

Visualizing Research: Reflective Practice and Pedagogy

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INTRODUCTION

Good evening everyone. It's a real pleasure to be here in such a prestigious international school of contemporary art and design education. Thank you very much for inviting me to RISD. I only know a little about American art education so I very much hope that I can learn something more about it from you. Certainly today Nancy (Friese) has been invaluable to me in extending my understanding of your systems and issues.

Paul (Sproll) has asked me to talk tonight about my experiences of practice-led doctoral research - much of which informs the book 'Visualizing Research: a guide to the research process in art and design' which I'll discuss later. Central to the approach of 'visualizing research' is the concept of reflective practice and the related concept of reflective pedagogy - the latter is something I'll introduce tonight but hopefully explore with some of you in more detail in our 'structured conversations' tomorrow. So, those of you who intend to participate in the workshop, please make a note of specific issues you would like to discuss, or other things that my presentation might trigger.

(In relation to a visual in the presentation) The polymath - Richard Buckminster Fuller - best known as an architect - at the age of only 19 made the radical decision to treat his life as a creative experiment. He captured his experiences in multiple volumes of what he called the 'Chronofile', an amazing example of a conscious visual and material track of action, reflection and learning (Krause and Lichtenstein, 1999, p 13). So perhaps Buckminster Fuller is an interesting example of a reflective practitioner.

Practice what you preach

But first a little bit of background about myself. For me practice, teaching and research are essential interrelated facets of my creativity. I've been a practitioner for 25 years - a maker - of site-specific artwork and more recently sculptural lights, using new lighting technologies. My teaching experience covers the full range: undergraduate, postgraduate development at taught Masters, and higher degree levels.

My own doctoral research was in art education, an investigation of teaching and learning styles in higher education. This was a part-time study at the University of Aberdeen, between 1984 - 1988¹, instigated really by my ignorance about pedagogy when I first started to teach, and

¹ Gray, C. (1988) *Teaching Styles in Higher Art Education*. PhD thesis, University of Aberdeen

attempting to address the questions - what am I doing, why am I doing I, how am I doing it and, most importantly, could I do it better? Since completing my PhD I've been involved in educating the practice-led researcher - thinking about and testing out how artists and designers might appropriately engage in formal research - that is for PhD degree.

I'm a member of various international and national research bodies e.g. Research Assessment Exercise (www.rae.ac.uk), Arts and Humanities Research Council (www.ahrc.ac.uk), and have recently been involved in advising on new doctoral developments in art and design at the Bauhaus Research School in Weimar, the first practice-led PhD program in Germany.

An important principle for me is 'practice what you preach' and so my current project - *Making Sense: an exploration of ways of knowing generated through practice and reflection in craft* - is a collaboration with a colleague Gordon Burnett (a master craftsman and CAD/CAM expert) in which we ask the question:

'What can be known by making that could not be known by any other means?'

We presented this research recently at a conference - 'Crafticulation: Craft and Education' at the University of Helsinki, Finland - and our illustrated paper is in press. Also a web site is under construction that will evidence and track our ongoing work and emerging findings. We are currently using this research to develop a new curriculum in undergraduate craft education.

Much of what I'll talk about tonight is informed by this philosophy of the inter-relationship of practice, teaching and research together with an enduring belief in the value of art and design as a powerful mode of education.

RESEARCH, REFLECTIVE PRACTICE AND RELATED PEDAGOGY

Tonight I want to talk about three concepts - research, reflective practice, and related pedagogy. First, to say something about 'research' - to try and be clear about its nature - because I think we need to continuously clarify this against our developing understanding of the nature of inquiry for the creative disciplines. Then I want to offer some thoughts on the concept of 'reflective practice' and the 'reflective practitioner', and finally I'll outline some implications of this for developing reflective pedagogy, especially doctoral programs and projects.

(In relation to a visual in the presentation) For me the work of Paul Klee, especially the concept of 'the thinking eye', embodies the essence of creative inquiry and its integration into pedagogy. His 'Thinking Eye' notebooks are an innovative visual and textual exposition of thinking about art and its implementation in learning and teaching. So again Klee's work might be an early example of reflective practice and pedagogy.

