An Unbroken Chain: linking our past and future

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It is both an honour and privilege to have been asked to take over as the Editor of the relaunched *Design and Technology Education: An International Journal.* The contributions of the two previous Editors have been immense. Professor John Eggleston was the driving force behind the founding of the Journal as *Studies in Education and Craft* in 1967 (and its evolution into *Studies in Design Education, Craft and Technology* in 1978 and *Design and Technology Teaching: a journal of new approaches* in 1989). Throughout his time as Editor during the 1970s, 1980s and early 1990s, the Journal was at the centre of the debates that shaped the development of design and technology as a school subject. In 1996 Professor Richard Kimbell took over as Editor and it was renamed the *The Journal of Design and Technology Education*. At the time of this handover of the reins, John Eggleston wrote as follows:

> *The new feature will be a regular selection of the growing body of new research that is now available for the enlightenment of practitioners in the field – much of it being generated by practitioners themselves. (1995:3)*

Richard Kimbell's contribution in sustaining this legacy is fresh in our minds. The great strength of the Journal has been the seamless connections it has provided and advocated between research and practice. The Journal has supported action research as a designerly mode of enquiry: research carried out by practitioners for practitioners. It is arguably this mode of enquiry which has helped to bring about the rapid change that has characterised and driven the emergence of design and technology in UK schools. In their recent literature review, Harris and Wilson asked, as the first of the specific issues which they suggested could be explored, 'Can a model of research for D&T which includes 'users' be developed?' (2003:62). It would not be unreasonable to answer that such a model has been long-established, and a key challenge for the relaunched Journal must be to make that case emphatically, through scholarly argument and case studies of exemplary practice. Such a model has been, and will continue to be, action research as a designerly mode of enquiry.

Richard Kimbell has agreed to complete one further year of reflective commentaries on design and technology education, and it is hoped that these will be published, together with his editorials since 1995, as a separate volume.

As the new Editor, I have taken the liberty of publishing my views on the key factors in developing a strong research-base in this first edition of the relaunched Journal. This was the subject I was recently asked to consider in a keynote address for the induction programme for new lecturers in design and technology initial teacher education (ITE), which is being managed by DATA and funded by the UK's Teacher Training Agency. This keynote address discussed four factors:

- The deconstruction and reconstruction of the conceptual basis of design and technology as a subject.
- Securing and making accessible the records of the work of past researchers.
- Establishing a strong framework for the on-going international conversations that will generate progress.
- Ensuring that new researchers are supported in establishing their place within this framework.

I was also asked by DATA to advise on the research support which could be offered to new lecturers, and my thoughts returned to the seminar series given by Professor Bruce Archer in the Department of Design and Technology at Loughborough University. I am delighted that DATA agreed to the suggestion that these seminars should be published as part of its ITE induction programme (2004). Clearly, my commitment must be to pursue vigorously those factors which lead to a strong research-base for design and technology education, and one key factor must be learning from past researchers. I learnt a great deal from being able to attend the seminar series given by Bruce Archer and I believe that new researchers will be able to gain much of that

experience from the published versions. In order to support new researchers in building on prior work (art), one feature of the relaunched Journal will be invited papers written by established scholars in the field of design and technology education, which capture aspects of the research literature and put it in the context of the current research agenda. The first of these papers was written by Dr Stephanie Atkinson of Sunderland University and explores the issues of preferred information processing style, gender and achievement in the context of design and technology project work.

But why must the relaunched Journal be 'international'? The pragmatic answer is that in order to attract contributions from the best researchers, the Journal must be an international research journal. Otherwise, they will publish elsewhere. However, there is more to it than that. There is a sense in which further real progress in UK design and technology education is dependent on taking an international perspective. For example, consider the debate which occasionally surfaces briefly, only to be submerged by the rising tide of implementation details, about the fundamental human capacity to design. How is designing possible? This is not a question to which answers would relate to national boundaries, or cultural divides, but to what it is to be human. It is a generally held belief that design and technology is about developing the human capability to design that has driven the international design and technology movement, but the debates tend to skate around the fundamental questions. What are the human capabilities that allow future artefacts, products, systems and services to be conceived and brought into being? There were glimpses of the fundamental nature of these questions in Fores and Rey's discussion in 1979 of *Technik: the relevance of a missing concept*:

