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Australasian Association of International Baccalaureate Schools 2009 Conference

Human Ingenuity: Pedagogy for the 21st century

Prince Alfred College, Adelaide: 19th April – 9.15

abstract

**Creativity/ Ingenuity – Core Competencies in the 21st century**

or subtitle

***TODAYS STUDENTS ARE NO LONGER THE PEOPLE***

***OUR EDUCATION SYSTEM WAS DESIGNED TO TEACH***

35 mins video clips

Introduction:

I could spend days on describing the origins of the traditional education system that we are the products of – but very briefly – it was the brain-child of one, Thomas Arnold, the Master of the famous English school Rugby, in the 1820s

It was he who departed from the traditional education system of his day - theology and the classics – and introduced mathematics, modern history, and modern languages: along with the **grading** of students into years – and the beginning of the prefect system!*In the early 19th century*.

<http://www.spartacus.schoolnet.co.uk/EDarnold.htm><http://en.wikipedia.org/wiki/Thomas_Arnold>

THOMAS ARNOLD

What we have today is pretty much that framework - with all the countless add-ons

However, we do have to recognise that an education system that so well served the 19th century move to industrialisation, is not the system that will work in the 21st century age of - **information making.**

One of the primary aims of the 19th century was to train the newly emerging factory workers to follow instructions in the age of standardisation. Whereas the primary aim of an information generating age -- is to resource people to be **creative and innovative.**

(More than 75% of Australians now make something at the workplace that you cant drop on your foot!)

1 Ken Robinson: Creativity in Education 8.22

[http://video.google.com.au/videosearch?q=ken%20robinson%20creativity&oe=utf-8&rls=org.mozilla:en-US:official&client=firefox-a&um=1&ie=UTF-8&sa=N&hl=en&tab=wv#](http://video.google.com.au/videosearch?q=ken%20robinson%20creativity&oe=utf-8&rls=org.mozilla:en-US:official&client=firefox-a&um=1&ie=UTF-8&sa=N&hl=en&tab=wv)

*John Howkins, the author of Creative Economy; how people make money from ideas and his more recent book, Creative Ecologies: where thinking is a proper job -- has stated that 72% of the new jobs of the past years have required people to be creative: this is very different from ‘following instructions’.*

Creativity is at the heart of the information age. We now need an education system that reflects our 21st century world.

Yet even though this morning I may be able to present the most rational arguments using the most persuasive prose – to the point of convincing everyone here that an education revolution is now not only inevitable – but desirable – it would not be wise to count on an enthusiastic, or even a willing transformation.

The Good Old Days

For whatever the reason, many well educated and well intentioned people believed then – as now -- that what they were taught, and how they were taught – is the ***only*** form that education can take.

Today they see the extraordinary changes that I am going to discuss, but they see them **as a threat**. To them, online learning - and the reality of the internet - are undermining standards.

Kevin Donnelly for example, goes so far as to insist that these new media are dumbing down the entire education system, and the next generation along with it.

For some of the critics –

* social networks,
* mobile phones,
* video games,
* the cut-and-paste of music **and text** – and txtng and messaging –

are not the evidence of a new communications revolution that is no less powerful and pervasive than the printing press was 500 years ago: *they are destructive forces that are vandalising our language, our thinking, and our learning.*

Opportunities

I am not going to hold up the new technologies as a panacea for all ills. Like many people for whom reading and writing has been a core activity, I have regrets about the passing of an age.

(In much the same way as I am sure the medieval monks lamented the passing of those beautiful, illuminated, sacred manuscripts. when the printing machine started to spew out so many ‘soulless’ books!)

But I know that with each new communications revolution have come amazing new opportunities for learning and living.

* Socrates was against writing because it would undermine memory – but it was the basis of civilisation?



* The medieval church was against the printing press – and went so far as to ban books, burn authors, break up presses – but the age of enlightenment, the scientific revolution – and the growth of democracy – all had their origins in the book and its availability.



* And now the internet – the world wide web – the mobile phone and all the associated new media forms – afford almost incomprehensible opportunities for education – and for society.