"It's research Jim ... but not as we know it!" (Press, 1995 - with apologies to Star Trek fans)

During the 1990s in the UK and some parts of Europe extensive debate occurred about the nature of 'research' in Art and Design. Various positions were taken:

'practice is research' - 'practice is research equivalent' - 'no way is practice research!'

Confusion reigned and defining 'research' became certainly a national obsession, if not an international one. It seemed important to claim part of the territory of research for the creative subjects and give identity to it by naming our research - 'practice-led', 'practice-

based'. This was an attempt to characterise a research approach that still adhered to the widely agreed generic definition of research as 'accessible systematic inquiry', but that championed the development of a new 'space' in which practice - active creation and reflection on that - could become a central part of the research process. Although the terms 'practice-led', 'practice-based' (and numerous variations) irritate some, they have served a purpose, not least in securing funding for postgraduate research in the creative disciplines - for example the UK's Arts and Humanities Research Council postgraduate funding schemes.

By the end of the 20th century some important clarifications about the research/practice debate emerged from major UK funding bodies. Here's what the Research Assessment Exercise said:

"Professional practice qualifies as research when it can be shown:

- to be firmly located within a research context
- to be subject to interrogation and critical review
- and to impact on or influence the work of peers, policy and practice"

Later the Arts and Humanities Research Council provided a helpful definition characterising *research as a process* involving three key features:

1. clearly-articulated *research questions* to be addressed through the research
2. the specification of a *research context* for the questions, and a rationale for why it is important that these particular questions should be explored
3. the specification of appropriate *research methods* for addressing the research questions.

AHRC make a clear distinction between research and practice *per se*, namely:

"Creative output can be produced, or practice undertaken, as an integral part of a research process as defined (questions, context, method); ... but equally, creativity or practice may involve no such process at all, in which case these are not considered to be research."

So what has emerged from two major funding bodies concerned with quality and standards is the framing of research involving practice understood predominantly as a process (rather than product), with explicit questions - the "what?" - to be asked in relation to a context and a need - the "why?", with a clear methodological approach - the "how?", in which the outcomes and outputs are open to critical review, and that the research has some benefit and impact beyond the individual practitioner-researcher - addressing the all too often avoided question of value - the "so what?"

Additionally, in higher education the academic framework of postgraduate and higher degree study, and indeed staff development activities, makes research a publicly accountable activity that needs to be intentional (purposeful, planned), accessible (open to scrutiny by others), transparent (it's clear, understandable), and transferable - in principle if not specifics, so that it can be of use to others.

Practice *per se* may not be any of these things.

But *reflective practice* - as a creative and critical approach to inquiry - should take account of all the conditions and features of research as previously outlined.

Reflective Practice

Donald Schön's book 'The Reflective Practitioner: how professionals think in action' (1983) has been a major influence on the discourse surrounding practice-led research. The subtitle is

telling. The book is an exploration of how professional practitioners in a range of disciplines (design, planning, management, psychotherapy) think and act - how they set problems and solve them in real world professional contexts. Schön calls for the development of:

“ ... an epistemology of practice implicit in the artistic, intuitive processes which some practitioners do bring to situations of uncertainty, instability, uniqueness, and value conflict.” (p 49)

Schön identifies that the professional's inability or unwillingness to articulate this kind of knowledge has led to a separation of academic and professional practice. Sounds familiar - much of the debate about research in our sector has focused on the fear of losing creativity by speaking about it, and even worse, by writing about it!

