The politics of technology curriculum

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Teaching is a political act

If you disagree with this statement then we have a debate on our hands. However, the curious thing is that if you *agree* that teaching is a political act, the situation doesn't change - we still have a debate on our hands.

Education is both a tool for, and a reflection of, the State. In an espoused democracy we educate both to maintain the democracy and to do so in democratic ways. As Pat White said *'There is at least one policy which must be in the public interest in a democracy. This is, an appropriate education for a democracy.'* (White, 1973, p. 237). A democratic education isn't desirable to a dictatorship - what happens there is more likely to be indoctrination.

So, there is a nuanced interplay of State-public (citizens') interests. Ideally, they are similar. In practice, the nuances amount to competing values positions which have to be contested, debated, advocated and defended. Contestation is key to democratic life and the idea that what constitutes teaching, or education, or curriculum is somehow 'obvious' or a 'given' cannot be presumed. The contestation of competing values is politics and your own values have varying degrees of compatibility with those of your students, colleagues, policy developers and government.

The big picture

The politics of design & technology curriculum doesn't happen in a vacuum - we have to consider the context of it all. We can look at the global situation and quickly identify the matters that are of concern to people globally - peace, justice and environment, for example. We are also drawn to the term globalisation - of which there are many interpretations, from enlightened to aggressive.
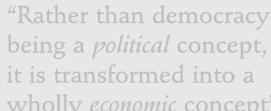
We are led to believe that we operate in a *'market economy'* (the benign name for capitalism [J.K Galbraith, 2005]) and that these are the days of the 'knowledge society'. Such terms are created (designed) to convey a meaning for their time. Cycles of change happen continuously and the big picture of one decade is not that of another. Of late there has been a deliberate blurring of the boundaries between democracy (and its education) and economy. As Michael Apple (2001) says *'For neoliberals, the world in essence is a vast supermarket…(E)ducation is seen as simply one more product…Rather than democracy being a political concept, it is transformed into a wholly economic concept.'* In this world, he suggests, the term 'consumers' is preferred to 'citizens'. (p. 39)

01 Professor Michael W. Apple.

"Rather than democracy being a *political* concept, it is transformed into a wholly *economic* concept"

02 "Design and Technology Education: An International Journal".

03 "International Journal of Technology and Design Education". (Volume 16, No. 2, 2006. With kind permission of Springer Science and Business Media.)

This is the ideology of now and it may or may not last. Ideology tests democracy. If one has an ideology to deliver, having critical, debating, questioning citizens isn't what you want. This last point obviously applies to dictatorships but it can also apply to those who want everyone to see democracy 'their way'. Thus, they create a *climate* of suppression, control and derision of criticism to subvert opposition. Anti-democratic actions then erode democracy.
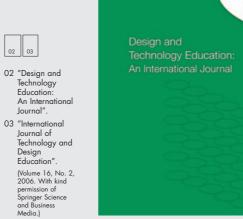
The politics of technology itself is the very background of the big picture and its interplay with design & technology curriculum is at once subtle, powerful and undeniable. A milestone research project on design & technology was David Layton's (1994) international study which showed some of the many and competing, political interests in shaping our field. While the *economic instrumentalists* may hold sway for now, he documents a range of (still significant) players - professional technologists (e.g. engineering bodies who would have us working to produce more and better engineers - apply this rationale to myriad other professions/trades); *sustainable developers*; *girls and women*; *defenders of participatory democracy*; and *liberal educators*. We can take any one of these groups and imagine re-designing design and technology curricula to serve their needs exclusively. Layton (1994) expresses matters well: *'…the politics of technological literacy -*

who creates and controls the meanings of the phrase, how the imposition of meaning is being attempted - is a central concern of technology education today.' (p. 13)

? How is curriculum shaped? Who has influence and how is it exerted? Where are you - the teacher - in shaping curriculum?

We can look another way at the big picture and that is at the (mistaken) orthodoxies that are held - often by those beyond, but sometimes within, our profession. These are the ideas that technology is about the *new*, that it's *I-tech/hi-tech*, that it's *things*, that it's *neutral*, it's *applied science*, it's *inevitable* (progress/ beyond control), or that, as a result of all these, it's *incomprehensible*. If these are the perspectives of technology promoted to, and held by, the public, do we have an educational role to play? Are we *educating* everyone - society - about the multiple ways of understanding technologies and the designed world?