Constructive criticism

Some commentators … feel vindicated if they can find some ‘flaws’ with the new technologies in the classroom. But this is not my approach.

I too can be a critic of the new media -- as I was of the old, in my role as an English teacher in the 60s and 70s.

But where I see limitations with the new literacies, I don’t condemn the computer and shout - shock! horror! Penalise them! Throw them out!

If there are problems, then the challenge for me as an educator is to find better ways of using the new media for educational purposes.

**Because digital is not going to go away.**

Every year the world goes digital -- more and more. It’s still in its early stages, and as responsible professional educators we need to play an influential role in refining and shaping its uses for education.

New forms

I remind myself that the printing press was around for more than 250 years before our first novels emerged. And we have spent more than 500 years refining the medium to meet our educational needs – with our textbooks, written exams, essays, etc.

So I am not going to condemn the new technologies after less than a decade - on the grounds that the many different genres, possibilities, networks that they have engendered –are all that there is – and that they might need a few modifications.

It is partly because educators are **not** contributing to the new culture and educational applications, that the medium is, at the moment, almost entirely the product of students and geeks!

A case study

Lets make this more practical; I’d like to just take you through some of the changes that have taken place in my life – starting with this presentation:

For all of my life I have been a very text literate person: in the last 20 years however, in order to do my work, I have had to acquire new skills.

* BG – Before Google -- it would have taken me weeks (perhaps months) to have done the amount of research that is involved here – and it would not have been nearly as up to date.



* Even if I had been able to obtain as much information as I have covered for this presentation, even more time would have been involved in sorting it, organising it – managing it – trying to figure out what was relevant and what was not – and how to arrange it



* My research would have been primarily with journal articles – where there were always problems about availability – and it would have entailed reading through many, many pages to find what I wanted – and then copying it by hand!



* When what I have actually been doing is -- *watching online videos for ays*

I did of course have a framework for this before I began – it is the area of have been working in for the past two decades.

But online learning and researching and using - is still almost effortless in comparison to print/book research.

And I have to tell you- I have far better recall with video clips than I do with paragraphs of print.

And believe me – it is more **fun**, and more satisfying.

Having worked in both print and with screen -- – there can be doubt as to what I prefer!

Websites/ videos

One of the websites I looked up for this presentation was the Library of Congress video clips on *digital natives. (It took me 5 seconds!)*And there I found a treasure trove; four of the world’s experts!

<http://www.experientia.com/blog/library-of-congress-lecture-series-on-digital-natives/>

1. Edith K. Ackermann (site) discussing “The Anthropology of Digital Natives” (video).
2. Steven Berlin Johnson (site) based on his 2005 best-selling book, “Everything Bad is Good for You - video not yet available
3. Michael Wesch – An anthropological introduction to YouTube<http://mediatedcultures.net/youtube.htm>

Something that should be compulsory viewing for all educators

1. Douglas Rushkoff (site), a teacher of media theory at New York University who recently wrote a pamphlet for the UK think tank Demos, will close the series with a lecture entitled “Open Source Reality’

I would have paid $thousands to have flown to Washington to attend these lectures – and here I was on a Sunday afternoon – in wet Queensland – and with one exception watching them on all my screen.

It’s better than TV of course – you can pause and skip and fast forward and rewind – and link with something else and back again: you can even stop and make some notes if you want. You can download and sometimes you can edit.

And you can send them to a friend!

This is how I learn these days. It’s got little in common with being alone and disciplined and slotted into old fashioned studying or memorising. (It makes my PhD look positively primitive!)

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Last time I gave a conference talk in Adelaide – I quoted experts: I even made slides of comments and findings. But these days I can bring the experts to you – this is the revolution that takes us as educators, from page to screen.

Page and Screen

I rarely read text online any more: because I know from experience – and the research of others – that almost no one does.

I know that the first rule of online learning and education is that **print is for page** and **visual is for screens.**

So if there is anyone out there putting text on a web page – they should know that **the only way it is being read is if it is being printed out** – and even then there are no guarantees that the eyes are going across and down the page!