One of the consequences of this separation has been that research *about or* into practice has tended to be carried out by other academic researchers (historians, educationalists, sociologists, psychologists, etc) from an external perspective. These approaches largely employ the classic scientific method where the researchable is objectified, and the researcher remains detached. A total reliance on others to carry out research could undermine the development of a research base within our sector. Schön points the way forward. He says:

“... when we reject the traditional view of professional knowledge, recognising that practitioners may become reflective researchers in situations of uncertainty, instability, uniqueness, and conflict, we have recast the relationship between research and practice. For on this perspective, research is an activity of practitioners. It is triggered by features of the practice situation, undertaken on the spot, and immediately linked to action ... the exchange between research and practice is immediate, and reflection-in-action is its own implementation.”
(p308-309)

Reflective practice therefore attempts to unite research and practice, thought and action in a framework which involves practice as an active agent for inquiry, and which acknowledges the particular and special knowledge of the practitioner. It's a framework that encourages reflection in different ways: retrospective reflection - 'reflection-on-action' - is a critical research skill and part of the generic research processes of review, evaluation and analysis, towards making sense; 'reflection-in-action' is a particular activity of professional practitioners and involves thinking about what we are doing and reshaping action while we are doing it. In this sense it is improvisational and relies on feeling, response and adjustment. Schön likens it to conversation, especially in relation to design, where he suggests that designing is a 'reflective conversation with the materials of a situation' (p78).

Schön proposes that much of this activity is personal knowledge (a concept proposed by Michael Polanyi, 1958) as something that is not usually articulated, and sometimes actually indescribable, and that this relies on improvisation learned in practice. In fact Schön suggests that it is an intuitive 'art' - 'knowing-in-action, the characteristic mode of ordinary practical knowledge' (p54). This kind of 'knowing' is dynamic - knowing *how* rather than knowing what.

This dynamic process - reflexivity - is an important concept in the development of post-positivistic research methodologies, especially constructivist ones. As Frederick Steier (1992) says

“...we understand and become aware of our research activities as telling ourselves a story about ourselves ...” (p3).

Storytelling sounds very pleasurable but the American Pragmatist philosopher and educator John Dewey says that reflective thinking is 'troublesome' and 'somewhat painful'. In his book

'How We Think' (published in 1910) he writes:

“Reflective thinking is always more or less troublesome because it involves overcoming the inertia that inclines one to accept suggestions at face value; it involves willingness to endure a condition of mental unrest and disturbance. Reflective thinking, in short, means judgement suspended during further inquiry; and suspense is likely to be somewhat painful.” (1991, p13)

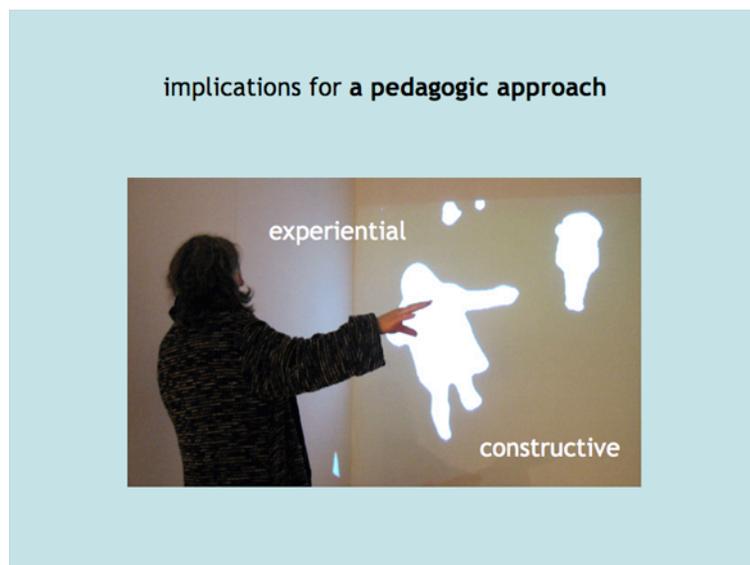
Whilst telling our selves stories is important, this is hardly an explicit and critical way of arriving at shared understandings. Given that absolute objectivity is impossible, this can be addressed to some extent by always exposing ideas and practices to other professionals for feedback, support and advice. In seeking the views of others, which will inevitably be subjective, we can develop inter-subjective views, which are less likely to be biased and partial.

