

sense of relative deprivation" (p. 22) as with so many like me. I too have adopted all "the strategies of adaptation" Abel records. The book, however, is not recommended as a catharsis but as a meticulous example of research that has both a face and a voice; we have all known its actors. *Terminal Degrees* should be compulsory reading for all graduate students and their advisors; indeed, all of us who claim to be part of the "community of scholars". If displaced academics learn to live with "a diminished sense of self" it is imperative that fulltime faculty understand that the life of the mind itself is diminished in the process.

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Adams, Anthony and Jones, Esmor. *Teaching Humanities in the Microelectronic Age*. England: The Open University Press, 1983, 150 pp., \$12.95.

Even though *Teaching Humanities in the Microelectronic Age* is placed squarely in the arena of British educational policy and in the humanities area of curriculum it has broad appeal. I would like to explain why that is so, as well as comment on some issues which emerge from its broad significance.

An extensive network of computer related organizations and a burgeoning literature in this field have emerged in the U.K. These organizations have produced much of this extensive literature in the field, and this book provides the reader with some insight into how these organizations operate and how they have influenced thinking about microcomputers in education in the U.K. That, in itself, is an interesting lesson in the process of innovation in this rapidly changing field.

The British government has invested heavily in microcomputer technology for schools. Witness the major microcomputer education project (MEP) network and the "Microcomputer in Every School" program which provides matching funds from the government for equipment purchase and the non-optional inservice programs that go with this program. This money has stimulated considerable INSET activity, lessonware development and general writing about microcomputers in the U.K. *Teaching Humanities in the Microelectronic Age* provides the reader with a useful guide to this literature. If one is at all bewildered by the many alphabet organizations referred to in the book, the index is a useful guide to them, but better still there is an appendix that describes what these alphabet organizations are and a further appendix which provides an annotated bibliography. The appendix on criteria for evaluation of soft-ware probably raises more questions than it answers.

While the title of the book refers to humanities, issues that are discussed cover much of the curriculum. About the only areas not represented are science, mathematics, and computing science. The authors take pains to point out how wrong-headed it is to give these areas priority. They blame the British government for promoting the view that student experience with microcomputers improves their employment prospects and enhances industrial development. This is not an unusual line to take. Our own Science Council has urged reform of science teaching in Canada in much the same terms, and it is the sort of rationale one expects from governments concerned about such matters as employment and productivity. One interesting difference is that in the U.K., large sums of money have been given to schools by central government. Such direct intervention is, of course, not possible in Canada due to political realities. But I want to look at the question of how to justify investment in microcomputers in schools later.

The authors' definition of humanities covers a lot of ground. Added to that is the importance they attach to the development of language across the curriculum. Their idea seems to be that what is good for language arts is good for the whole curriculum, and using computers in language arts is a good thing because it might stimulate basic changes in how language is taught across the curriculum. In that sense they are at one with Seymour Pappert who claims that experience with computer languages like LOGO can profoundly alter what children gain from their time at school, or with Ontario computer guideline writers who think that self-concept will be enhanced through computer studies.

What interests me, particularly, in the way the authors talk about the potential of the microcomputer for changing the classroom, is their discussion of oracy. Oracy is the language arts way of talking about talking. And talking in my view and in the authors' view is at the heart of teaching. The authors recognize, rightly, that teachers do not handle talk very well. By using microcomputers they hope that the teachers can overcome some of their talk problems. They say:

It is quite possible to operate this game (talking about work) with 30 students working in four or five groups with each group taking its turn at the terminal and carrying on where the previous group left off, while the other groups are occupied with different but related language activities. Thus solving at one go the managerial problems introduced by both talk and the micro in the classrooms.

They also say:

One positive value that the introduction of the micro brings is that it gets the teacher out of the way and so allows the pupils to make the mistakes and the discoveries for themselves.

If I read the authors rightly, their solution is to get the teacher out of the way while still keeping the students talking. The computer becomes the focus of the talk: "What shall we say to the computer?" And the computer doesn't have bad teacher-type habits. Even if the management problems could be solved, teachers aren't good at talking; that is, at discussing things with their students. It is a difficult thing to do, there is no doubt about it. But how are students to know what good talk is like if they haven't experienced it? The micro on its own isn't going to solve the problem of generating good discussion. Handling talk is much more than just managing talk; it is knowing how to produce *good* talk.

Meanwhile there are many issues beyond well-known management problems that may underlie how teachers feel about using microcomputers. Is what the children do with the computer a form of teaching, is it an extension of teaching or is it just another workbook? These kinds of concerns might be summed by asking about how microcomputers affect the ways teachers construe their influence in the classrooms. It seems to me that considerable work needs to be done here before we can make claims about how computers might solve teachers' problems.

Adams and Jones make a strong case for using computers as a teaching aid. Others argue that computer experience is essential for vocational reasons. Adams and Jones are sceptical of this line, I think, because they are annoyed that mathematics and sciences are favoured by government and their being favoured is largely justified in relation to the manpower argument. The authors think something more educational ought to come from students' experiences with micros in the classrooms and they argue that it is through use of micros in humanities that this can occur. What they want is an educational use of the technology, not a stress on technical competence suited to emerging industrial needs of the country.

I agree with their point of view and have two comments to add here. First, we educators are quick to promise much; too much. Proponents of computers in education, including the authors of *Teaching Humanities in the Microelectronic Age*, are engaging in just such rhetoric. We should be very careful about what we promise to be able to do with microcomputers, and that what is promised is grounded in a realistic knowledge of what teachers can do well. Secondly, although I don't see why we should rush to put microcomputers in the classroom just because manpower needs demand it, it seems to me that schools ought to help students understand why microcomputers are being used the way they are in society and what all of that signifies for the kind of life they are going to have as employees and beyond that as citizens. Microcomputers are a significant factor in working life and in the other aspects of life as well. It would seem important for students to have some experience with microcomputers as a basis for being able to think about them critically. And it may be the case that such courses in school should be developed to deal with this. These courses would be run by people who are less enthusiasts than social critics. This would be one way of saying that the use of microcomputers might become an issue to be dealt with inside the existing curriculum, and in a critical way, as an occasion for looking seriously at technology in our lives. Thus the microcomputer would be a stimulus for better teaching, as Adams and Jones would have it, as well as a subject for study in its own right.

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