Finally another bigger picture that we can view is education jurisdictions beyond our own. There is much design & technology practice internationally which offers models for discussion (written about in journals such as "Design and Technology Education, An International Journal" and the

"International Journal of Technology and Design Education"). We are fortunate in having a range of technology curricula around the world. It is interesting to see, for example, how much professional freedom for curriculum interpretation some colleagues have compared with others.

Curriculum

It's useful to draw on the root of 'curriculum' (Latin - currere) and think of it as the running/ current - as the fluid, and (ambiguously) the now. You no doubt theorised 'curriculum' at university but now you're in it!

Policymakers might 'hand down' curriculum but then multiple mediations kick in. It's not a religious (though some might see it so) edict, binding and inflexible. Nor is curriculum the sum of a set of syllabuses. It includes syllabuses, pedagogies, knowledges, learnings - all plural, all contested, many valid yet fighting for validity. Curriculum is not a tidy package but is problematic, changing, open to subversion, and is State-driven if not also ideologically driven. At its most democratic, it is openly critiqued.

? Think of all the 'ingredients' which make up the totality of curriculum. How much influence do you have over

each ingredient? Which have you most influence over - and which least?

To take just one (very powerful) aspect of curriculum as politics, try assessment. Consider assessment as a political sieve - a rationer of educational opportunities. Consider 'standards' and basic skills tests. Consider how your teaching and the ethos of your school is shaped by these. To probe curriculum critically is to probe the motives of its architects and to ask whose interests are served and how.

'Why design & technology education?'

To really interrogate educational practice it is helpful to step back every now and then and question one's own assumptions. Thus: *'Why design & technology education?'* What's your answer? Because it's there - a tradition? Because you did it at school? Has it a defensible place in schools? How did it get to where it is? Because of policy? Teacher action? Modelling on other curricula? What formulation does it take 'officially' and in the minds of you and your colleagues? In what ways can it serve society and *each* student?

Is it merely passive-technical or is it contributing to the development of critical-thinking citizens? To critique the status quo further what's in the name? Why is it called 'Technology Education' in this project? Why not Technacy (Seemann, 2003) or Design & Technology or Technological Literacy? All subjects have an archaeology and a politics of naming. They also have a yet-to-be-determined future.

You and design & technology

Given you are now a design & technology practitioner, what has been your own journey and why are you travelling it? Are you the navigator or are you following a prescribed path? What are your perceptions of you in design & technology now, compared with university, compared with school? What fulfils you and what frustrates you?

> **?** Where are you on a spectrum between dutifully doing the government's (or system's) bidding and operating as an autonomous professional deciding on the best for your students?

Facing such questions is to face the values clashes that are so rife in education. To wrestle with all the values interests

at play in education - not least, the students' - is to be an attuned professional. You find yourself in a position of weighing up multiple, competing values as well as having to resolve them through how you teach, assess and act. This is no easy matter but it does matter.

Teacher identity - what positions us?

Of course, the play of the politics of curriculum is also about power and the differential power arrangements between government, unions, professional associations, managers, teachers and students. Such things shape our identity as teachers and we tend to forget that we are teachers first and design & technology teachers second. Equally, we can feel that we carry the weight of many issues. When politicians and media almost compete to say what schools should be doing to cure society's ills, or to perpetuate the now 20-year myth of 'failing schools', it is easy to forget the real good we can achieve when left to our professional self-determination.

Michael Apple (2001), Andy Hargreaves (2003) and Judith Sachs (2003) all present cogent and topical analyses of how teachers are currently *positioned* by systems to replicate the systems' intentions. In climates of standardisation, teaching to the test, meeting targets, stifled pedagogical creativity (see Keirl, 2004 re creativity, innovation and design & technology curriculum) and in isolation

of any democratic social mission, as Hargreaves (2003) documents, *'…it (is) almost impossible for many teachers to teach either for the knowledge society or beyond it as part of a broader social mission.'* (p. 162 emphasis added). In such climates it is easy to become professionally isolated. A huge challenge is to open our collective selves to public scrutiny and to be critiqued - in sum, to challenge our personal-professional and public-professional identities.

> **?** What do you think it means to have a personal-professional identity? What do you think it means to have a public-professional identity? Discuss the risks and gains that could result from taking our professional curriculum decision-making into the public arena.

Part of our identity is also about collegial self-knowledge, understanding that we are part of the big picture too and to respond accordingly - as Michael Bottery (cited in Judith Sachs, 2003) says: *'…to see that (we) do not necessarily occupy the centre of any*

occupational universe, but are part of a much more complex ecology of occupations' (p. 15).

