

# Chalk and Chips: Fitting IT into Education

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## **Abstract**

*Technology can facilitate learning yet experience shows there is limited success within schools. Teachers are encouraged to use technology without seeing the need or having the skills and confidence to move from the known into the relative unknown. The tension between teacher and technology is aggravated by a view that not embracing the technology demonstrates teacher inadequacy. Teachers are then put in the position of using technology because it is there not because it has value. The real situation is that technology alone will not provide positive outcomes and the significant skills teachers already have can be successfully applied to technology without the need for a revolution.*

## **Introduction**

We are told that technology can facilitate learning, encourage the development of higher order skills (Perris, 1996, p1) and is seen as a great motivator (Gilmore, 1994, p33). We are also told that in many cases school-based computing has failed to deliver (Marshall, 1993, p109 ). This lack of success originates from the strange dynamic between the Teacher and the Technology.

## **Technology and Teacher Metamorphosis**

Technology is a drug that has awesome debilitating power over teachers. There is a kind of change that comes over them whenever there is technology in the room. Teachers somehow stop being teachers and are reduced to mere mortals. To illustrate what I mean, take your average teacher. They have an incredible ability to make something out of nothing. Put them into a second hand shop or even a junk yard and they don't see bits of metal, wood or cardboard - they see display stands and hanging mobiles. What seems like useless rubbish to the untrained eye is transformed into unbelievably useful teaching material.

In the classroom, give that average teacher a colourful book to use and they don't just hand the book on to the student and say "Here you are, here's a book for you to read". Rather,

they look through the book and find pages that will motivate creative art work and enhance language or mathematics learning. You can almost see the teacher's mind flipping from idea to idea creatively extracting all the book's educational juices.

A mysterious metamorphosis takes place when you present that same teacher with a computer and software. In most cases that teacher will set up the computer, stand back, fold their arms and stop being a teacher. All the creative juices seem to fly out the window. Unlike other resources, the judgment of technology is based on what it can do, not what opportunities it offers.

A simple example is the use of word processing software. I know of only a few teachers using the word processor for anything other than getting the students to write or publish. The word processor, like a good book or a piece of cardboard, can be used for a wide range of activities well beyond its face value. What about creating cloze activities, prompted writing and word analysis activities or interactive forms and self paced activities sitting in templates?

A teacher using only a word processor, could concentrate on being creative with it and match the technology to their student's needs without needing to learn a whole new set of skills. Simply break through the creative amnesia and treat computers like any other resource - with lateral thinking, imagination and ingenuity.

We know it is not a teacher's role to teach computer skills independent of other learning outcomes. Teachers are unlikely to spend much time explaining how a ball point pen works but do look at how they can get great results using it. Students are getting the computer experience they need from outside school. More and more students have access to computers at their own or neighbour's home. In 1986 only 7% of homes had computers. By 1994 this figure had risen to 19% and has been rapidly approaching the 25% level of the USA (Perris, 1996, p1). For the majority of students the generic ideas picked up at home will easily transfer to the experiences offered at school. The real challenge is how technology can be used to improve teaching and learning. We have to replace the question of "What can it do?" with "What can I do with it?".

## **Introducing Teachers to Technology**

The current process of introducing technology is to put pressure on teachers to use it and dump it in front of them. The adoption of technology is not left to the teachers who have to integrate it into their classroom. Communities often encourage their local school financially to

invest, to 'bring their children into the technological age'. But where does that leave the educator? Teachers are barely coping with the developing roles that are 'gently' placed upon them without the added burden of finding some use for technology. The uninvited inclusion of technology can potentially do more damage than good.

The strong desire for equality and the perceived responsibility to make sure that all students get a chance to 'have a go' means the classes are often rostered and teachers given a time slot to use a computer ( or the internet ). For example; Fridays 1 to 3 o'clock or the first three days of each month. Within classes the same system applies with children having 'turns' with the computer in some rotational system. This push for equity means that teachers try to 'add' the computer to what they are doing. They may be working on a Social Studies/ Health unit on 'Themselves' with no software that relates to that topic. In goes 'Where in the world is Carmen Sandiego' so that they are at least using technology and every student gets a chance to play with it.

Many teachers use software that isn't designed to meet the specific student learning needs. The teachers simply use what is available in order to maximise computer use. When software is available teachers assign an entire class of students to it, even though a significant proportion of the students may not need the skills being taught (Marshall, 1993, p81 ).

If schools had that same approach to tape recorders, teachers would rush round looking for tapes that could fill in their time slot instead of using the tape recorder only when it had some educational relevance to the current topic and needs of the students. Technology, likewise, needs to be used for relevant educational goals not used because it is 'my turn this week'. By throwing teachers in the deep end, not only is there a waste of precious financial resources, but the students have modelled that the technology is in the way, or is a toy.

## **Teacher Revolution or Evolution**

Providing lots of resources is also not the answer. A project in Perth, Australia, delivered 200 hours of education television to schools in 1993. The real test of the success of the project is an assessment of the impact of the Project on the teaching and learning processes in the participating schools. After most schools had recorded in excess of one hundred programs, an analysis of the usage of the videos revealed that the tapes had not been widely used (Oliver R. et al., 1994, p37). Although teachers had expressed very positive attitudes towards many of the tapes, the low use was due to a wish to review tapes before use and the

curriculum constraints imposed by having already planned their teaching for the terms during which the new programmes arrived. Until each teacher had spent time evaluating the 200 hours of video the resource would not find its way into the classroom.

Professional development is frequently seen as a way to jump start teachers into technology. Unfortunately, in-service training normally deals with introducing teachers to the equipment, preparing them to use a computer or modem, or how to manage the hardware in their classroom. This training, however does not meet the need of training teachers in the pedagogical uses of computers (Gilmore, 1994, p22). In reality teachers see PD not as Professional Development but as Periodic Detention with a minimal long term benefit. Teachers do not have huge amounts of time and simply introducing them to lots of technology will not lead to successful student outcomes. The level of teacher competence with technology has been shown to be less valuable than teacher confidence (Gilmore, 1994, p33). Teachers will display confidence and adopt technology when they see it's relevance to the learning not when they are confronted with a huge amount of software and hardware or when they have been to numerous courses on how to digitise video and connect their modem.

Teachers are told that there needs to be a revolution in the way they teach, but they are reluctant to let go of what they know they do well, in exchange for uncertainty. Going out and buying more technology or spending precious time learning about it, without purpose, only encourages that reluctance. There is change needed but the technology won't bring about that change. Let a teacher apply existing creative and innovative skills to simple effective technology and there will be change, more like evolution than revolution.

The key to successful integration of information technology into schools is for teachers to remain teachers and make use of information technology to achieve the goals they already have for their students.

## References

Gilmore, A.M. (1994) NZ Journal of Educational Studies, Vol.29, No.1.

Marshall, G. (1993) The Challenge of Change: Questions and Resources for Computer-Using Educators. ISTE, 1737 Agate Street, Eugene OR., USA.

Oliver R., Grant M. and Younger G. (1994) The Perth Educational Television Project. Australian Journal of Educational Technology, Vol.10 No.1.

Perris, L. (1996). Schooling for the Future: Information Technology The NZ Education Gazette,  
Vol.75, No.4