TEACHERLESS EDUCATION?

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Summary: *Computers have invaded just about every sphere of our daily lives and education is no exception.*

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Robyn Williams: It so happens that where I work, making radio and TV programs, for every comment I receive about the language used or the production values, I get 100 about computers or the new technology.

Everyone seems obsessed by machines, unmoved by words. Why is this so? Are the digital mechanics more interesting to Australians than the ideas they are supposed to transport? Or is it that the technology is more saleable than the concepts? And how does all this apply to education?

Well Michael Green has a view on this. He's from the faculty of Engineering and Information Technology at the Australian National University in Canberra.

Michael Green: Popular accounts of the information revolution depict exciting technical innovations and their awesome social implications. They describe a dazzling variety of new products which will transform our homes, our work, and our institutions for the better. As if by magic, problems which have been with us since the dawn of civilisation will disappear as a by-product of embracing the computer. Education is no exception.

American computer-based teaching advocate Fred Bennett says, 'all (the) daunting problems (of education) . would vanish if computers were teaching.'

Such claims are part of a long tradition of technological utopianism in which 'the use of specific technologies . makes life enchanting and liberating for nearly everyone.' Techno-utopians avoid analysing how the technology will bring about the benefits they claim, relying instead on vague, semi-magical language that reinforces the belief that technology itself has transcendent powers. Bennett, for example, believes that 'computers . could easily analyse and determine individual student needs and provide appropriate lessons.'

When techno-utopians do acknowledge difficulties, they tend to dismiss them as things people will just get over, or will just have to get over. Show-case instances are offered to illustrate that the difficulties are not insurmountable.

In his Foreword to last year's Review of High Education Financing Policy, Roderick West acknowledged that 'many universities have invested heavily in the latest technology and then found the gains . to have been elusive.' But almost in the same breath, he says 'the promise of information and communications technology in our universities is high,' noting 'there are already some success stories.' As Internet-enabled computers have become more common, the techno-utopian rhetoric of the early 1990s has lost some of its shine. More people now have direct experience of the technology and its limitations, and researchers can assess actual outcomes against the claims made by enthusiasts and promoters.

Thomas Landauer reports that in studies comparing online text with a paper and print equivalent, most users are quicker and more successful using the paper-based form. He believes the paperless office would have long since arrived if it were not for one stumbling block: people hate electronic documents. Even Bill Gates admits to printing out anything more than a few pages long.

Shirley Alexander's recent study of computer-based teaching projects in Australian universities found that although 87improve learning, only 30

Jane Healy's analysis of computer use in American schools suggests that new technologies have been vastly oversold by promoters and that they drain badly needed funds from proven educational needs.

Both studies agree that effective applications of educational technologies require committed teachers well versed in integrating technologies into a strong curriculum in which the design of students' learning experiences is based on sound educational scholarship, and who are supported by adequate technical and financial resources. These characteristics are unlikely to be realised in the current funding environment except in isolated 'show case' instances.

What are we to make of a situation in which resources continue to be channelled into computer-based education in circumstances we know are not conducive to its successful implementation?

John Ralston Saul believes our civilisation suffers from an inability to see reality, and addiction to large illusions in the form of ideology. One of these ideologies is the belief that technological progress promotes the well-being of humanity. As historian David Noble puts it, 'We have come to believe in an automatic future, one driven and directed by an autonomous technological advance and leading inescapably to the best of all possible worlds.'

This idea keeps at bay the anxiety-provoking experience that technology-driven progress has not always been good for us or for the world in which we live. It also allows the interests of the powerful to proceed under cover of an impersonal ideology of progress against which resistance is not only useless, but misguided.

After World War II, generals and politicians dreamed of a soldierless battlefield, while manufacturing managers dreamed of a workerless factory. And technologists, heavily subsidised by Cold War funding, have largely delivered. The NATO air campaign in Kosovo provides an example of how far we have come towards these objectives.

Computer-aided instruction springs from the same Cold War context. Do our leaders now dream of teacherless education? Are educational technologists producing solutions designed not to help teachers, but to replicate or replace them?

The Department of Education, Training and Youth Affairs, promotes the use of information and communication technology like no other teaching innovation. It acknowledges that historically these have been linked to distance education, but it now sees them as having a greater role in on-campus education as well.

The West Review says large audiences and standardisation are needed to cover the production and maintenance costs. Academics' reluctance to use materials 'not invented here' is seen as the main obstacle, and their concerns are trivialised as contributing only to a self-serving and expensive fragmentation.