(*The* ***F*** *Factor: for FAST and for the pattern of the eyes’ focus: eyes go along the top – for one line – then slide down – – then dart across the line again –maybe only half way - then down to the bottom: scanning and skimming for meaning: THE RIGHT HAND CORNER OF THE SCREEN IS NEVER ERAD!)*

And besides -- once it is printed out – **it is no longer digital!**

*Putting text on a webpage and saying you have online learning is akin to putting the words of a novel on a cinema screen and claiming you have made a movie.*

*And there is as much chance of people watching such a movie as there is of them reading text online. (Unless of course they are looking for material to cut and paste.) But that’s a different matter*

This is the way I learn. It’s not the only way. I still read lots of novels:

Its non-fiction where my habits have been transformed.

With all my exposure to digital, print matter now takes too long –

- and by the time books and journals are published, most of them are passed their use by date.

And this isn’t their *big* limitation in the information age.

The reality is that you cant do anything with them!

Online, however - it is hands-on activity; something happens. You are engaged, you respond, you put things together, make decisions, create new links and insights and information.

Reading and writing - with a pen! - are now for me cumbersome, slow, unwieldy, inhibiting;

I get very impatient with them. Just like the students.

Disconnect

Today’s digital natives are increasingly wired – they are communicators extraordinaire.

They spend far more time than mature members of the population not only communicating, but always on the alert for new and more effective ways of doing it.

Technology is absolutely integrated with their lives -- outside the educational institution.

And many of them are protesting:

* some are withdrawing,
* some are alienated
* and some are just plain problems in educational institutions.

But in the little research that has been done on student attitudes – the consensus is that the students are increasingly disconnected from their school experiences.

Most of them ardently wish that their teachers could use the technology that is so integral to their lives: and most want school to be more relevant and more engaging. More hands-on – creative.

2 Teach Us 4.08

[http://video.google.com.au/videosearch?q=nesbit%20k-12%20students%20today&oe=utf-8&rls=org.mozilla:en-US:official&client=firefox-a&um=1&ie=UTF-8&sa=N&hl=en&tab=wv#](http://video.google.com.au/videosearch?q=nesbit%20k-12%20students%20today&oe=utf-8&rls=org.mozilla:en-US:official&client=firefox-a&um=1&ie=UTF-8&sa=N&hl=en&tab=wv)

I could give you the statistics on the various types of technology and their usage - but I think this makes the point better. [[1]](#footnote-2)

3. LEARNING TO CHANGE: CHANGING TO LEARN VIDEO4 mins 27 seconds 8.3.09

<http://langwitches.org/blog/2009/03/08/learning-to-change-changing-to-learn-video/>

I must say that I couldn’t resist this: while I was checking up on the previous video -- I linked to this one – ‘My one year old uses the i-phone’.

Do indulge me – I think this makes a point as well.

4. 1 year old

<http://wlteam.blogspot.com/2009/03/new-strategies-for-digital-natives.html> My one year old uses the iphone:

Helen Blower, Digital Strategy Director, Columbus Metropolitan Library

Literacy is changing.

Literacy is changing. Reading and writing are changing (Arithmetic too – but there isn’t time to deal with it here.) Literacy has been changing since reading and writing were invented – but they are now changing at an extraordinary rate.

Print literacy has been essential in education; if you couldn’t get the hang of reading and writing (and it seems that many cannot) then you couldn’t open the door to education and learning.

Print has been the primary tool of trade for educators. We have transmitted learning mainly by text. We have used **text**books, assignments, essays, comprehension passages, and written examinations as the means by which information is transmitted and assessed.

Our practice has been to provide print – to study it, memorise it, recall it, reproduce it.

Books and print have provided a stable record: they let you keep account, go back and check, come up with a right answer.

This is in stark contrast to the online medium: it’s not about going back but going forward! *Its future oriented. That’s part of the creative process*

Sure, users ‘look up things’ online; they check them out – they check with each other (as with Wikipedia). But they don’t study them, or memorise them, or recall them.They use them!

Student quote:

*Mr X says we need to get this stuff into our heads – doesn’t he know heads aren’t good places for keeping information in - that’s what the save key is for!*

It can be a futile task today to try and keep things in your head: there’s too much information and it changes too quickly. That’s why

* the save key,
* **and** the find key –
* and Google –
* and wikipedia and YouTube

are fundamental to digital literacy and learning.

