

Why use these technologies?

The technologies that we now have available open up vast opportunities to create a new education paradigm. The expectations of the learners, the relationship between the educators and the educated, and theories on what is valuable learning are all being radically challenged. There always remains the temptation to use the technologies to continue teaching what we have always taught and in the way we have always taught it. We must resist this temptation and develop a new vision for what education could now be using the technologies that are now available.

This is a window of opportunity that has arisen due to the opening up of the information conduit, potentially allowing anyone to be able to access any information in an interactive environment at little cost. The teacher as the information conduit is no longer a valid descriptor. The role of the teacher can now be expanded and the type of education our children receive will be one primarily of engaged learning. Before we go on I must make the point that the role of the teacher is not singular, it is multi-faceted and one of those facets will be the traditional standing in front of the students and lecturing as we have always done. The technologies will not replace this role; they will augment it, such that we do not have this as our main role and do not spend most of our time preparing information units, worksheets and imparting information in a 'broad band' manner. The technologies now allow us to simultaneously deliver information that is customised to the needs of each learner.

Gone are the days of broadcast education. We can now narrow the delivery of education to meet the specific needs of the individual student. The technologies we have available now allow students to skip sections they understand, review sections they are unsure of and receive targeted assistance where they need it.

It is for these reasons that when we look at technologies, we must do so not from the point of view of how they deliver (technically speaking), but from the point of what they deliver. To know what we want them to deliver we must have a firm vision in our minds of what we believe our schools are here for.

In the past educators have often viewed programs that focus on work related skills as being for those of lesser ability. If this ever was the case, it is no longer so. Today and tomorrow's workplaces are far more demanding than they were in the past. The community per se, not just the workplace, requires citizens that can think critically, problem solve, demonstrate innovation and ingenuity and be able to access, synthesise and analyse information. These are all higher order thinking skills which we must encourage our students to develop, if they are to cope successfully with the changing social, academic and workplace landscapes.

The greatest opportunity that the new technologies offer us is in the area of encouraging engaged learning. Some of the elements that can assist in providing an engaged learning environment include:

- Student led decision making, task selection and assessment
- Activities and tasks that are authentic and relate to the real world
- Activities and tasks that are 'multi media' ensuring a greater number of learning styles are catered for
- Activities and tasks where the emphasis is on collaboration and group work
- The teacher as the facilitator, modelling the types of attitudes to learning that they want their students to develop
- Students being active participants in the learning process, not passive spectators
- Passing the discovery role on to the student and having them report back to both their peers and their teacher(s)
- Allowing multiple pathways towards the meeting of the predetermined and possibly negotiated objectives
- The applications of appropriate technologies whereby students are able to access, manipulate and then present the information to appropriate audiences
- Tasks that are attainable through the collaboration of the group and not necessarily by any one individual
- Assessments that are 'in situ' and relate to the objective of the unit or task being done, and vary in what they assess and how they assess

Searching the Web is supported by the resource '1000 of the best Internet Sites for Educators' by the same author and available in New Zealand from Teachers@work; PO Box 45-007 Te Atatu Peninsula, Auckland and in Australia from Hawker Brownlow Education; Box 580, Cheltenham, Victoria 3192

Activity 1

Purpose: *To determine whether a site meets its objectives.*

Locate the following web sites by typing in the URL (Universal Resource Locator) into the location bar at the top of the web browser page.

Make a brief comment on what subject area the site would be useful for. Also comment on the reading age of the site and whether this is a teacher information site or a site developed for students. Complete the table by commenting on the use of graphics on the page ie. how much visual information the graphics communicate and how effectively they do this.

URL	Subject	Reading age	Teacher site, student or both	Visual info rating
http://fitlife.com/				
http://www.sikids.com/				
http://visembryo.ucsf.rdu/				
http://www.eduweb.com/amazon.html				
http://www.pbrc.hawaii.edu/~kunkel/wanted/mugs/				
http://www.cue.com/				
http://www.academic.org/				
http://www.crayon.net/				
http://www.svi.org/				
http://www2.plaguescape.com/				

Activity 2

Purpose: *To determine the site's relevance to what is being taught and whether the context(s) used are relevant or possibly outside the students' experience.*

Locate each of the URLs below and comment on what you see as the teaching idea or principle behind the site. Also rate the site (out of 5, 5 being excellent and 1 being very poor), on the strength and validity of the context.

URL	Teaching Idea/Principle	Rating
http://www.learner.org/exhibits/literatre/		
http://www.headbone.com/derby/		
http://www.eduweb/insideart/		
http://www.c3.lanl.gov:80/mega-math/		
http://www.cyberfilmschool.com/		

What do our students think of all these technologies?

In a poll¹ carried out by CNN, the Gallup Corporation, the National Science Foundation and USA Today, 744 year 7-12 teenagers were asked what they thought. The results:

- Virtually all teenagers (99%) say they have used a computer at some time in their lives.
- 82% of teens think strong computer skills and an understanding of technology will be essential for their future success.
- 80% indicate they use a computer on at least a weekly basis.

The students seem to have the right attitudes and perceptions, but unlike the marketing business where perception is reality, in the educational technology business reality is reality.

- 77% would prefer to conduct research for a school report by surfing the Internet, rather than using books and magazines.
- 71% rate their computer confidence at a level of '6' or better on a scale from zero to ten, where ten is very confident and zero is not confident at all.
- 67% say they have a computer at home.
- Roughly two-thirds consider space exploration, new advances in computers and advances in medical research to be exciting subjects they'd like to learn more about.
- 62% say they can usually figure out on their own how to operate a piece of electronic equipment or computer software rather than needing to ask for help.
- 59% would prefer to live in a house filled with high-tech equipment and appliances when they are adults rather than a 'simpler' house.
- 58% would like to spend more time than they currently do using a computer.
- 55% have had the opportunity to use the Internet.
- 54% report that either they or one of their siblings have the job of programming the VCR in their household, rather than a parent.

The students seem to have the right attitudes and perceptions, but unlike the marketing business where perception is reality, in the educational technology business reality is reality. Just because these students can use the technologies for their personal information use does not mean they can apply the same rules to their use in educational situations. If we continue, as we are at present, to throw technology after technology at our students without empowering them to use the technologies as effective learning tools, then the attitudes and perceptions shown above are unlikely to spill over into using the tools in the educational sphere of their lives.

The role of Information Technology

To be effective in the school/classroom technologies must meet three criteria.

- The technology must be very simple to use. Its operation must be mainly intuitive and it must not require a 505 page manual just to get going.
- The technology must produce obvious educational outputs. A doctoral investigation should not be required; those outputs should be obvious.
- The technology must represent good value for money. In turn for the money it costs it should return measurable educational outcomes more effectively than spending the money in other ways.

¹ <http://www.nsf.gov/od/lpa/nstw/teenov.htm>