that give learning objects particularized meanings with reference to a program of study, must be made clear by virtue of how they are presented and

the activities that surround them. As Santally and Alain put it in chapter 15, "Personalization in Web-Based Learning Environments," "learning objects are by themselves not teaching objects."

Those who have taught nontraditional students, students who often exhibit a stronger and more focused sense of purpose with respect to their educations than do their traditional counterparts, will recognize how profoundly a strong sense of values and priorities in the learner can increase motivation and the likelihood that a student will find meaning in his or her academic work. Without a sense of how their academic work fits into the culture of a discipline or profession that ratifies his or her program of study, however, even the meanings of a strong learner's learning activities may be limited to a field of personal concerns and fail to connect with other meanings, the student's appreciation of which could be said to constitute the center of his or her *education*, and the internalization of which will define that student as a practitioner in his or her chosen field.

In chapter 3, "Challenges in Delivering Case Based Teaching in the Online Asynchronous Learning Environment," authors Chen, Harris, and Shang voice their concern that a lack of immediacy in communication staged in asynchronous online environments impoverishes that communication from the standpoint of critical thinking and, by extension, of psychological and intellectual engagement on the part of the student. Advocating case method teaching concerned with the investigation of "complex business problems," the authors suggest that students need to experience the social pressure of face-to-face exchanges in order to think rigorously about cases that are multifaceted, indeterminate, and ambiguous. Implicit in this analysis is an appreciation of immediate feedback, which, although emulated by many online instructional architectures, in asynchronous environments, they argue, suffers, as it were, from an absence of presence, fails without the intersubjective confrontation and adaptation, the "in the moment" give and take,

required by face-to-face interaction with fellow students and an instructor who is on intimate terms with the social and intellectual standards of the academic or professional community that the students wish to join and which gives particularized significance to the discussion at hand.

Interactions that produce the kind of "cognitive gains" these authors are after are marked by the opportunities they offer students to discover what they themselves think, and to negotiate between their self knowledge and disciplinary knowledge, finding words for their thoughts and feelings that will carry weight in a given discipline or profession. Whereas the authors found these outcomes less prevalent in asynchronous exchanges that took place on discussion boards, in the space created by face-to-face dialog, they saw students make and test their connections and associations, form and reevaluate their stances.

So, does *Strategic Applications of Distance Learning Technologies* offer hope that distance learning technologies may be strategically deployed to achieve immediate and immersive *educational* experiences? The answer (yes) is voiced implicitly by those other chapters that delve into the *synchronous* communication tools the authors of chapter 3 do not discuss (except to say they look forward to experimenting with them), and by those other chapters which consider how the expertise of subject specialists may be introduced, on an interactive basis, into distance learning environments. Chapter 6, "Federated Agent-Based Architecture for Collaborative Education Model," for example, posits a "FedEducation" model for administering distance learning. Under this model individual schools become homes to particular specializations and join in cooperative networks with other schools to deliver specialized instruction as a component of other schools' programs. Combine this delivery system with the dialogic immediacy of stable and ubiquitous video conferencing as described in chapter 1, "Synchronous E-Learning Integrating Multicast Applications and Adaptive QoS," plus the best

uses of asynchronous technologies (the use of discussion boards for more reflective discussion, for example) and one has a vision of distance learning that comes closer to a general model for distance *education* than we have seen to date.

Clearly, we are still at the ed tech expo in many ways. *Strategic Applications of Distance Learning Technologies* gives one a sense of it. The shopping lists of tools and techniques we derive from its displays will not be permanent,

a fact guaranteed by our current rate of technological change. However, guided in our choices by a sense that the instruction we offer should provide students with experiences that connect them, individually, immediately, and immersively, not just in discrete learning activities but in the atmospheres of our professional cultures, we may begin to establish standards by which to judge and select among distance learning technologies to come.

