

Submission Requested by Standing Committee on Education and Vocational Training

Inquiry into Teacher Education

Supplementary Submission 82.2
TE Inquiry

Dr. C. Paul Newhouse (p.newhouse@ecu.edu.au, 08-9370-6469)
Director, Centre for Schooling and Learning Technologies (CSaLT)
Edith Cowan University

Engaging Students with Digital Learning Technologies

The lack of engagement of many children, particularly teenagers, with learning at schools has been a critical theme internationally and in Australia for many years. Our children are increasingly less interested and involved with learning activities at school that they often perceive to be irrelevant and unimportant. One of the strategies increasingly considered to reverse this trend has been the use of digital learning technologies (i.e. computer-related technologies adapted to support learning) (Committee for the Review of Teaching and Teacher Education, 2003). Schank and Cleary (1995) put the argument well.

Today's schools are organized around yesterday's ideas, yesterday's needs, and yesterday's resources (and they weren't even doing very well yesterday).

Enough is already known about natural human learning to start the process of change via the computer.

Good software has the potential to open worlds that were previously off limits, impossible, dangerous, or simply avoided by school systems.

However, they, as I, would also say that it is not the use of technology that will engage students with their learning, rather, it is the use of the technology to do meaningful, interesting and valuable things. For example, a few years ago I worked with two teachers and Year Seven students on a number of learning activities, including the creation of digital videos (Newhouse, 2001). Two girls informed me that their whole two-week video project had somehow been deleted, but not to worry they would quickly do it again (1 hour later it was completed – they had learned a lot). The following year I worked for a few months with a teacher and a class of secondary students using a whole range of digital technologies to work in small groups to develop a design for their school. This was a new way of learning for this social studies class (Newhouse, 2004). I knew that while I was helping these students and their teachers use the technology to provide high quality learning experiences this was not the norm for most children across Western Australia. Most of them would find the learning experiences I could offer in 1979 innovative over 20 years later. Here was the paradox that while newer technologies were expanding the possibilities, most children's experiences at school were limited to a small set, largely dependant on older technologies.

The connection between the use of digital technologies and learning in schools is not simple (Becta, 2002). For a more comprehensive discussion of the impact of the use of digital learning technologies on learning in schools please download my paper, *The Impact of ICT on Teaching and Learning* (Newhouse, 2002). However, it is becoming clearer that when used appropriately digital technologies have a substantial positive impact on the learning of most children. For example, a report from the ImpaCT2 study (Becta, 2002, p. 3) conducted in UK schools found that,

Differences in attainment associated with the greater use of ICT were clearly present in more than a third of all comparisons made between pupils' expected and actual scores.

Our research in CSaLT has confirmed international research that has found that while children, particularly teenagers, use a lot of digital technology in their lives they typically have very limited skill sets associated with only the tasks to which they apply the technology such as for

communication (e.g. messaging) and entertainment (e.g. games and accessing music). Generally they do not view the technology as supporting their learning at school and they do not perceive what they do at school as being either important or interesting (Becta, 2002). However, there is no doubt that when provided with the opportunity the vast majority of students respond well to using the technology at school and become more engaged with their learning. This has been well demonstrated at a government secondary school in Western Australia where all students use laptop computers to create audiovisual materials such as original music and video-clips demonstrating an understanding of a literary genre, investigate mathematical ideas through animations, political processes through document retrieval and production, and research the production of international cuisine using Internet research.

A small research project that CSaLT researchers have conducted over the past two years has looked at the differences in the use of print-based and digital textbooks by students in two classes at a local secondary school. One of the findings has been that without appropriate skills development and changes to the organization of learning activities students do not know how to use digital textbooks and probably learn less than when they use print-based textbooks. This underlines the continuing importance of the role of the teacher.

Teaching is becoming, and should continue to become, more technology enhanced. This necessarily increases the cost of preparing teachers more in line with a 'science' course than a 'humanities' course. Further, most current teachers need a substantial amount of professional development much of which could be well addressed through postgraduate study but they need incentives to do further study (e.g. scholarships, recognition for promotion).

As the USA Education Secretary states,

The problem is ... lack of adequate training and lack of understanding of how computers can be used to enrich the learning experience (US Department of Education, 2004, p. 22).

If you would like more than this short summary please contact me at Edith Cowan University.

References

CSaLT researchers have produced six reports for the W.A. Department of Education and Training (DET) but is not currently permitted to release them. Please apply directly to DET for access.

Evaluation of the 100 Schools Project Professional Learning Strategy (4 reports)

Evaluation of the Notebooks for Students Project (2 reports)

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