It is also important for teachers to be given the opportunity to plan and implement their own interventions as much as possible. One potentially effective way is through carefully planned inservice training and follow-up (Taylor, Hazel. "INSET for Equal Opportunities in the London Borough of Brent"). Another is for academics and researchers to involve teachers in a collaborative way in projects while minimizing the power relationships which usually characterize more traditional types of educational research (Witcher, Helene. "Personal and Professional: A Feminist Approach").

Little of the material covered in this collection of articles will come as a surprise to most readers. The data largely confirm what we already knew or strongly suspected. But in an indirect way the book raises an important issue with respect to gender inequality and education in Canada. It points to the fact that we tend to know more about the educational research carried out in Britain than we know about similar research in Canada. In part, this is the result of larger numbers of conferences held in Britain and their easy accessibility from most parts of the country. In addition, proceedings are often published, making the information widely available to interested parties. There are far fewer conferences in Canada, however, and attendance is more difficult, not only because of the size of the country, but also because of dwindling financial resources. Futhermore, collected papers are seldom published or widely distributed. Thus, it is with particular enthusiasm that many of us await the promised publication of *The Women and Education Conference* proceedings held June 12 to 14, 1986 at U.B.C. If we are to have continued access to findings in a Canadian context, this is a step in the right direction.

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Sloan, Douglas. (Ed.), *The Computer in Education: A Critical Perspective.* New York: Teachers College Press, 1984, pp. 129, $11.95, (paperback).

The ten articles Douglas Sloan has collected in this book raise critical questions about the use of computers in education from the points of view of a journalist, a physicist, a teacher educator, an early childhood educator, a cognitive psychologist, an educational policy analyst, a philosopher of education, a sociologist of education, and from other perspectives that are harder to label. In his introduction, the editor states his view that while "the computer offers potential for human betterment," (p. 1) it is also "fraught with great dangers to the human being," (p. 1) and his contributors adopt the same stance, occasionally acknowledging the possibility of benefits (largely unspecified and unanalyzed), while raising all sorts of misgivings, apprehensions, and objections.

In his introductory chapter, Sloan not only shows that there is a need to raise critical questions about computers in education, he also offers "emotional rationality" (p. 4) as one perspective from which to ask critical questions and gives "What is the nature and quality of the sensory life encouraged by the computer?" (p. 5) as an example of a critical question suggested by that point of view. Although Sloan never directly answers this question, he does contend that present theories and practices in education with computers are dominated by mechanistic images, and he argues that "the development of a rich, healthy, living image-making capacity is the chief task" of education (p. 7).

John Davy's article "Mindstorms in the Lamplight" evaluates Seymour Papert's book *Mindstorms: Children, Computers and Powerful Ideas*, (New York: Harper & Row, 1980), and criticizes it on three grounds: "its tendency to experiential impoverishment, its uncritical 'head-start' philosophy, and its idolatry of powerful ideas and computer thinking" (p. 12). Davy explains "experiential impoverishment" by recounting Papert's description of a Logo investigation in which children made drawings of flowers, seagulls, etc. and by comparing its "autistic" (p. 12ff) quality with the rich smells, tastes, and sounds that children experience, for example, on a playground. Although he concedes that the Logo activity might be mentally rich, Davy is concerned about the "sheer impoverishment of life [and] the effects of simply sitting still for hours, absorbed in an artificial image world" (p. 15) which, he believes, are shared in watching television and programming in Logo. Unfortunately, Davy does not seem to appreciate any difference between the extreme mental passivity of most television viewing and the extreme mental activity of programming in Logo. In the article, Davy limited his discussion of Logo to the realm of "turtle graphics." Thus his comments refer to a small subset of the Logo

environment. Davy's main concern with Logo activities, however, seems to be his belief that they idolize functional, operational, and instrumental reason and tend to displace emotional, moral, and esthetic thought, and his fear is that "by implication or by default [they will be treated] as sufficient for education or for life" (p. 20). Davy ignores Papert's major concern that Logo is an environment which the child can control and manipulate in a way that is not possible or desirable in the world at large.

Like Day's chapter, Robert J. Sardello's article "The Technological Threat to Education" is concerned with the limits and implications of instrumental reason and the need for a heart and a soul in the education of children. The scenes that Sardello paints are ones in which mind games and abstract thinking become psychopathic because they have lost touch with the real world, its meaning, its beauty, and its ethics. His images are vivid and powerful, and it is easy to appreciate his fear of such a future. But Sardello does not explore whether, how frequently, and under what conditions situations approaching this pathological state actually occur as a result of giving children computer programming to do.

The chapter by Hubert L. Dreyfus, a professor of philosophy, and Stuart E. Dreyfus, a professor of industrial engineering and operations research, entitled "Putting Computers in Their Proper Place" is the longest and most eclectic of the book. It begins with Taylor's (1980) classification of possible roles for computers in schools under the headings tutor, tool, and tutee (*The Computer in the School: Tutor, Tool and Tutee*, New York: Teacher's College Press). Then it turns to artificial intelligence findings which suggest that just because there is initial success using a computer in one role, indefinitely contained success should not necessarily be expected as domains of application widen or levels of sophistication increase. Adopting a psychological perspective, Dreyfus and Dreyfus then present their model of skill acquisition which has five states: novice, advanced beginner, competence, proficiency, and expertise. They apply this model in giving their assessment of the general effectiveness of each computer role with students at each skill level. They conjecture that learners sometimes need practice applying rules (in the tutor mode) as they progress toward competence, and that for an advanced beginner learning a rule, programming a computer to follow that rule (the tutee role) may be effective. However, they warn that one should not expect any particularly effective role of the computer necessarily to be effective in developing a higher level of skill. The chapter concludes with a discussion of Timothy Gallway's strategies in *The Inner Game of Tennis* (New York: Bantam Books, 1974) in which it is observed that Gallway's students experience success by suppressing analytic reflection and acting like experts who think holistically and intuitively. Like the other chapters of the book, this one does not offer empirical proof that its conjectures are confirmed in actual attempts to teach real students. But unlike the other chapters, it does provide a reasoned theoretical model which accounts for some of Papert's (1980) claimed successes and suggests reasons to expect that there may be limits to the applicability of Papert's program. Its model also provides a framework within which other educational interventions could be planned and hypotheses tested.

