Monteith, M. (2000). (Ed.). *IT for Learning Enhancement* (Rev. Ed.). Portland, OR: Intellect Books. Softcover. 189 pages.

Does information technology (IT) enhance learning? This is the question addressed by the contributors to *IT for Learning Enhancement*, a collection of essays edited by Moira Monteith. At first glance, the collection takes a simple apologistic stance supporting the use of IT for a variety of educational purposes. In fact, in her introduction, Monteith states that the articles contained in this edited book "share a positive technological stance" (p. 9) regarding the use of IT in education. One's first instinct, then, may be to discount the volume for its apparent lack of a balanced view. However, there are a number of theoretical considerations and educational policy issues raised by the chapter authors that enhance the worth of the book in significant ways.

The contributors to this book relate research which includes examinations of the computer's role in student group interaction, the state of the art in interactive multimedia software, and the impact of computer use at home on students' literacy levels. The volume also includes essays discussing technology's role in providing the impetus for educational change and renewal. However, the truly valuable information in this book can be organized according to two main themes: the impact of IT on creating a constructivist orientation in schools and the extent to which IT facilitates the creation of learning communities.

On Creating a Constructivist Orientation
The orientation of the book overall tends to be that working with computers, either in groups or individually, is (or should be) a constructivist activity. For example, Grove and Williams successfully link Jonassen's seven features of constructivist learning environments to the use of virtual reality in an Ancient History class. "Simply put, constructivists argue for a learner-focused environment, in which learners can explore a knowledge domain and construct knowledge of that domain through a combination of collaboration, discussions with their teacher, self-assessment and reflection" (p. 185). Their study concludes that virtual reality has a great deal of potential in providing a constructivist educational environment.

O'Neill posits that the dichotomy between "traditional" approaches and values in education and the approaches and values required by "new" technologies is a point of tension. The resolution of that tension will, in large measure, be determined by teachers' decisions regarding the use of these new technologies and will play a large part in determining the value of children's IT interaction as a constructivist activity. "We have multimedia which allows the child to express what they already think, and to create new ideas ... to become an author, to assemble their own data [however] I have not seen this tool used in this way" (p. 174). Thus, constructivist ideals seem to be achievable dependent upon the quality of teachers' professional judgements.

Creation of Learning Communities
From pragmatic and school policy points of view, a key raised by this book is the role of IT in developing and encouraging collaboration among students and, by extension, the creation of learning communities. For example, Wegerif and Dawes's study sought to determine the extent to which a specific computer software program enhanced student exploratory talk. They note that the impetus for the study was the observation that most in-school IT experiences for students consist of group work but, the quality of the interaction between students was disappointing. Exploratory talk, in this case, is defined as student collaboration that takes the form of interaction combining explicit reasoning through talk emphasizing the shared nature of the activity and the importance of active participation of all involved (p. 21). The study was conducted by placing groups of three grade 6 students around a computer loaded with software specially designed according to the following principles for computer-based activities to support exploratory talk:

• Make sure problems are sufficiently complex,
• Provide props for reasoning,
• Don't let them turn it into a competitive game,
• Discourage mental turn-taking,
• Encourage role-play and narrative, and,
• Minimize typed input (pp. 24-25).

They conclude that "the intervention programme had a very positive effect on the educational quality of children's talk around a particular piece of software" (p. 32).

Underwood and Finlayson and Cook advance their studies which examine various aspects of the role of computer software to foster group work and collaboration among students. The findings suggest that, in certain conditions, the use of the computer positively influences collaboration among students. However, there are some caveats that ought to be considered as schools begin to use IT. Underwood concludes that the size and composition (specifically gender) of individual groups sitting around a computer, as well as the nature of the software used influences the quality of collaboration among students. Finlayson and Cook conclude that "the computer *does* make a difference" [italics added] (p. 122). The pairings of students in their study appeared to engage in more effective student collaboration when completing on-computer tasks as opposed to off-computer tasks. In this light, the text lends itself to provision of a platform on which a discussion can take place around key policy/practice questions such as:

- What is the optimal size/composition of groups?
- What level of software sophistication is required for effective educational experiences?
- What length of time is appropriate for a computer instructional session? and,
- What is the optimum ratio of computers to students in a school?

Another issue raised in the book concerns socio-economic status (SES) and student computer access. Downes examined the use of computers in students' homes. Policy concerns such as the need for a classroom culture that encourages all children to participate in and benefit from all teaching and learning activities, teaching and learning experiences that ensure equal access to necessary resources (such as computers), extra computer time for those children who do not have computers at home, some control over direction and content of learning for students and the creation of links between the home and school (especially in terms of determining the level of resources available to students at home).

Finally, many authors express concern regarding the level and quality of IT training available to students at teacher colleges and to teachers in the field. One must wonder to what extent colleges of education provide experience with and instruction in the effective use of IT in the classroom. The positive effects of IT identified by the contributors to this book cannot possibly come to fruition unless teachers know exactly what to do with the new resources available to them. If this does not occur, IT may simply be relegated to replace

"old" tools and be used in "old" ways (e.g., replace chalk boards and overhead projectors with computer slide shows) rather than in new ways.

This book is a practical and useful guide for educators who wish to explore the potential uses and possible pitfalls of integrating IT into their schools. A majority of the chapters are framed as action research and, as such, tend to resist the highly theoretical and detailed descriptions typical of research journals. The tone and style employed by the writers suggests that the primary target for this book is public school (primary and secondary) practitioners. The authors present their material in a manner that invites teachers and administrators to experiment with and apply the research findings in their own classrooms.

However, this collection of articles, along with most writing about technology, has a somewhat short shelf-life. While Monteith's introduction cites sources from 2000 and 1999, a majority of the contributors' sources date from 1980 to 1996. Given the rate of change in computer technology, the discussion of specific computer software applications contained in this book has a rather dated feel. Despite this weakness, the findings and conclusions surfaced by the contributors provide considerable food for thought and point the way for contemporary educators.

> In general parents and most teachers strongly believe that new skills are essential to survival in the wider world where electronic texts are increasingly the major source of social information, argument and entertainment in our society and that schools need to take leadership in this area. (p. 81)

So, does IT enhance learning? The contributors to this edited book would unanimously say yes. Yet, they would not support blind adoption of IT in schools. Monteith cautions "the use of and implementation of IT in learning needs to be carefully contextualized with due note taken of research findings and good practice where learning gains have been substantiated" (p. 9). However, as pointed out above, there are some serious debates which need to be conducted before and during the implementation of IT programs which measure their success.

Scott Tunison
Saskatoon, Saskatchewan, CANADA