For unlike the stable print medium, online is forever changing. What’s more *it is being changed by the users.*

80% of today’s (connected) teenagers would have *created content* for the web in the past week. They have been ‘published: they have made videos. Theyare authors, artists, film makers.

There’s no equivalent to this in traditional education.

*Students did not change or rewrite the textbooks.*

They did not do their own thing in class as independent learners.

They did not disregard the right answers and create new solutions.

And it is, because they are now *creating information* (rather than following someone else’s argument in print) we are having difficulty working out what to call them.

(University of Sydney developing a taxonomy of online terms)

They aren’t reading or writing – or checking records of the past.

They are using the information of others (copying if you will) to make something new. They cut and paste and download and mix and mash music and text and graphics and sound – to do their own thing.

There are no precedents for this: that’s why it is an information revolution. That’s why our relationship to knowledge/ information – and to experts or teachers - has changed dramatically.

Online we are **all** producers: (produsers)

Apart from online games, one of the best illustrations of this amazing content creation is YouTube – Michael Wesch the expert, an anthropologist – who looks at the YouTube Culture – his Library of Congress talk is a wonderful hour of entertainment and illumination – not time to play it here – but this is an introduction to his work:

5. Introducing you to YouTube Ethnography project 3.04

<http://www.youtube.com/watch?v=tYcS_VpoWJk&feature=related>

(The bigger picture – An anthropological intro to YouTube – Library of Congress 55.34<http://www.youtube.com/user/mwesch>

There is more content (created primarily by young people) uploading on video, than there is TV content:

3 networks - he states broadcasting for 60 years-

* + 1.5 million hours of TV
	+ You Tube produced more in the last 6 months

YouTube

* + 9323 hours uploaded every day
	+ equivalent to almost 400 TV stations broadcasting all the time
	+ 200,000 video clips – 3 mins
	+ large percentage intended for audience of 100Profile of a student

Profile of a Student

Like Joey, the one year old who was using the iPhone – digital natives teach themselves how to use the new technologies. (This is very different from learning to read – where someone has to teach you – to mediate).

Most of these little kids arrive at the school gate digitally literate: even at 5, many of them are more digitally sophisticated than their teachers. Without the benefit of formal education they have taught themselves the basic skills by which they will earn their living. They are experimentally using!

But it is not unusual to find that these skills are not extended, progressed, refined at school. Rather, all the emphasis is placed on print literacy.

These children will be tested again and again for their print literacy skills - that will predictably reveal *that they don’t read and write like their parents did when they were in school*.

So there will be more sensational outpourings in the press about the failure of teachers, the scandal of schools, the deficiency of students (ADD, cant spell etc) and the pernicious influence of the computer.

There are no national tests for digital competencies (and I don’t mean – can you do power point?).

If there were tests that could show *what the students could do* – not only would the establishment be stunned – but the students performance scores would improve every year.

As it is, I advise teachers not to have their pay linked to student performance on print literacy tests; it will *decrease* every year!

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*From*WHAT’S WRONG – TO WHAT CAN WE DO?

As result of the new technologies, we are experiencing a revolution – in information and education.

And I want to go straight to ways in which we can use some of these new technologies in the classroom to foster the creativity and ingenuity of students, and enhance the learning experiences of the students.

And I am going to do this with the example of mobile phones.

MOBILE PHONES

Marc Prensky: What Can You Learn from a Cell Phone? Almost Anything!

<http://innovateonline.info/index.php?view=article&id=83>

Mobile phones have a reputation in education as undesirable – unhealthy- pernicious almost – certainly powerfully disruptive.

Mobile phones are banned in most schools for any number of reasons. Yet as you have seen from the testimony of the students themselves, mobile phones can be an extension of self: many teenagers cant imagine life without their phone. It’s in constant use outside the school

*Teenage boy:*

*Take away my phone and you take away half my brain*

*Teenage girl:*

*Take away my phone and I don’t know who I am – I cant be me without it*

(Only adults ‘forget’ their phone; the young have them grafted on)

Banned in the classroom

I’m not sure of **all** the reasons that phones are banned in the classroom – though I am sure that the fact that they are ‘new technology’ has something to do with it.

