

## OPINION

### Playing catch-up with digital realities: teaching in the electronic age

*Dale Spender 27 February 2008*

When most of today's teachers started work, their role was clear. They themselves had done well at school (and college and university): they were good at writing and reading, at studying and passing exams - which was how they had qualified to become teachers. Their training had taught them what it was they were supposed to teach, and they were usually informed that the greatest challenge they would face in the classroom was how to maintain discipline!

A quiet and orderly classroom was a precondition for teaching and learning. So students were seated in rows - often on their own. Such isolation discouraged talking, minimised copying and cheating, and made concentration easier.

Teachers were the knowledge keepers and they were in charge: they could do the chalk and talk. The students could take notes, study their books, memorise the material, and prepare themselves for providing the right answer in the exam. A silent classroom was the sign of a good teacher - and of a good learning environment.

In those days, grading and assessment was a big job: marking took a lot of time - but it was relatively easy work. The syllabus usually set out what the students needed to know - and the teacher decided whether they did or didn't know it. When they did - and they passed the tests and exams - the students could move up to the next level at the year's end. (Most parents well remember these experiences.)

Even homework was fairly straightforward. Some kids had encyclopaedias at home and could look up and copy out extra information, and get better marks for assignments. But if teachers just handed out basic exercises from work sheets or textbooks, it was a pretty level playing field: learn these spelling words for a test; do these maths problems for tomorrow's lessons; finish this work sheet on rust in wheat, the alimentary canal, the kings and queens of England; read this chapter and make some notes. Homework tasks that could be quickly and easily marked in class were often favoured.

Professional skills were involved in this transfer of learning from teacher to student. In the basement of Sydney Teachers' College for example, there was corridor upon corridor, each one lined with blackboards on either side. Student teachers spent hours in these grimy conditions practising their writing - until they reached the required standard with the chalk. Some took lessons on Gestetner and Fordiograph machines (that could produce multiple copies of a work sheet from a stencil), and even learnt the basics of setting up the projector - "for a rainy day".

But such a calm, quiet and controlled life was not to last. While classrooms in the developed world might not have changed much from the Middle Ages to the 20th century, they have become almost unrecognisable as the classrooms of the 21st take shape. Because there has been an education revolution. And it wasn't the teachers who started it all: the pressure for such dramatic change came from the students - the digital natives.

The home computer came first. Adolescent boys changed over night. They were no longer all that interested in taking cars apart and even bike-riding lost some of its appeal: they wanted to play computer games, experiment with software programs, do some music "pirating". And they wanted to do some of these things in the classroom.

Teachers struggled to maintain order. But the forces of disruption were too great. The new gadgets had already captured the minds of their students - who seemed to have lost to their ability to study and concentrate. Students didn't want to read and memorise things; they wanted to do things, to create new works - everything from web-pages to music mashes and movies!

It became harder and harder for teachers to persuade or push them to sit still, to be quiet, to read - and get on with their work. For early childhood educators it was shock and awe when even the very young ones who had just started school kept pestering their teachers to let them play computer games or send emails.

But the battle of the books was lost. For the first time in history, the home was likely to have a computer and Internet connection - and a resource base that was bigger and better than that of the average (book based) school. The students brought into the classroom new knowledge, new sources of information, and new experiences from their online networks, that could dwarf the knowledge base of an individual teacher - or a textbook.

Once Google, Wikipedia, Facebook, YouTube and [essays online](#) became the realities of everyday life for the students, teachers lost the control of the information that had been crucial to the ordered classroom. Lesson plans would not work: answers were questioned, and assignments and assessments were suddenly in doubt.

Students were told again and again that information on the Internet was unreliable; that you couldn't trust the entries in Wikipedia, and that it was cheating to download information from webpages when writing essays. But the warnings fell on deaf ears, and the students persisted with their preference for their online and ever-changing digital knowledge base.

