

Imagination and insurrection

In this issue is an article by Andrew Thatcher, Lesley-Anne Katz and David Trepess about their experiences in using electronically mediated collaborative learning between The University of Witswatersrand in South Africa and Staffordshire University in the UK. In my last column I expressed my desire to encourage articles about diversity of HCI educational experiences in different cultures and also about distance education in HCI. I was very pleased when David, a colleague of mine at Staffordshire, agreed to write about their project as this embodied elements of both. I was quite unprepared for what I read. There is starkness about the prose and a baldness to many of the statements that I found shocking to read, a starkness that faithfully reflects the raw facts. The legacy of apartheid remains in socially and racially divisive educational opportunities and resourcing.

I recall once being told by a school teacher that under the old UK educational system of grammar and secondary schools (with a selective test at age 11), I would not have got into the grammar (academically high achieving) school as I was the son of a carpenter and that sort of person didn't get there. Possibly, he was being a little over cynical as some working class children certainly did get into the old grammar schools, but educational advancement was then, and still is, an up-hill struggle. I was very fortunate and had the opportunity to go to Cambridge, breaking the social and academic barriers. But make no mistake, those barriers are there. At that time I was one of a small number of students from a comprehensive school (equivalent of US public school) background, and certainly one of very few from a working-class background. These statistics have improved somewhat over the years, but have not changed dramatically. Staffordshire University is what in the UK is called a 'New University' (and of course in the UK

'new' doesn't carry positive connotations) – the equivalent approximately of a US state university. Typically, the entry level as measured by 'A' level points is far lower at new universities than old universities. At first sight, academic streaming within the university educational system, although certainly a matter of debate, can be a sensible approach to education. However, when you look at the outgoing level of achievement of these students, the idea of stratification on academic ability is far less clear, any who know the system – and in the US consider your own universities – will know that this is as much a social streaming.

Then from this, to Witswatersrand and the contrast in resourcing is deeply disturbing. Not least when you consider that South Africa is far from a poor country in global terms. Virtually all of you reading this article will be within the top few percent worldwide and within your own countries in terms of educational, nutritional and general lifestyle opportunities. Education is divisive.

Well, is this time for a post-Christmas guilt trip, a small donation (if there is any money left after the millennium parties) to an aid charity or does this have an impact on our teaching and work in HCI?

Well first I don't think we can avoid the issue – all education is by its very nature political. Think about student protests in Paris in the 1960's, Kent State in the US, school children shot in the streets of Johannesburg, Tiananmen Square. All across the world throughout the latter half of this century, students have been (depending on your viewpoint) the demonstrators for freedom and subversive elements of society. Education is fundamentally subversive – it encourages people to think.

In my last column I said that one of the key lessons I'd like HCI students to

learn is to be *intolerant*, not, of course, of other people or cultures, but of the computer systems they use. Intolerant of the status quo. Now that's subversive.

your sons and daughters shall prophesy, your old men shall dream dreams and your young men shall see visions

Joel 2:28 - NEB

However, there is also another lesson I'd like my HCI students to learn – imagination. I recall telling a research assistant many years ago when she was starting to design a CSCW system "just dream about what it could be like", not to get stuck with what she thought was possible or with what she had seen before. Science fiction and fantasy are perhaps essential reading here. One of the problems that task analysis has always faced has been how to get to the underlying requirements of the work without being tied to the systems that exist. Imagination allows you to break from the bounds of what is, to consider alternatives, to relax constraints, to explore alternative realities in order to return and change our own. Now that's revolutionary.

This doesn't just affect the context within which we teach, but also the content of what we teach. I recall one review of the first edition of our HCI textbook saying that the descriptions of chapter 2, on the parts and capabilities of computer systems, were irrelevant as everyone knows what a mouse is like. In fact, at the time that review was written, I knew personally of a distance education course being taught using the book in Africa – a course

where a large number of the students would have never seen a mouse and indeed the majority would only use a computer a few times during the year. In HCI we try to teach our students not to assume their users are like them, not to design systems for computer scientists or psychologists, but for the intended users. How easy to forget that lesson when it comes to the expected users of HCI curricula.

At aQtive we are struggling with what it means to design for a universal network-connected society. Most of our early adopters are likely to be what UK demographers have usually called 'class A/B' people – professional, educated, middle-class. But, for commercial reasons, we want to build software that also services the other 90% of society. Others, such as researchers at Interval, are attacking the same problem. In HCI we have a large body of experience and theory to cover professional work situations – indeed it is hard to avoid the word 'work' in HCI, perhaps because of our ergonomic roots. What about Web-TV, Barney, ...? Yes, we probably include video-controllers in our HCI courses, possibly video-games, but Tamagochis, Furbys?

But wait a minute, what was that about "universal network-connected society", who am I kidding? Internet-empowered TV may well create near universal access within some countries (in the UK more households have TVs than have bathrooms), but worldwide? Technology is divisive. In my own lifetime the pattern of food shopping in the UK has changed from predomi-

nantly local shops within walking distance to supermarkets reached by car. The prevalence of the car, especially amongst those with higher incomes, has meant that the retail industry has reorganised itself to be both more convenient and more efficient for those with cars (this same effect happened within the US many years previously). The knock-on effect is that the retail provision at a local level has lower turnover, less buying power and ultimately higher prices. Of course, those who do not have cars available are precisely those least able to pay. It is likely that the world of Internet commerce will mean that those without connectivity will not only be culturally deprived, but also economically disadvantaged.

These interactions with technology are not just at a broad social level, but also impact case-by-case deployment of technology. The impacts of email on organisational political structure are well documented and socio-technical analysis has long emphasised the importance of understanding the political and power relationships between stake-holders. These are well-established parts of HCI. Looking back, it is interesting that the Luddites have a bad name as those who stubbornly and ignorantly resist the progress of technology. In fact, the introduction of large mills during the industrial revolution in the UK was not primarily for technological or economic reasons, but explicitly to establish control over the 'workforce' who until that time had largely been independent producers and traders. In HCI education, we are used to encouraging students to

consider the broader work context; perhaps we should also be encouraging them to consider the broader social and political context of their future professional careers.

This education is a challenging business, but also so rewarding. I think back on some of my school friends who didn't manage to climb the educational system of the day. It is sad to look back on, but I have found it a privilege in recent years to work with students who are so like them, bright and excited about knowledge, but who would have not had the opportunity to achieve their potential not so many years ago. There is far to go, but we have come a long way.

This issue is coming out after Christmas and at the start of a new Millennium, 2000 years on from the birth of a small baby, the result of a teenage pregnancy of an unmarried mother, fathered by a carpenter, far from their extended family, who all became refugees. Now is that history or is it contemporary? But the best is yet to come, this same baby was visited by poor shepherds, but also, you know but savour it, three well-off academics. Small events can change the world, and perhaps we too have a part to play.

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