But I also suspect that the banning of phones is *related to the lack of awareness among adults* – parents and teachers – about the learning potential of mobiles: most mature people I know use only a fraction of their phone capacity.

*I don’t want all those fancy things –*

*I know even know what to do with them –*

 *I just want something I can make and receive calls with …….*

Mobiles as computers

But it is time we stopped thinking of mobiles as just mobile landlines. And started thinking of them **as computers** – that can readily be coopted for learning purposes.

All it needs is a bit of creative thinking and problem solving on the part of teachers – and a bit of consultation with students who are forever innovating and coming up with new uses.

(No telephone company anticipated the pervasive popularity of text messaging and txting – it was the digital generation that created not only the culture. but the appropriate language for mobiles – and all outside formal education circles.)

Who has them?

These are statistic from the UK in 2005 – heaven knows what they would be today:

Under 8 25%

9-10 year olds 60%

11-12 90%

16 year olds 95%

There are billions of calls and messages world wide each day – the figures are like bank bail outs – so high as to be almost meaningless.

This is partly because of the overwhelming popularity of mobiles in developing countries.

Ingenuity, creativity – and a few good business models have ensured that the mobile phone has transformed many communities in the developing world.

In places where there are no banks, for example,– no conventional means of cashing money orders etc – the mobile phone serves as the bank. Family members can safely send money back home.

This following video is a bit crass commercial but it encourages a rethink of the capability of the technologies that have been grafted on to the anatomy of students.[[2]](#footnote-3)

6. Africa bank 1.57

[http://video.google.com.au/videosearch?q=mobile%20phones%20africa%20banking%20video&oe=utf-8&rls=org.mozilla:en-US:official&client=firefox-a&um=1&ie=UTF-8&sa=N&hl=en&tab=wv#](http://video.google.com.au/videosearch?q=mobile%20phones%20africa%20banking%20video&oe=utf-8&rls=org.mozilla:en-US:official&client=firefox-a&um=1&ie=UTF-8&sa=N&hl=en&tab=wv)

Textbook to mobile?

Just analysing the figures and the usage I would suggest that probably more people now have access to mobile phones than to books.

And think about this as the textbook is phased out – and creates a vacuum in the classroom. (ASA statistics)[[3]](#footnote-4).

Which is why we have to get the mobiles out of the locker and into the classroom. Todays mobiles have mindbogglingly more learning possibilities than the textbook ever offered.

Just think about some of the functions of the mobile: the new ones aren’t called smart phones for nothing.

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What a mobile can do (apart from serving as a bank)

* It is very much like a radio transmitter and anything that goes out as a podcast – can go out on a mobile phone.

7. Arthur Phillip 3.25 using as a tour guide, downloaded on mobile phone

But it is also a two way transmitter – teachers can make podcasts for kids and VV- but thy can provide feedback as well

* New phones have a touch screen display that allows users to
	1. Dial numbers
	2. Flick through address book
	3. Access dictionary, calculator, thesaurus, encyclopaedia
	4. Check email/ weather/ sport/ ABC programs etc
	5. Browse the web
	6. Use as research tool – google: google voice – googlesms, enter a search item – have returned as a text
	7. Check Facebook
	8. Diary/ alarm clock/ date
	9. Download video
	10. Use a camera
	11. GPS – tourist info – foreign country quick language lessons – currency conversions etc
	12. Online software – cheap – thousands of these applications – restaurant guides, public transport, movie times, mobile games etc

What educators can do

It’s time to start thinking about the potential of the mobile. A lot of research has been undertaken round the world documenting the creativity of teachers as they experiment with the new technologies and bring them into the classroom. To end the great disconnect.

*At one school – mobiles confiscated – boarders – WHY NOT TRY AND USE THEM? Start realising their potential –One teacher, Daniel – to the boarders – 6.00pm ‘Don’t forget your homework’.*

*Some discussion – not exactly encouraging independent learners – why not – having to work out what their homework might be – – a quiz – a puzzle – a game etc – something on the news etc ? within minutes – suggestions flying –*

There is software to help – through your laptop – also Class Talk <http://www.bedu.com/usergroup/Classtalk/ctsoft.html> teachers can send messages to students == accept queries – customised text messages every member of class etc.