Most net savvy kids grew increasingly frustrated with the old practices of the school. A computer might be placed in a classroom only to be treated with suspicion by the teacher - who understandably, didn't know what to do with it. Often it was kept locked away so it wouldn't be broken - or stolen. And if and when it did see the light of day, it was generally regarded as some form of typewriter; the students who had already acquired a sophisticated online life were then subjected to lessons on naming the various parts of the machine, and how to open a file.

"You have to power down when you go to school", the students declared as they also came up with a new definition of homework: "I can hardly wait till I get home so I can do on my computer all the things they won't let you do at school."

Some schools got the message and made the big shift to cater for the needs of their students - to rethink teaching and learning in relation to the impact of computers. But they haven't always enjoyed much support.

Parents who had been worried that they didn't know what their kids were doing all day on their computers at home - soon started to worry about what they were doing all day on their computers at school. What about handwriting? Mental arithmetic? And weren't calculators and spell check a form of cheating? Shouldn't they be banned in the classroom?

Didn't students have to know their work? It wasn't good enough just to be able to find it when they wanted to do something!

Politicians got in on the act when they were confronted with classrooms where the kids were "wired" - where they worked in groups, wandered round, and made a lot of noise in the process. Even Prime Ministers were out of their depth when they realised that students were presenting their work not as essays - but as webpages, graphics packs, podcasts - or videos.

What about the old standards? What about the old subjects and the old familiar textbooks? Where history was history, geography was geography, where the answers were right or wrong, and everyone knew where they stood?

What about learning? It was accepted that there was a point in sending kids off to learn a chapter from their textbook, but how could they learn a webpage, or an animation? This wasn't learning - it was playing!

Administrators and assessors faced unmanageable problems as they tried to stick to the old system. When a group of students made a movie, how could they be marked as individuals? Was the job of scriptwriter worth more marks than that of the actor or the director?

This evidence of the education revolution is to be seen everywhere. It has created havoc in every institution and disrupted every aspect of learning and teaching. The system is reeling under all the pressures. Amid all this chaos are the teachers whose training has not even begun to prepare them for the classrooms they now find themselves in. And there are precious few teacher-educators who know how to teach teachers to teach in the age of the Internet.

No one has been here before. There are no tried and true models that teachers can follow to deliver an appropriate education to today's students. The best of our teachers are being driven to distraction as they continue to be judged by the old standards, (literacy tests and a quiet classroom) while they desperately try to survive in the cut-and-paste context of the new.

The education revolution isn't some desirable goal for the future; it's been here creating confusion for most of this century. What is urgently needed is a coherent plan for dealing with its consequences. This means starting from scratch with the fundamental question - what would be a good education for Australian citizens in the information age?

Most of the amazing Internet skills of today's students have been acquired - *outside the classroom*. In the absence of digital-based education, the net generation has been hugely successful in teaching themselves the skills they need for the workforce.

(More than 70 per cent of Australians are now making their living out of thin air - producing something at the workplace that you can't drop on your foot!)

Yet how much better would their skills be if they had trained teachers to guide them, to analyse their strengths and weaknesses and provide feedback? The digital natives might excel in messaging, mixing, mashing and moviemaking, but they are usually a little short on judgment, reflection and perspective - all essential qualities that can be encouraged by a good teacher, and fostered by a good education.

It will take much more than a few additional classes or courses for the education system to catch up to and accommodate the education revolution. It will demand of parents, politicians, policymakers, - and commentators in *The Australian* - that they abandon some of their cherished practices and rethink what education is for and just how the system will need to be transformed for the 21st century.

Now that students don't have to gather together in the presence of a teacher to get their information, or to polish their digital literacy/numeracy skills, will there be the need for the same number of classrooms? And now that teachers no longer control knowledge - should they become experts in other fields? Should they be developing ground breaking educational software that forms a national resource base - that is the envy of the rest of the world? Should they become learning specialists?

Or maybe they could put their energies into professional development, designing resources for teachers - and creating new repertoires for the art of teaching. Only when we have a coherent plan for training our teachers for the digital realities, will we be able to manage - and make the most of - the education revolution that has been with us - since the Internet connected home computers.

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