Put another way, we need to know ourselves well in order to be active professionally beyond our workplaces.

What of design & technology's identity?

Does design & technology really have a valid and defensible place in a democratic education of *every* student? To know our own curriculum considerations and arguments well is to be able to advance the design and technology case. To know others' curriculum arguments well is better still. Curriculum is continuous contestation and design & technology will only have its place so long as it can present its case.

Let's hypothesise. Why not dismantle design & technology and cast it to the curriculum winds - crafty bits to the arts, skilling bits to vocational training (it cannot be education - see Richard Peters, 1973), theory bits to science and values bits to social studies? The problem of design & technology's challenges resolved! Now consider design & technology (the name wouldn't actually work now) as just one of these 'bits' and imagine the kind of subject and pedagogy in each case. None of these alone could embrace *in a holistic and meaningful way* all of design, enterprise, innovation, making, communication, creativity, thinking, critique, etc., in the way that design & technology can. But to do this is to

04 Kurt Seemann.

"technacy as well as literacy and numeracy?"

conceive of design & technology holistically and to serve a democratic future and not any narrow, current ideology. It is to embrace, critique, change and challenge and to see all technologies for what they are - essentially controversial and problematic.

Technological literacy?

This term can only be given brief comments here but I believe it offers a place for debate and discussion. The absence of 'design' in the name is problematic and just as we can conceive of 'design literacy', other conceptual possibilities have been offered. For example, Kurt Seemann, seeking to redress the attention given to 'numeracy' and 'literacy' in the curriculum, has developed the term *'technacy'* (Seemann, 2003). A comprehensive collection of writings around technological literacy has been assembled by John Dakers (2006) and a key discussion of the politics of technological literacy was presented by Stephen Petrina (Petrina, 2000b).

When we are weighing up all the competing variables of design & technology's own 'design', using a term like technological literacy can be helpful. It also helps articulate design and technology's richness to those people beyond the field (our managers come to mind) who haven't received the benefit of a quality design and technology education. Recalling David Layton's words on

technological literacy we can explore the relationship between how the term is constructed and who controls the curriculum. Some would say that *skilled* people are technologically literate but this is not enough.

We could say that someone who *understands the social effects and uses of technologies* was technologically literate but this is not enough either. Further, we could say that someone who had *a critical disposition to see themselves as a being in relation to technologies and to choose to act autonomously with regard to them* was technologically literate. Would this satisfy technological literacy's meaning?

I would argue that there is a case for shaping design and technology in ways that are: holistic - multiple dimensions interplay; critical - questioning and discomfort with regard to technologies are valid; and dynamic - all aspects are subject to change and modification. Clearly, this is not a content-(knowledge-) based model for a school subject but it is a lot closer to the world of designed technologies. If we are to embrace the politics of technologies, of environment and of government, then (as with assessment in design and technology) atomised and reductionist approaches just don't work. For example, Stephen Petrina (2000a), argues against technocentric approaches to design and technology in favour of a 'political ecology' approach while my own focus has been on ethics-democracy-technological literacy interplay (Keirl, 2006).

(Re)visioning the profession

When you reflect (alone or with colleagues) on design & technology curriculum, what disquiets you? Could we be in a different place - strategically, professionally, in how it looks, in what it does? Democracy, education, curriculum, design & technology are *all* in some sense ideals - cases of perpetual searches for the goals they espouse. They are never arrived at. That is their lot. But they are about determination and change.

There is an important dimension here and it is the concern of many curriculum theorists today. It is about professional *vision*, and considering ways of boosting our personal and collective efficacy. It legitimately embraces such non-material values as hope and optimism and belief in change for the (global) better - not just the 'more-is-good' mantra of progress cast as economic growth. In this vein, Hargreaves (2003) talks of the *'...need for social ingenuity and moral integrity...(and it being) time to redefine our vision and reassert some values.'* (pp. 161-162).

? Do you think there is value in the idea of having 'professional vision'? How can it be both idealistic yet practical?

Metaphors and descriptors for teachers

You've probably played the metaphor game at some time - teacher as lion-tamer, as juggler, shepherd and so on - and it's a useful exercise to pursue. After years of pressure for teachers to perform better, to maintain standards and to be more and more efficient, it seems fitting to see the teacher as a cog in the machine. Better, perhaps, we can elevate our status to technician, proud to do the job well but not expected to apply any professional judgement at all. Is this acceptable? There are plenty of teachers who would just say *'Give me the syllabus and I'll teach it the best I can with the resources you give me'* (teachers always say something about resources). This is the sausage factory model - no visionary or social thinking, no professional judgement, no input to the curriculum. You produce, you're paid, your output is measured (and your productivity is recalibrated next time round).