* **Field trips**

Smart phones are ideal for field trips to museum, libraries etc. Text observations – queries – to teacher – collaboration with class – tourist guides – museum guides etc like Arthur Phillip

Studying abroad – could use phones with built in digital cameras and digital video recording features to capture examples of authentic language, images of archeological sites or short movies of cultural events. Students can post videos from mobiles directly to YouTube.

Tourist bodies making the most – not just stand in front of monument/ historic place etc – and get info in any language you select - but currency conversions, public transport – restaurants – shopping etc

* **Literacy** - Mobiles used to improve literacy in Australia

Researchers at Melbourne University have studied the success of mobiles in improving literacy; (standard use in UK for any literacy programs). Reluctant male writers were taking photos, providing captions, writing accounts etc – texting /emailing to friends and family. One school's principal had been "overwhelmed by the resulting enthusiasm" among disengaged students.

<http://www.literacytrust.org.uk/Database/texting.html#stats>

* **Language –**

There is a vast number of students in China learning English via their mobile phone: They can access quick lessons when they have time : language games, vocab lists, pronunciations etc:

8 Learn Chinese on your mobile phone 1.48

<http://www.youtube.com/watch?v=bQa2N0HpZOQ>

In Japan –you can see thousands of commuters every day – particularly young women – reading novels on their mobiles. These days novels are being written, texted, read on phones and for the first time Japan’s fiction bestseller list is dominated by these books.

* Maths – Africa – maths games – competitions – quizzes – enormously popular
* **The library**

Libraries are developing tour guides, reference guides etc downloaded on phones. You can go to certain areas of the library - – dial up and a video tells you what’s there – how to use it etc. There are phone versions of their catalogues, events, services – but timetables – and where there are free spaces/ computers available in the library etc

* **Tests**

Instead of defining phone use in exams as cheating, Presbyterian Ladies College Pymble for example, now alloss the girls to use their mobiles (like open book exams) as they can in real life when they want to find the answer to something. administration.

* **Augmented Games**

There are literally hundreds of suggestion for augmented games – **Environmental Detective** is one the most popular - but teachers can create their own. (Kids too!) MIT Education Arcade <http://www.educationarcade.org/>

* **Digital stories** –

I’m goingto finish with digital stories - just to show some of the things that are possible with the mobile phone. This was the best introduction I could find. I wont play it through to the end – but just let you get the drift of it

9. Discovering digital stories 2.37

<http://www.youtube.com/watch?v=3yU8zE5LBBY&feature=related> 2.

I have no doubt that the digital story will soon compete with the essay as the educational form of presentation; it has just about everything going for it – and it can be undertaken on a mobile phone.

I’d like to conclude with the role that creativity plays in the new technologies, and the role that the new technologies play in learning and education – with this final video.

It was the winner of the 2008 TropFest short film festival in New York. Set the an assignment on homelessness – no student could have done better.

10. mankind is no island 3.30

<http://www.youtube.com/watch?gl=AU&hl=en-GB&v=ZrDxe9gK8Gk>

This is probably the most exciting time to be an educator!

1. Digital native realities <http://wlteam.blogspot.com/2009/03/new-strategies-for-digital-natives.html> Top 5 Social Networks – jan 09

1. Facebook 1.19 billion monthly visits

2. Myspace 810 mill visits

3. Twitter 54 mil visits

4. Flixster 53 mil visits (movie reviews

5. Linkedin 43 million visits [↑](#footnote-ref-2)
2. <http://news.smh.com.au/breaking-news-technology/phone-banking-service-launched-in-africa-mideast-20090316-8ziy.html> Phone banking service launched in Africa, Mideast March 16, 2009 [↑](#footnote-ref-3)
3. Publishing companies – merged- disappeared – now concentrated in foreign hands – many fewer educational publishers and authors – declining sales in textbooks – print being displaced [↑](#footnote-ref-4)