In his article, Brian Simpson explores the pitfalls of educational technology using the analogy of the sunken fence which entirely surrounds the attractive pastures of educational technology. He suggests that the tendency to give machines human characteristics ("electronic brain", p. 84) and humans the characteristics of machines has resulted in difficulty in understanding the use of educational technology. He suggests that machines should be used "only to support teachers, not to replace or mimic them" (p. 85). The use of computers as a tool to assist in the educational process should be the aim of the employment of this device. The value of this article is in Simpson's understanding of the potential of videodisc and microcomputer technology when employed in an appropriate educational context.

Several of the articles address the issue of unequal access to computers and the effects of sex, socioeconomic status, and prior achievement on that access. The article by Douglas Noble "Computer Literacy and Ideology" is particularly effective in debunking a number of myths about computers and computer literacy, and in showing that despite its plausibility computer literacy is actually unimportant. In the second part of his paper, Noble argues that the computer-literacy movement should be viewed "not as education, but rather as an ideological campaign, one that coincides with and reinforces a hegemonic vision of a computerized future" (p. 64). In particular, Noble shows how computer credentials are becoming a needless obstacle and biased barrier to opportunity and how the computer-literacy ideology could result in mass disqualification in the competition for schooling and jobs. Nobel ends his article with a number of searching questions, perhaps the most important of which is "Is it possible to teach about computers without at the same time exaggerating their importance and without depicting their use as the highest form of intellect?" (p. 74).

Outside of academic circles, "criticism" is usually taken to mean speaking against a person or an idea. But

these academic papers, which in places have a pompous tone, also rarely go beyond complaining, decrying, warning, and objecting. Most of the authors have almost nothing to say about what they consider might be worthwhile uses of computers in education, although one author does admit that his manuscript was prepared on a text-processing system that also checked his spelling. Several others imply that they do use computers in education in other defensible ways. Some of the statements made in the book indicate a lack of understanding of the capabilities of the technology and the future impact of current developments. The statements about the spell checker do not reflect current capabilities of spell checkers. The comments on computer assisted instruction do not reflect the impact of "expert systems" on this medium. Criticism of the type leveled in many of the articles should reflect the continuing development of technology. On the other hand, the book contains a few amazingly uncritical statements, such as the condescending comment of Davy, "I take it as obvious that proper education in computer science belongs in high schools" (p. 17). Why is this obvious? What is "proper" education in computer science? And why does the study of this particular technology belong in high schools which have traditionally offered courses in mathematics and the pure sciences like biology, chemistry, and physics rather than in applied sciences like engineering?

This book is long on good questions about the use of computers in education, but it will probably seem short on good answers, especially to a practicing teacher or to an educational researcher with a bent for action.

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Folz, Nancy, T. (Ed.),*Handbook of Adult Religious Education*. Birmingham, Alabama: Religious Education Press, 1986, 272 pp, $14.95.

This is an "intelligent" book. It utilizes an abundance of current research about education, and particularly the education of adults, to provide insight into a contemporary, popular topic. Adult education is currently a "hot item" in educational enterprise, and particularly religious education for adults. This book reports theoretical and practical research by diverse adult religious educators. The authors, showing themselves familiar with some of the best contemporary theory in religious education, make judicious application to adult education.

Perhaps one of the finest features of the book is its readability. Any church committee charged with implementation of adult education should read and discuss this *Handbook* to ground their deliberations for sound planning. Those seeking to improve insight into religious education for adults will find thoughtful, practical help. As well, those responsible for the in-service preparation of leaders (teachers, clergy, coordinators, etc.), for other levels of religious education will be aided by these reflections on effective adult workshops and training sessions.

The book is faithful to its perspective announced at the outset: "how adults learn, what transitions occur in adulthood, and how religious educators can assist people to find meaning in life . . . the challenge of adult education is in the life-style lived" (p. 2). The first chapter, though a brief fifteen pages, presents the overall purpose of adult religious education, i.e. evolving an individual's meaning-making as "an interpretative structure which defines a person's being-in-the-world and his or her existential stance toward reality" (p. 10). Education aims at development of personal faith through coherent religious thinking in dialogue at once with one's religious tradition and an individual's life-situation, i.e. personal "meaning-making." This differs from what many adults today often experience in a "simply transmission of tradition" ready-made for living ("meaning-receiving"). The function of the adult religious educator must rather be to help "learners explore and expand their meaning structures" (p. 13).

Two fundamental modes of learning for adults are indicated as "notional" (rational-discursive) and "relational" (lived experiences in a community of shared values) (pp. 12-15). All ten author-contributors share this educational anthropology and unfold the book within the dynamic of the indicated learning procedures. Underlying these