

Indigenous Knowledge, Know-how, and Design & Technology

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There are two topics that inevitably rise to the top of the agenda when I consider the autumn editorial/reflection piece. The first is the fuss and palaver about the annual release of GCSE/AS/A2 examination results. The joke about this annual circus in the popular press is that the very same data are used to support opposite assertions:

- pass-rates are increasing therefore student performance is improving;
- pass-rates are increasing therefore standards are falling.

In the very first year of the new journal (Vol 1 No 3 Autumn 96), I debated this weird annual ritual '*Can better be worse?*' Since the issues have not changed in the subsequent 10 years, it seems hardly worth rehearsing them again here. I will content myself with the observation that with nearly half a million students every year taking GCSE in design and technology, 24,000 taking it at AS level and 18,000 at A level, we must be doing something right. So... to the second topic.

Inevitably at the forefront of my mind in late August is the vacation that has just passed, and this year is no exception. I was travelling in Africa and – whilst reading a local newspaper in a Zambian airport lounge – came across an intriguing advert for a university research post in 'indigenous knowledge'. The more I read about it, the more intriguing it became and the more questions it raised for me, the most central being what is 'indigenous knowledge'?

On the surface the question is easy to answer through examples. The bushmen of the Kalahari know how to find water in their parched landscape by reading the signs that they see in the environment but that others do not observe. This knowledge is central to their survival, and is passed down from generation to generation through an oral and experiential tradition. Similarly, over the last month I came across all kinds of local knowledge that made life manageable in remote African communities; the medicinal properties of particular plants; what vegetables grow best in

which areas (i.e. on what soils); and even how a home-made organic goat repellent can protect young maize crops from grazing goats.

But as soon as you start digging a bit the issues become less clear, for how are we to distinguish between '*indigenous*' knowledge and 'real' knowledge? And what is the relationship between the two? Is indigenous knowledge just localised oral knowledge (i.e. not written down)? Can indigenous knowledge migrate to being 'real' knowledge by being generalised and written down? What are the truth tests for any claim made by indigenous knowledge and are they any different from those that apply with 'ordinary' knowledge? Is there such a thing as indigenous skill, and if so how is it different from other skill?

Following a data trail through an 'Index of Indigenous Knowledge Resources' to illuminate these issues, I came across a reference to the elders of an Inuit community in Igloodik, (in the Canadian Arctic) who were recognised with a national science award for their efforts in preserving traditional Inuit knowledge.

"Stories, expertise on hunting, survival on the land, sewing, tanning, technical terms for harpoons and other traditional tools and many other topics have been recorded in 500 interviews."

http://www.nunatsiaq.com/archives/nunavut000131/nvt2012_10.html

And the local political representative celebrated the award because:

"it recognises traditional Inuit knowledge as being on the same footing as Western scientific knowledge."

I confess to a somewhat ambivalent reaction to this. First it seems to me that there is something a bit patronising about the term 'indigenous' knowledge; as though it is somehow second class knowledge or not-really knowledge – until it's all tape-recorded and transcribed – whereupon it suddenly becomes real knowledge and gets a science award. I am reminded of the ill-fated 19thC explorations to





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find the north west passage to China and the Indies in which hundreds of British sailors died in the Canadian Arctic because they did not have the basic knowledge of survival that any local person could have told them. Whose was the 'real' knowledge?

But I have a further layer of concern that explains why I am raising this issue in a design and technology journal. Most of what might be termed the 'indigenous' knowledge that I came across in Africa – as well as most of the references to it that I have subsequently read – relate to *practical* knowledge; the kinds of know-how that make life live-able in the local situation. It's about growing or hunting for food, building shelters, or transport systems, developing tools and apparatus and systems, its [*indigenous knowledge's*] application to development is seen largely in terms of helping to solve technological problems (Indigenous Knowledge WorldWide 2004)
my insert

In short, indigenous knowledge is typically design and technology knowledge, which is 'know-how' rather than 'know-that'. It seems – in the Inuit case above – as though it is merely the transition of that knowledge from know-how (in practice) to know-that (on paper) that resulted in the science award. I am left with the nagging paranoid thought that despite the undoubtedly good intentions of those seeking to support 'indigenous' knowledge, the label itself demeans the kinds of practical know-how that are the stock in trade of design and technology.

I observed a great example of this know-how at a construction site (on the beach) for dhows: the traditional Red Sea/Indian Ocean sailing craft with its characteristic triangular (lateen) sail. I watched as a big-ish 25ft dhow was being constructed. Raw materials (typically branches/trunks of teak) were being selected, shaped and fixed, all by hand and without a single drawing. The builders 'knew' about the strength of the timber and how to shape and fix it, and they looked for particular pieces to do special jobs within the construction. I imagine many similar scenes could be

observed up the east coast of Africa. Is this 'indigenous' knowledge?

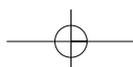
The role of knowledge in design and technology has always been a tricky one. When knocking around ideas, we make all kinds of decisions about what to do and how to do it based on hunches and best-guesses. Polanyi (1962) articulated this in terms of our ability to operate with '*tacit*' knowledge. Which is to say (e.g.) that the dhow builders choose cross sections of material not based on explicit, formally constructed mathematics, but by operating on their tacit understanding of what works. Lave & Wenger (1991) describe how this operates within a social framework – with new members of the building group being progressively inducted through participation in the 'mysteries' of the trade. It is not so much personal knowledge as participatory knowledge.

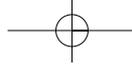
The point however about these tacit and/or participatory knowledge systems is that we all use them all the time (I am assured, for example, that carpet-fitters have a shared, tacit, but sophisticated understanding of measurement and area).

Informal ways of knowing are the norm rather than the exception. Except in schools of course where we insist on teaching abstracted concepts. And having been taught such abstractions, learners then find it very hard indeed to make any use of them in real settings. When was the last time you used calculus?

No wonder half a million youngsters annually opt to study design and technology, where we locate learning within concrete tasks that exist in real settings. I may have doubts about the label 'indigenous', but I have no doubt at all that for most of us – most of the time – tacit understandings, developed through participation in design and technology, should be explored and celebrated. It may not win science awards – but I won't lose too much sleep over that.

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Postscript

When we launched the new DATA journal in January 1996, I redefined the concept of the editorial making it into a brief polemical introduction to each edition. Since the editorship passed to Eddie Norman last year, the piece has been re-branded as a personal 'reflection', and in that form I have now completed 10 years of the editorial/reflection (Spring 1996 - Autumn 2005). I believe that the informal style and brief format of the piece provides an opportunity to raise issues that might otherwise not get aired but that are important for readers to think about in the emerging context of design and technology. Having completed 10 years of these pieces, it seems a timely moment for me to stand aside and allow others into the game. So the 'reflection' will continue, but as an invited piece, and I hope that it will continue to act as a spur to ideas, thoughts and actions in the design and technology community.