But what of change, vision and action? We can turn to teacher as curriculum designer/builder; as professional; as activist; as ethical agent; as reflective practitioner; as enquirer; as researcher; as political actor and so on. Each of these metaphors or descriptors is worth collegial exploration and each can be theorised as a possibility or, better, drawn upon and blended into your own vision of professional.

05 Andy Hargreaves.

"Professional development apartheid - something to be resisted"

06

06 Professional learning communities and performance training sects
(Developed with information provided by Andy Hargreaves.)

Professional learning communities	Performance training sects
Transform knowledge	Transfer knowledge
Shared inquiry	Imposed requirements
Evidence informed	Results driven
Situated certainty	False certainty
Local solutions	Standardized scripts
Joint responsibility	Deference to authority
Continuous learning	Intensive training
Communities of practice	Sects of performance

But the key question is - how do we get to a better professional position within, and for, design & technology? Not from complacency, whingeing or leaving it to others to act. Professional determination is called for.

> **?** An exercise that can be fun yet serious too is that of discussing apt metaphors for you as teacher. Is there a metaphor which doesn't apply at present but might be worth working towards?

Professional action - new determinations

It seems to me that determination can have several senses. First, it is anti-determinist - it rejects ideas that 'progress' and 'fate' are forces immune to our intervention. Second, it avows our efficacy - our faith in ourselves and our can-do as a profession that *can* effect change for the better. Thus, third, when we determine choices, we *apply* our reasoned decision-making capabilities to come up with the best possible option at that time. It is one thing *to know that we have the power* to determine futures and it is another *to choose to act* - to use that power for good.

If we are sincere about professional action then we need new determinations -

ones which are ethically grounded so they are defensible as actions within and for democratic practice and life. They also need to be political - i.e., strategic in intent and guided by the expression of collegial values - the professional ethic. If democracy is the most ethically defensible way of co-existing then the education system, those it serves (citizens singly and collectively) and those who serve it (us) need ethically defensible arguments. Defending our educational values in public will only happen if those values promote the common good.

If collegiality and collectivism are ways forward, then we need to celebrate debate and critique - with all colleagues within and beyond design & technology and in the public arena. We can re-cast ourselves in ways that see us as moral visionary (Hargreaves, 2003) with re-established social status and dignity. If a sophisticated society needs sophisticated educators, then a visionary society needs visionary educators. Both Mihaly Csikszentmihalyi (1996) and Richard Florida (2003) adopt this approach when they write about creativity.

When Florida portrays the kinds of occupational classes he sees in society (creative, working, service, agriculture) he subdivides the first of these into a 'super-creative core' and 'creative professionals' (Florida, 2003, p. 328). And there are we - teachers and educators - members of the super-creative core!

Professional breathing

But to take visionary action we need room for professional breathing. Here, of course is one of the many conundrums we face. When we are kept so busy (intentionally, it can be argued) with our day-to-day work, one challenge is simply to find the time to spend with colleagues to discuss matters of mutual professional interest. How do we build our collegiality? There are several options - particularly through one's professional association - reading about the practice of others, reporting your own best practice and attending seminars and conferences.

It is interesting to look at the work that has been done in studying teacher renewal - the idea that we need continuously to refresh and to re-orient (even re-determine) our values and aims throughout our careers. While we might be reflective practitioners on a daily basis, what are the opportunities to renew collegially? While what is known as professional development can provide this, it might just be worth looking at the form that this takes. (I'm reminded of one Dean of Education who refuses to take her staff on annual 'retreats', preferring more frequent 'advances'.)

Discussing professional growth, Andy Hargreaves (2003) presents two broad approaches evident from his team's research. He compares 'professional learning

communities' (PLCs) with 'performance training sects' (PTSs). The contrasting language in the naming is illuminating though they are not an opposing binary. Let's consider the summary attributes of each in the table above.

To unmask the politics of these approaches one has only to consider how power is distributed for each of the listed criteria. For example: Who's in? Who's out? Who decides? Who benefits? So we find that, while both of these approaches may have their place in education, the PTS positions us as *dependent* whereas the PLC empowers us as *autonomous professionals*. Hargreaves argues that it is the latter to which we should aspire - what do you think? He also shows how the PTS is used by systems for the majority of schools (including those deemed to be 'failing') while the PLC is reserved for the few 'high-flyer' schools. Such segregation and distribution is nothing if it is not political. Hargreaves calls it 'professional development apartheid'.