However, the advantages of the practitioner-researcher role are compelling: our 'insider' knowledge, experience and status usually lends our research credibility and trustworthiness in the eyes of peers. Most importantly we are inquiring as a reflective practitioners, openly acknowledging the complexity, dynamism and unpredictability of the real world.

Reflective Pedagogy: experiential and constructive

In discussing any pedagogic approach I would suggest that we consider teaching and learning as 'two sides of the same coin'. I would argue that the development of any new postgraduate pedagogy needs to consider 'reflective practice' and two related major frameworks for learning (for postgraduate study is a high level learning opportunity) - the two frameworks being experiential and constructive in nature.

Let's consider the experiential. For the student, this involves learning through doing, through the immersion in and experience of creative practice and generating understandings from this through reflective processes. For the educator, this involves framing the learning by drawing on our own experiences and understandings of practice and related research, as we actively share in the student's journey of exploration. Both student and educator are participants in the process and are co-responsible for developing and evaluating learning.



Dewey in 'Art as Experience' (published in 1934) describes having an 'esthetic' experience as a process of 'undergoing':

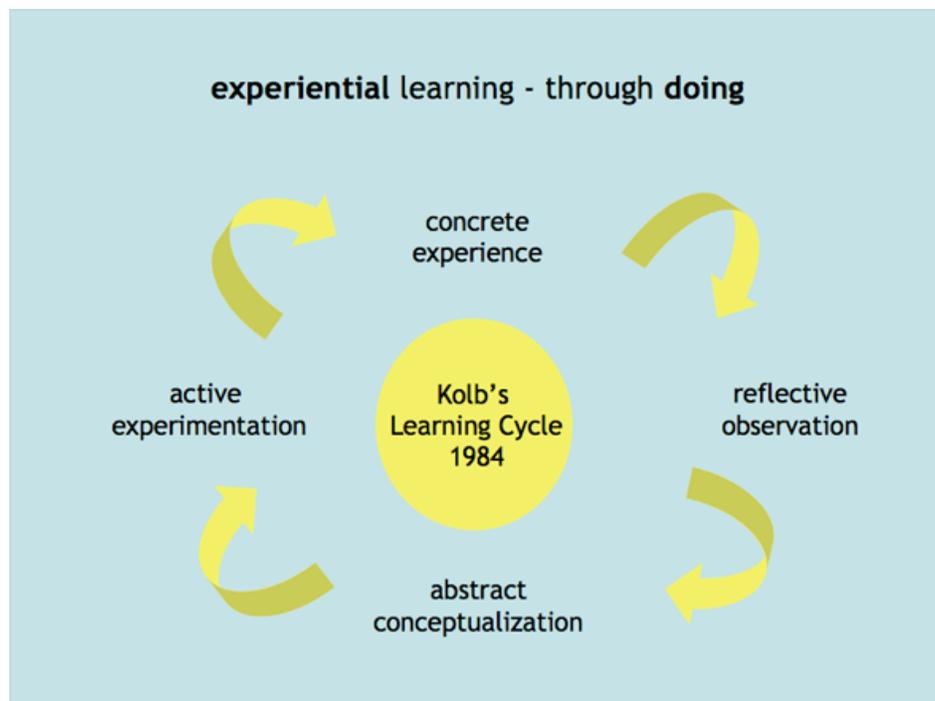
"The esthetic or undergoing phase of experience is receptive. It involves surrender. ... To steep ourselves in a subject-matter we have first to plunge into it. ... We must summon energy and pitch it at a responsive key in order to *take in*."
(Dewey's italics, 1980, p55)

This willingness to give in to, to be immersed in - to be in 'interaction' - is what gives experience its value and power. Yet, a single experience is insufficient. In 'Experience and Education' (published 4 years later in 1938) Dewey states that unless there is 'continuity' - a carrying over of learning from a previous situation into a new one - experience is 'disorderly'. Where there is continuity the learning becomes 'an instrument of understanding' for dealing with new situations (1997, p44).

