From tools of knowledge to tools of creativity

Dr Tim Kitchen
Head of Learning Technologies
Strathcona BGGS

Traditional teaching methods derived from an education system based on the Industrial Revolution of the 1800s no longer meet the needs and demands of the modern day student. Many educators are using Information and Communications Technologies (ICT), in particular web based technologies, to share information in classrooms and lecture theatres all over the world. However ICT are not just engaging tools for sharing data and information, more importantly, they should be seen as tools for creativity in assessment, creativity in design and creativity in learning.

The 1980s and 90s saw a shift from the Industrial Society to the Information Society (Beniger, 1986). Then, as we realised that having easy access to information was not sufficient in itself to bring about meaningful learning experiences, we shifted from the Information Society to the Knowledge Society (Drucker, 1994). Some educators are now arguing that a further paradigm shift is required, a shift from a Knowledge Society to a Creative Society (Resnick, 2008).

Kearns' (2002) study of national and international policies for ICT in education found that, due to technological advances, ICT were now seen as instruments for the internationalisation of education. They have provided international resources that are able to enrich education and heighten its relevance in a global society and economy. Kearns' suggests that the dream to aspire towards an international information environment where information can be freely available to share between teachers, researchers and students is becoming a reality. However, while addressing the requirements of what he terms *the emerging knowledge society*, Kearns' outlines some issues that are common throughout the world including:

- dealing successfully with the pace of change;
- addressing the learning and skill requirements of the new era;
- providing equal opportunities for all citizens;
- helping business and industry to adjust to work within the knowledge society;
- helping individuals and communities deal with the changes; and
- encouraging schools and teachers to cope and deal with the new order.

(Kearns, 2002, p.16)

Mitch Resnick (2008) says that aiming for a Knowledge Society alone is not what education should be about.

> *'Success in the future – for individuals, for communities, for companies, for nations as a whole – will be based not on what we know or how much we know, but on our ability to think and act*

creatively. In the 21st century, we are moving towards the Creative Society (Resnick, 2008, p.12)*'*

Being creative in expressing knowledge should not be exclusively seen in the realm of Arts departments. Being creative in expressing meaning through knowledge and creatively demonstrating learning experiences is an important part of all learning experience in all areas of education and ICT offers countless opportunities for this to occur.

This is not a new thought, educational researchers have suggested for many years that the best learning experiences for most students are derived when they are creatively engaged in design and invention not just interaction (Bruner, 1963, Papert, 1980; Resnick, 2002). One way to judge the educational credentials of a new piece of software is to see what can be created from it. Are students able to use the software to express themselves and demonstrate their knowledge?

Many teachers are being praised for using ICT in their teaching, but are they stimulating and encouraging creative learning opportunities? There has been some concern from education psychologists that the pressure teachers feel to use ICT in their curriculums has resulted in a stifling of opportunities for creative expression and learning. Instead of being creative and using ICT to enhance learning opportunities, it has been common to see students involved with mindless and passive interactions (Cordes and Miller, 2000; Oppenheimer, 2003). How many times have you seen or heard about examples of students going straight to wikipedia, copying slabs of text, pasting this text into a word document and calling it research? What is even more concerning is that there appears to be a growing market on the Internet for assignment shopping. Students can search for their project topic online and download (for a fee) a completed assignment, package and ready to submit, all they need to do is add their name and change a few words to make it appear authentic.

Change in technologies is occurring at a rapid rate, which in turn increases the pace of change in all aspects of society. Change is a constant phenomenon, which education systems traditionally find hard to deal with. Michael Fullen (1993) suggests that the systems used to train teachers, organise schools, establish educational leadership and the way that education is treated by politicians all result in a system that is very slow to change. He suggests that change cannot be expected to occur along side a conservative system without expecting constant aggravation. When change is attempted within such a structure it results in '*…defensiveness, superficiality or at best short-lived pockets of success*' (Fullan 1993, p.3). Society expects schools to prepare its young people to deal with change, yet in most cases schools are far from fulfilling this expectation. Fullan (2003) says that effective and lasting change occurs when a collaborative environment is established and appropriate resources are provided. When people see the value in the change they will respond positively.

As educators we can not control the pace of change in society but we can encourage our students to deal with change in a creative and thoughtful manner. Students are usually going to know more about the latest technologies than their teachers. Jukes (2006) describes the current generation of teenagers as living and operating in a '… *multimedia, online, multitask, random access, color graphics, video, audio, visual literacy world'* (Jukes 2006, p.41). He says that this is the first ever generation in human history to have mastered society's tools before the older generations have, '*…it's their native tongue – a language in which they are digitally fluent'* (Jukes 2006, p.11).

It is the responsibility of teachers and parents to encourage young people to be selective and creative in the way they deal with the mountains of data that are at their fingertips. They need to guide, educate and promote the positive aspects of ICT; to encourage the young people in their care to be aware of the pitfalls and help them make good and wise decisions that promote life long learning and positive relationships with local and global communities.