Politicking design & technology

Judyth Sachs (2003) discusses *'old professionalism'* and *'transformative professionalism'*. The former she describes as being characterised by *'exclusive membership; conservative practices; self-interest; external regulation; (being) slow to change; and, (being)*

"An activist teaching
profession is an educated
and politically astute one"

reactive' (Sachs, 2003, pp. 11-12).
The latter is the focus of her text which
finishes with:
*'…a call to action. An activist teaching profession
is an educated and politically astute one.
The will to achieve this is lying dormant in many
of us, and now is the time to work towards its
development and realization in systematic
and collective ways'* (Sachs, 2003, p. 154).

For many years the design & technology
community has carried more of a curriculum
development burden than most subjects -
especially those born with their silver spoons
(English, maths, science) who have historical
precedent, unchallenged status, and assured
resources on their side. The changes that
have brought about what we now know
as design & technology are the result of many
actions - not least excellent and innovative
teaching. But it is also a matter of being
political, always with well supported
argument, and this is a matter of combining
theory, practice, research, thinking, big
picture, local innovation, staffroom push
and political lobbying.

What has been achieved over the last
three to four decades is quite remarkable
for one subject. Yet things remain insecure.
New fashions and trends come along.
Governments get new ideas, act with little
heed to what the profession might think,
and 'sell' the idea through the media.
To have significant influence over the
agenda calls for strong and articulate

professionals and professionalism.
It calls for 'action beyond' and
'thinking beyond'.

Such action and thinking begs political
perspectives and I would suggest that there
are five ways that we can look at design
& technology curriculum politically:

1. The global.
   Design & technology's relationship
   to design(ing) and technology/ies
   'out there' as human practices.
   Are we just playing curriculum-catch-up
   all the time - trying to mimic the
   technological world with skills
   and knowledge for industry and economies?
   Or are we thinking of other worlds
   too - of the enlightened kind?

2. The would-be stakeholders.
   Can we effect a balance? Who are we
   really serving in our educational work?
   Do certain curriculum alliances and funding
   sources really help our cause and design
   & technology's integrity?

3. Society.
   How and what we contribute to the general
   education of all students as citizens.
   That is, to create a society with design
   intelligence as part of its culture,
   to show how technologies behave
   in democratic and anti-democratic ways,
   and to help citizens engage more
   in technological decision-making

(Keirl, 2001; Baynes, 2005).

4. Students as fulfilled persons.
   How we defend design & technology
   education for all students as persons -
   helping their critical thinking, designerly
   dispositions, a host of skills, communication
   and information abilities, their creativity
   as a means of empowerment,
   and their problem-overcoming capability.

5. Curriculum dynamics.
   Advocating and defending our legitimate
   place in a 21st Century curriculum.
   This calls for a/our capacity to articulate
   comprehensive (not partial) educational
   arguments with all those with whom
   we interact and who have
   curriculum influence.

? Consider each of these
five perspectives and
discuss the extent to which
you act on them in your
professional work.
For each of them,
what are the implications
of your not acting
on them?

Political act-ing

There is no field so educationally stimulating,
challenging and worthwhile as design
& technology. *We* know that! But nice rosy
statements aren't enough. We are not
a curriculum island.

Paulo Freire (1972) wrote the much
referred-to political critique of education
and literacy "**Pedagogy of the Oppressed**"
and he saw curriculum as a dialogue
to be created and re-created. We might
see it as a building that we can modify
and change for its dwellers. That is the way
of things, to design and to redesign
as an articulate professional group.

The key, for me, is our efficacy - our ability
to engage, deliver and be heard within
and beyond the profession.

This calls for our (respected) professional
judgement, which will be the consideration
of all the factors discussed here.
That judgement will, ultimately,
need to be ethically defensible - to serve
each student, the whole of society,
and humanity. Enlightened globalisation
shows us the interconnectedness
of these three.

But the judgements are nothing without
action - that other sense of determination -
the awakening of the 'dormant will'.

The question *'How should we act?'*
is both ethical and political. Having
come to a reasoned ethical position,
alone or with others, means little if we
don't act - by taking our values 'out there'.
Ultimately, we could ask *'What is our vision
for education through design & technology?'*
and having our vision, *'How will we go about
achieving it?'*

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