> *Crossing from Britain to continental Europe, in Germany, if there are two cultures or sub-areas of the general culture, they are not 'science' and 'humanities' of the split generally thought to exist in Britain, this being the split which a number of cultural analysts have set themselves up to try to heal. Instead, if there is a two-way split at all, it is between Wissenschaft, concerned with all knowledge and all subjects taught in the classical university, and Technik concerned with making things, making them work and studies in the technical universities and faculties. (39)*

Or in Archer's discussion of 'The Three Rs' published in the first issue of *Design Studies* in the same year, 1979:

> *When Sir William Curtis, MP, coined the phrase 'The Three Rs' in or about 1807, he placed an emphasis on literacy which reflected the virtual monopoly that the church then had in the running of schools. I had an old great-aunt who protested fiercely whenever the phrase 'The Three Rs' was mentioned. She swore that Sir William had got it all wrong. The Three Rs were:*
>
> *Reading and writing*
> *Reckoning and figuring*
> *Wroughting and wrighting*
>
> *By wroughting she meant knowing how things are brought about, which we might now call technology. By wrighting she meant knowing how to do it, which we might now call craftsmanship. From reading and writing comes the idea of literacy by which we mean more than just the ability to read and write. Being literate means having the ability to understand, appreciate and value those ideas which are expressed through the medium of words. From reckoning and figuring comes the idea of numeracy. Being numerate means being able to understand, appreciate and value those ideas that are expressed in the language of mathematics. It was from numeracy that the immense structure of science was built. But what of wroughting and wrighting? It is significant that modern English has no word, equivalent to literacy and numeracy, meaning the ability to understand, appreciate and value those ideas which are expressed through the medium of making and doing. We have no word,*

> *equivalent to science and the humanities, meaning the collected experience of the material culture. Yet the output of the practical arts fills our museums, and galleries, equips our homes, constructs our cities, constitutes our habitat. (51)*

It is here that the heart of design and technology lies. And, perhaps we do now have the word that was being sought. In probably one of the most significant contributions to DATA's International Research Conference in 2004, Mike Doyle, a philosopher from the University of Leeds, introduced the concept of technicity:

> *Technicity is the capacity of behaviourally modern humans:*
> *• to deconstruct and reorder objects; and*
> *• deploy an external memory system. (69)*

Technicity is a concept borrowed from philosophy, but, as it was being described I certainly heard 'make things and draw', although that might not have been exactly what was said. Doyle argues that technicity played a key role in the speciation event that led to our species radiating from Africa; that it is the basis of writing (which was first used for accountancy not to record speech); and that it is the basis of the formation of shapes, which are the basis of language. Technicity underpins literacy and numeracy!

Progress in design and technology education depends on taking an international and an inter-disciplinary perspective, and it is from such approaches that design and technology education will gain its future strength.

Two of the research articles in this issue address one of these fundamental human capabilities – drawing. The two researchers tackle this topic from different perspectives, Gill Hope by observing what young children do when they draw naturally and Ian Storer by analysing how professional designers draw. The essential driver for the research described in this latter paper was the perceived need for curriculum development, but the process has revealed some of the fundamental principles underlying sketching by an expert. It is the 'wroughting and wrighting' of sketching. The juxtaposition of Gill Hope's observations of the natural starting points for children's drawings and Ian Storer's analysis of professional expertise, sets out one strand of the challenge facing design and technology curriculum developers. A case could reasonably be made that there is no more fundamental issue in design and technology education than the use of drawing as an external memory system.

This first issue continues the process of supporting the development of a strong research-base for design and technology education. It contains papers referring to established research findings, as well as those indicating emerging research agendas. It is this essential mix that will support a lively on-going conversation, which must be central to the Journal's future, and is the key to progress in design and technology education.

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