The Digital Classroom: How Technology Is Changing The Way We Teach and Learn

(Book review)

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The Digital Classroom: How Technology Is Changing The Way We Teach and Learn
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This book is an anthology of papers, which seek to offer an examination of issues surrounding technology in education. A fundamental aim is to provide a bridge between research and the every-day practice of dealing with technology in the classroom.

The articles and essays are organised into six sections. Of note are the commentaries on special interest topics, occurring in most sections. These are provided by people from both industry and education. Readers are also encouraged to take advantage of the ‘For Further Information’ sections at the end of each contribution and these provide additional information on the programmes, reports, experts and further readings for each topic.

The first section, “The Digital Classroom”, opens with an introduction by Andrea Oseas who suggests the book will offer “an analysis of what was, is and can be” (p. 5) with respect to the changing ideas of teaching and learning in the digital age. The areas of what was and what is, are well covered by the contributions in this book, and the inclusion of some heartening case stories provide a snapshot of what education could well be in the future. A final few words from Oseas sum up the position in educators around the world find themselves, “although we may not be able to predict the future, we can, if we choose, participate in its construction” (p. 6).

Following the introduction is an article that explores myths about what is required to obtain significant educational returns for the amount of funding being spent on technology in schools. In his article “Myths and Realities about Technology in K-12 Schools”, Glenn Kleiman clearly explains the pitfalls of five myths, which will strike a chord with anyone working within the field of education technology. No short-term solution is offered by Kleiman, understandably, but having some of the problems spelt out in black and white could help crystallize the visions of those planning for the future. For instance, Myth #1: “Putting computers into schools will directly improve learning;” is negated by the reality that “all this expensive technology will yield little educational return until schools and districts address the need for professional development, technical support, the availability of appropriate software, classroom management, and curriculum integration” (p. 9).

Five diverse contributions comprise the next section, “Learning and Technology.” The first, “High-Tech Kids: Trailblazers or Guinea Pigs?” introduces the debate over whether computer use by young children is helping or hindering their brain development, social and physical health. Are we using this generation of young people as guinea pigs? It is a thought provoking question for educators to ponder. The work of educational psychologist Jane Healy is used to highlight the fact that there are many as yet unanswered questions relating to effects of computer use by children. Healy reports that some students “are experiencing headaches, vision problems, and carpal tunnel syndrome or “video wrist.”” And unanswered questions remain about electromagnetic radiation with some computers” (p. 22). The flip side of this argument is presented by reference to James Lerman. “We view technology as another arrow in our quiver,” he says. “We don’t teach technology for its own sake. We see it as useful to the extent that it supports teaching and learning” (p.22). After having been presented with both sides of this debate, it is a shame that the author does not offer a conclusion. Instead it is left to the reader to perhaps investigate further in order to make up their own mind.

Also included in this section are contributions from Howard Gardner “Can Technology Exploit Our Many Ways of Knowing?” and a heartening article by Karen Kelly, “New Independence for Special Needs Students” that
outlines some of the many ways in which technology aids communication and independence for students with special needs.

Two articles dealing with online learning and the Internet complete this section of the book. “The Global Schoolhouse” (Wambui Githiora-Updike) and “Distance Learning in the Digital Age” (Natalie Engler) explore issues involved with using online learning, and provide a critical look at the notion that the digital divide is closing (world-wide), and equity in terms of global exchange of information.

The third section of the book focuses on Teaching and Technology. “People – especially teachers – shape the impact of computers in schools more than the features of hardware and software” (p. 69) according to Stone Wiske in “A New Culture of Teaching for the 21st Century”. In this article, Wiske explores the assertion that in order for technology to enhance education, a change in pedagogy is needed. In “Preparing Teachers for the High-Tech Classroom,” author Clorinda Valenti continues the theme of teachers needing to use communication systems in order to be able to collaborate and converse about technology and thereby enhance their teaching. Thus the importance of communication as an integral part of teaching is championed.

Four useful case studies complete this section. They focus on initiatives and technological programmes using the vast resources of the internet for science, maths, history and literacy. Of note are the recommendations for the use of online resources included in the paper on science.

The fourth section “Managing Technology” is rather brief, with two contributions. The first of these, “A Tech Coordinator’s Road Map for the Information Highway” (Shelley Chamberlain) identifies eight ‘lessons’ that the author has found useful for managing the technology system of her school. The second, “Partnerships: Making the Connection” looks at schools building relationships with communities and business to help provide technological expertise and resources that they need to uphold technology programmes. Nothing new here!

“Equity and Technology” is the focus of the fifth section. “The Real Digital Divide: Quality Not Quantity” (Maisie McAdoo) examines issues pertaining to the quality of use of technology, rather than the quantity of equipment that has been provided. “The Gender Gap: Why Do Girls Get Turned Off to Technology?” (Karen Kelly) comes next. No definitive answer to the question in the title is given, apart from quoting Maria Klawe as saying that girls “visualise computer scientists as nerds,” (p. 156) but it does present interesting information and statistics on the topic. “A Title IX for the Technology Divide?” (Margaret Riel) completes this section and explores whether efforts outside of the digital world, such as in the field of sports, can provide guidelines as to how we may resolve inequities which have an impact on perpetuating the digital divide.

The final section is entitled “Looking Ahead”. In “A New Century Demands New Ways of Learning”, Chris Dede investigates ways in which schools will be able to provide what he believes will be the skills necessary for a knowledge-based economy, rather than the industrial society of the past century.

Overall, it seems that this book provides a constructivist perspective to issues and debates surrounding the best uses of educational technology. Accordingly, teachers and education administrators of all levels should be able to relate to a variety of aspects within this book. From exciting internet collaborative projects to devising professional development, there is something to be found for every sector of the education field.

The aim of providing a bridge between present day research and practice has, I feel, been achieved. Furthermore, this book is very user friendly and perhaps for the average teacher out there, much of the appeal of this book may lie in the straight-forward and jargon-free way in which it has been presented. However, it does not provide too many answers. Instead of being seen as an elixir, a recipe for success, it should be seen as providing a solid base from which self-directed exploration of the ideas and issues raised could extend.