Technology, Teaching and Learning: Issues in the Integration of Technology. Barrie Barrell, Editor. Calgary, AB: Detselig Enterprises, 2001, 324 pages.

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I remember the night I brought home the Apple IIe in 1982. We had been one of the first schools in town to receive a computer, and my vice-principal had convinced me that this was going to be a major innovation in teaching and learning. I carefully set it up in the kitchen, plugged it in, inserted the floppy disk, and turned the machine on. It worked. "OK," I thought as I looked at the flashing cursor on the green screen, "where is the magic?"

Anyone who taught in the 1980s remembers the hoopla of the first classroom computers. Similarly, anyone who taught in the 1990s remembers the promises about the World Wide Web. It is only now that significant time has elapsed that we can critically evaluate the rightful place of information technology in education. Barrell has assembled 14 wonderful articles that poke, probe, analyze, and nuance the role of information technology in the K-12 world of Canadian schools. Readers are presented with a tour of the myriad issues of technology and education in the early years of the 21st century.

The first section of the book puts rightful emphasis on the often neglected philosophical issues that confront teachers as they struggle to find appropriate places for technology in their classroom. Because much of the push for technological integration has come from sectors outside education, pitifully little attention has been paid to the issues and perspectives that are central to information technology. Authors in this section of the book deal with some of these substantive issues: Where should we put computers in our schools? What should students be doing with computers? What are the issues of literacy that arise with the use of hypertext? Should we approach computers as simple instructional devices, or should we look at them as agents of educational transformation? The authors in this section take a cautionary tone in their writing, stressing that, "we lack an educational theory of technology" (p. 116).

In the second section of the book, readers are treated to a glimpse of some of the possibilities of information communication technologies (ICT). These include opening up new literacies and horizons in inner-city elementary schools, lessons that can be learned from case studies of ICT, construction of elementary curriculum around the use of technology, and the introduction of virtual schools into the educational landscape of Alberta.

As an on-line pioneer who remembers the first experiments with virtual schooling, I was particularly taken with the chapter by Hunter and Smith. They offer a wonderful overview of the many different characteristics that make virtual schooling more than an oxymoron. Their work examines the experiences of teachers, students, parents, and administrators through the perspec-

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tive of the Alberta cultural and political setting. They conclude with a call to develop systems with alternatives that will enable every child to get the education he or she needs. My own experiences in the past six years echo the many issues brought up in their article. On-line learning is not the panacea that some first thought. It is clearly not for every student; in fact few in the K-12 sector are suited to be students in a virtual school. However, not every learner thrives in a face-to-face situation either. We often forget this.

The final part of the book examines issues of technological leadership and preservice training. Clearly there are problems in this area. Large amounts of money have been allocated to school budgets for the purchase of ICT. There is a huge public expectation that students will come out of schools with technological literacy. However, few teachers in preservice training institutions have experience with advanced technology in an instructional setting, and even fewer school administrators have the necessary tools to envisage what their school would look like in a wired educational world.

As with a good meal, Barrell has saved the tastiest morsel for last. Murphy and Laferriere conclude the book with an excellent chapter "Classroom Management in the Networked Classroom." The discussion here goes directly to the issues "in the trenches." Although those of us in academia can ask the big questions, the teacher is faced with some serious issues on a daily basis. How do you deal with inappropriate material being downloaded or printed? How can a teacher find the time and funding to keep up with the changes in technology? Where is the rightful place for the machinery: in a computer lab or in your classroom? How can a teacher, grossly overburdened with the many stresses of day-to-day classroom life, ever expect to adapt his or her own teaching philosophy to incorporate even a small amount of constructivism?

On that night in 1982 I figured out that there was no magic in the Apple IIe sitting in front of me. Over the next 20 years I have become even more convinced. However, in our most conservative profession, I have also become convinced that 21st-century schooling needs to stop looking like 19th-century schooling or we will face problems that are beyond our wildest fears. The best vehicle to change our situation is the personal computer. Books like Barrell's give teachers a glimpse of what it may take to develop newfound relevance in the service of today's families.