Fred Bennett is more explicit. The problem, he says, is that teachers only select software which agrees with their teaching agenda. His solution? 'Free teachers from their usual duties and let computers teach students without an intermediary human instructor.'

These promoters see technology as essential to the future of education, teachers as optional, falling for the hyper-rationalist view that a school or university is a knowledge-transfer machine in which the weakest link is the inefficiency and variability of the teacher, who is to be controlled or eliminated.

Lauchlan Chipman, Vice-Chancellor of Central Queensland University, and who was a member of the West Review Committee, outlines the strategy, asserting that 'not all of the people involved in designing courses, authoring courseware and, most important of all, teaching students, need to be researchers at all, nor even possess the level of expertise as scholars which is typical among academics in a modern university.'

This is a classically Taylorist approach in which execution is separated from design and planning. Execution tasks are dissected into elements that can be standardized and mechanized. Look forward to glitzy drill-and-practice software, computer-generated answers to frequently-asked questions, automated grading, essay marking software, perhaps even computer-generated virtual tutors offering 'individualized' instruction.

The approach is capital intensive because it is much more expensive than people imagine to encode expertise in a machine or program. Public universities do not have the necessary capital, so the typical approach is to raise money from a private company, who in return gets to own the courseware commodity which encodes the expertise of the staff.

For example, the University of California, Los Angeles, through its extension arm, UNEX, has granted The Home Education Network (THEN)'the sole, exclusive and irrevocable right under copyright and otherwise to exhibit, perform, broadcast, transmit, publish, reproduce, manufacture, distribute, advertise, sell, rent, lease, market, publicise, promote, (and) exploit . the (courseware) by all means and technology and in all media and forms of language throughout the university . in perpetuity.'

Will Australian university be among THEN's customers, conducting teaching operations via the Internet from virtually anywhere there is virtually free courseware support?

Robert Reid's 1959 study of fraudulent educational institutions, dubbed degree mills, described them as having 'faculties (who are) untrained, if not actually non-existent,' a 'campus (which) is usually a post-office box . with no classrooms,' 'instruction by correspondence lessons (which) is a travesty on reputable correspondence education' and 'officers (who) are unethical self-seekers.'

Many of the models of Internet-based education would appear to qualify as digital degree mills. Behind the rhetoric of choice and flexibility lies a model of education as the delivery of information through a slick, hyper-rational interface in which the machine is the authority and the curriculum cannot be debated. An eight year old boy reveals the hidden curriculum when he says, 'The computer is smarter than a human being because it always tells the right answers.'

It's worth remembering that computer-aided instruction was developed by the military to train people to perform their highly specific roles in the man-machine systems of high-tech warfare within authoritarian command and control hierarchies. Its strengths are mechanistic, rational and linear. It tends to narrowness and is fearful of the uncontrolled idea, person or event, as well as of intuitive or creative characteristics.

The Encyclopedia of the New Economy, published by the digital culture magazine Wired, points out to its techno-enthusiast readers the problem with this approach. 'Knowledge,' it says, 'isn't like other inventory, it just can't sit around and then be dusted off and used. It has to be kept fresh, relevant and alive. It has to be exercised through continual discussion and revision. And it cannot be managed separately from the people in whose heads it resides. That's the reason companies that successfully manage their knowledge focus on putting people in touch not with vast databases, but with other people.'

It is not my intention to leave the impression that technology has no role to play in our schools and universities. My purpose is to question the motives of the most influential promoters and to ask whether the community is being rushed into an agenda that should instead be approached with caution and reflection.

Technology is not a magic bullet. Nor is it singular and inevitable. We do have choices. There are options.

To leave the education of human beings to computers is a most serious abrogation of our responsibilities. It reduces the human to something less than human, and raises the computer to a role it cannot fulfil.

The real challenge is to change our education system from one which delivers answers within the comforting ideology of certainty, inevitability and passivity, to one which promotes the conscious acceptance of doubt, choice and responsibility. Our students ought to learn not to rush in with answers, certain they are right, but to mobilise experience, intuition, creativity, ethics, commonsense, reason, and of course, knowledge, to form a balanced consideration of what is to be done about the problems we face.

Robyn Williams: And the problems we face look like being more complex than some Australians want to believe. Michael Green from the faculty of Engineering and Information Technology at the Australian National University in Canberra.

Next week, Berry Ann Billingsley looks forward to the year 2000 from the perfect vantage point of Downtown Melbourne. I'm Robyn Williams.

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