There have been many great examples of ICT that encourage creativity and invention. *Microworlds*, *Lego MindStorms* and *PicoCricket* are examples of software that encourages invention, expression and creativity as well as teach a range of programming techniques, allowing users to invent there own software. *Adobe Flash* offers a set of tools that enable users to design their own animation products with programming options (if so inclined) via *ActionScript*. Most presentation software such as *Microsoft PowerPoint*, Apple's *Keynote* and *Open Office Presenter* provide simple tools that also allow for the creation of non-linear stories, games and presentations of projects.

One of the most popular communication mediums today is video. Thanks to programs like *iMovie* and websites like *YouTube*, the ability for anyone to make a short video production and have it available for the world to view is now very possible and relatively easy. Viewing TV shows, short video clips and movies on demand via the Internet is vast become the norm.

There are a wide range of excellent video resources available on the Internet that help teach almost any key learning concept in almost any key learning area. Educators around the world are seeing the value of video as a teaching tool and are constantly adding to this vast resource. *TeacherTube.com* is a website that enables educators to freely add their video material for the rest of the world to view and use or, if so required, establish a private collection of video resources exclusively for their school or class.

Some schools are seeing the value of these new technologies and are setting up their own virtual television stations for their school community. Most schools have access to video cameras and simple video editing software like *Moviemaker* and *iMovie* and if there is a lack of expertise in this area amongst the teaching staff, there is bound to be a budding Steven Spielberg amongst the student population. Filming short demonstrations in the classroom of important areas of knowledge or key skills then uploading them to *TeacherTube* for wider students access can be a very valuable

teaching tool. Having students produce short video productions to demonstrate their knowledge and learning experience can be a very valuable form of assessment and a tremendously engaging and creative learning experience for all involved.

Some teachers and students are going to quite an advance level of video production. High definition cameras and industry standard editing software like Apple's *Final Cut* are becoming more affordable. Schools are making their own DVDs of special events and some are even setting up their own regular TV news services for their school community run by interested staff and students.

There are many ways teachers can make use of modern ICTs to facilitate engaging, creative and effective learning environments for their students. The important thing is that they make an effort to break away from the traditional teacher centred approaches that go back to the start of the Industrial Revolution.

We have moved on from an *Industrial Society* to an *Information Society,* then to a *Knowledge Society* and we are possibly approaching what will be termed the *Creative Society.* As educators it is important that we keep up with these changes and ensure our teaching methods and curriculum are relevant with what is happening in the wider world.

REFERENCES

Beniger, (1986). *The Control Revolution: Technological and Economic Origins of the Information Society*. Cambridge, MA: Harvard University Press. Bruner, J. (1963). *The Process of Education*. Cambridge, MA: Harvard University Press.

Cordes, C., & Miller, E. (2000). *Fool's Gold: A Critical Look at Computers in Childhood*. College Park, MD: Alliance for Childhood.

Drucker, P. (1994). *Knowledge Work and Knowledge Society*. Edwin L. Godkin Lecture, John F. Kennedy School of Government, Harvard University, Cambridge, MA.

Fullan, M. 1993, Managing Change, *Restructuring Brief, a publication of the North Coast Professional Development Consortium*, accessed 10 January, 2008, from <http://www.smcoe.k12.ca.us/pdc/PDS/restruct5.html>.

Jukes, I. 2006, *Understanding Digital Children (DKs), Teaching and Learning in the New Digital Landscape*, The InfoSavvy Group, accessed 10 January, 2008, <http://www.thecommittedsardine.net/infosavvy/education/handouts/it.pdf >.

Kearns, P. 2002, *Towards the connected learning society: an international overview of trends in policy for information and communication technology in education*, Department of Education Science and

Training, ACT, Australia, accessed 10 Januray, 2008, <http://www.dest.gov.au/NR/rdonlyres/5526D69E-132A >.

Oppenheimer, T. (2003). *The Flickering Mind: Saving Education from the False Promise of Technology*. New York: Random House.

Papert, S. (1980). *Mindstorms: Children, Computers, and Powerful Ideas*. New York: Basic Books.

Resnick, M. (2002). Rethinking Learning in the Digital Age. In G. Kirkman (Ed.), *The Global Information Technology Report: Readiness for the Networked World* (pp. 32- 37). Oxford: Oxford University Press.

Resnick, 2008 Computer as Paint Brush: Technology, Play, and the Creative Society, MIT, USA

Dr Tim Kitchen is the Head of Learning Technologies at Strathcona Baptist Girls Grammar School in Melbourne. Tim has a strong passion for encouraging ICT use (in particular multimedia) in all levels of education and promoting constructivist teaching approaches. He is a regular presenter at a range of state-wide, national and international education conferences, a member of the VITTA committee and he writes for a range of educational textbooks and journals.

Outside of ICT in education, Tim has a strong passion for interfaith dialogue and coordinates the eastern region of the

Victorian Building Bridges program. He is married and has a beautiful 8 yr old daughter. His other passions include video editing, bike riding, watching cricket and supporting the StKilda Football Club.

Direct phone line - 8779 7586

Fax - 9888 5440

email: tkitchen@strathcona.vic.edu.au

web site: http://timkitchen.wikispaces.com