Dewey's thinking about experience - immersive interaction carrying over into reflection and speculation towards new understandings - reinforces the intimate relationship between doing and knowing, action and reflection, practice and theory.

Published around the same time as Schon's 'Reflective Practitioner', and possibly, unconsciously, visualizing Dewey's 'continuity' of learning, is David Kolb's experiential learning cycle (1984).

This has four phases: first, the learner's immersion in a concrete experience, followed by reflection on that experience, followed by conceptualisation - making sense, making meaning - and finally a stage of generating new experiences, leading to plans for further action and utilizing the learning from the previous stages of the cycle.



So there is a balance between action and reflection, and learning is dynamic, iterative and generative.

The second framework to consider is constructivist learning, a major thinker on this being Jerome Bruner (1996). This framework sees learning: as constructed in response to each individual's prior knowledge and experience (and it's likely that postgraduate candidates are experienced practitioners with specific expertise); as occurring through active exploration - through practice - probably through a structured project - or series of - as a vehicle for inquiry; sees learning as occurring within a social context where a postgrad or doctoral cohort as a learning community can involving formal and informal interaction, providing the opportunity for 'co-reflection', towards shared learning and what Mary Belenky (1997) calls 'connected knowing'. 'Connected knowing' is an epistemological orientation towards 'relationship'. The 'connected knower' develops ways of accessing the knowledge of others. 'At the heart of these procedures' says Belenky 'is the capacity for empathy', which expands one's own experiential learning base. Returning to the 'two sides of the same coin' analogy, within the constructivist framework again learning and teaching are seen as participatory, dialogic and relational².

VISUALIZING RESEARCH

A student-centred approach to doctoral study

I would now like to share with you in a little more detail the concept of 'visualizing research' as an approach to practice-led doctoral research in art and design (although I know that this is also being used as an introduction to research at undergraduate and Masters levels too, as well as in staff development programs).

The concept of 'visualizing research' calls for a creative and imaginative engagement with doctoral research in art and design, going beyond the obvious interpretation of making visible - into envisioning a process of inquiry and immersing one self in it. The book, published in 2004 and now in need of some updating, is co-authored by Julian Malins. It is based on over 15 years of experience of developing and reflecting on practice led research degrees in art and design, and draws on real examples of completed PhDs and some post doc research.

Visualizing Research elaborates a particular approach - and it is just one approach - seeing research largely as pragmatic and applied, the outcomes from which as being of cultural and social value. In considering the development of new doctoral programs and projects it is essential to explore and critique a whole range of research philosophies, concepts and methodologies. And most importantly you must develop your own position that is likely to be responsive to your specific cultural and educational context. So for example the Bauhaus doctoral program must create its own identity.

The book is a methodological guide - suggesting a way forward, highlighting things not to be missed, points of specific interest - landmarks - a kind of 'routemap'. In keeping with the nature of a guide, is it not prescriptive and should be used critically - ideally in discussion with supervisors - not just to encourage action and reflection, but to stimulate thinking towards developing your own approach according to your specific needs - a kind of 'pedagogy of the unique' as Margaret Farren (2005) suggests.

In *Visualizing Research* we have used the metaphor of 'journey of exploration' - a creative and critical inquiry - with a project or a developing body of practice as the vehicle. Metaphor is a creative tool - thinking of one thing within the framework of something else - that extends thinking, and generates new insights, as in Schon's concept of 'generative metaphor' (Ortony, 1993).

² We have attempted to put into practice the pedagogic principles I outlined in our residential doctoral summer schools (2000 - 2005)

Our 'journey of exploration' for clarity's sake is presented as having six stages (see visual below). However, this does not mean that once one stage is complete that's the end of it. Rather the process is iterative with stages being revisited as necessary throughout. We can back track and retrace our footsteps.

The first stage - *Planning the Journey* - poses the crucial question: What do we want to explore, where do we want to go? It's blue sky in character. In the book this is the first chapter that includes exploring the motives for undertaking research, outlining the generic research process and its likely stages and timeframe, emphasising the importance of methodology. It introduces 'The reflective practitioner' as a conceptualisation of a possible way of becoming or being a researcher. And finally it examines what has already been done for doctoral study - some pioneering projects, outlining methods and thesis formats.

Stage 2 - *Mapping the Terrain* - the green landscape of existing context - prompts consideration of a rationale for the proposed research, asking 'Why is your research idea important?' and 'How does it relate to what already is out there?' The chapter introduces the purpose and structure of a 'contextual review' (a wider concept than a literature review, acknowledging other media sources and references). In surveying and reviewing the terrain the skills of critical thinking and response are presented, and locating and using reference material discussed. The method of reflective journal - not quite Buckminster Fuller's life 'Chronofile' - is suggested as a means of capturing experiences of the journey and encouraging critical reflection on it.

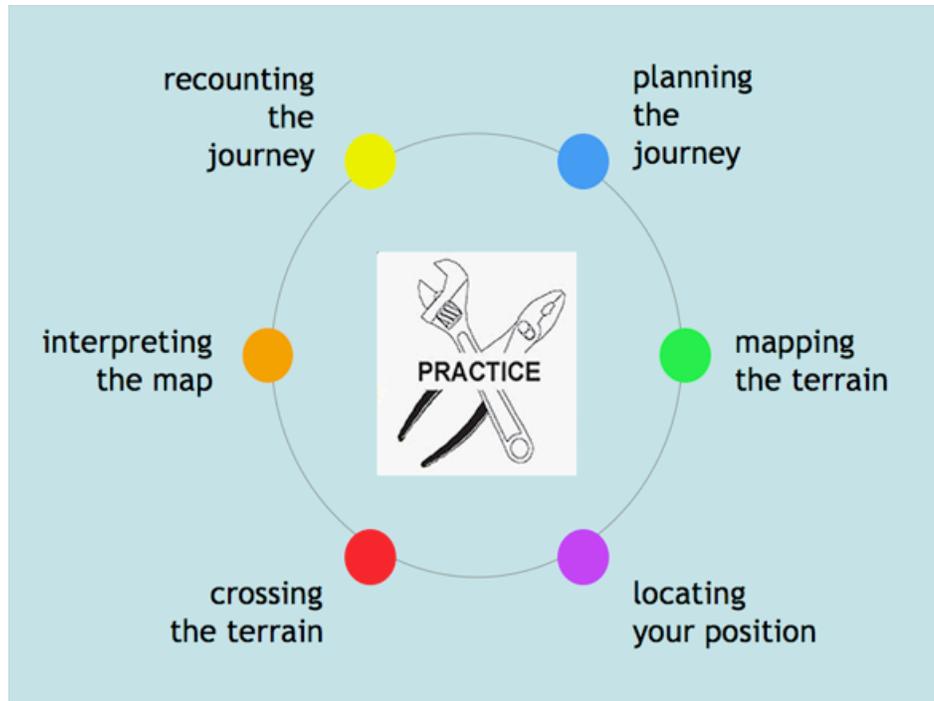
Once the terrain is familiar we can ask the question: Where am I in this context? What is my position? and attempt to situate oneself within a critical context for inquiry. The chapter *Locating your Position* outlines possible ways of raising a research question, and explores methodological approaches related to it. More pragmatically it gives advice on structuring and writing a research proposal and managing research project information.

How do we get to where we want to be? How do we generate and/or gather evidence? Stage four prepares us for action - red for 'go'! - concentrating on methodology and methods. The chapter *Crossing the Terrain* presents a case for visual inquiry, and outlines the basis for developing an argument (thesis means argument) using data to collate evidence for claims. Methodology is suggested as responsive - to the research questions, to the research context, acknowledging the complexity of the real world. Methodology is proposed as emergent - being shaped from iterative exploration through creative and critical practice, and its evaluation. And we ask "Can it be constructed like a piece of work?" - a kind of 'bricolage'? In crossing the terrain possible vehicles for exploration - methods - are offered, as well as thinking about preliminary evaluation and analysis.

Where are we now? What does this experience mean? So what? What are the findings, outcomes, and what is their value? The chapter *Interpreting the Map* discusses evaluation, analysis and interpretation, giving examples of visual analysis and tools, and introducing the concept of 'playing with data' as a creative, iterative and critical pursuit towards making meaning and sense. We shift into orange - towards the light.

Yellow - light - enlightenment! In *Recounting the Journey* we must tell the tale to others - offering insights, conclusions and contributions to knowledge. The final chapter suggests how we might recognise new knowledge - as a modest but significant contribution to the field (and John Wakeford has identified no less than 18 ways of being original³). We outline creative yet rigorous ways to communicate the research findings, and, having achieved the destination, we propose how we might further disseminate research and plan for future expeditions.

³ Included in *Visualizing Research*, Appendix 3



The six-stage journey helps to formulate a strategic view of the whole research process and helps new researchers cope with the scope of doctoral study. Although a PhD must be a contribution to knowledge it's not a life's work resulting in a Nobel prize - something that most students tend to forget!

Still remaining in stage 6, I want to briefly make the point that there is a logical conclusion to practice-led doctoral research - namely the possibility that the PhD submission can comprise a number of components such as a body of practice (e.g. art/design works, performance), an illustrated written text, other supporting/complementary evidence e.g. video, material samples, web site, database, etc. And now a doctoral submission may be completely digital and web-based, for example the interactive music thesis by Marcel Cobussen⁴

We use the word thesis to mean argument and not simply the end product of the research process manifested in a classic bound tome of text. A convincing argument rests upon claims substantiated by evidence derived from the rigorous use of appropriate research methods.

Research involving practice will usually have developed different kinds of evidence in different media which relate to a range of senses - visual, textual, aural, tactile e.g. still and moving images, sound, objects, material samples, site specific work, performance, etc. It is important then that these different kinds of evidence are allowed to 'live on' in their original form within the thesis, so that we avoid "language doing the work of eyes" or ears for that matter (as the anthropologist Tyler says, 1986).

Integrated into a whole, this provides the basis for a convincing argument - at this stage still only a part of a submission for a higher degree - which is then explored and questioned through a defence (a 'viva voce' examination) completing the doctoral thesis.

⁴ 'Deconstruction in Music' - <http://www.cobussen.com/navbar/index.html>

Supervisors' reflections on doctoral study - *SuperVision: insights into supervising research degrees in art and design*⁵

Throughout the development of the *Visualizing Research* book we were very aware that the guidance we were offering to the student could have a counterpart for the doctoral supervisor. We decided that we would develop a second book that explored supervisors' experiences of the doctoral process. But this was to be a very different kind of book - one that would offer a range of diverse and possibly disruptive perspectives - 'stories about' supervision⁶. The storytelling approach seemed to be much more conducive to teasing out peoples' most meaningful points of learning - to get at what Dewey calls 'that' experience. He says: "An experience has a unity that gives it its name, *that* meal, that storm, that rupture of friendship." (p38)

The new book tries to capture some of the most important sectoral experience developed over the past 20 years internationally - so we have contributors from Australia, Canada, Ireland as well as Europe. In keeping the metaphor of visualizing we decided on 'SuperVision' and used the word 'insights' to reinforce the idea of developing deep understandings through experience.

Two pieces of research have contributed to this: an Arts and Humanities Research Council funded Collaborative Doctoral Research Training network (CDRT) and a series of in-depth structured conversations with experienced supervisors in the sector. The CDRT network was led by our selves and involved the universities of Sunderland and Salford. The network ran a series of events for example, research student **expositions** (not exhibitions) of doctoral work in progress that had parallel focus groups - eliciting student experiences of the doctoral process for example their most and least valuable experiences of both training and supervision. We ran supervisors' fora - in which we asked ourselves the same questions as in the student focus groups; and we hosted a residential **summer school** for both students and supervisors, opened up to participants across the UK. The findings from this research will help to provide the introduction and the postscript to the new book.

The meat of the book will be a series of essays by experienced supervisors in the sector, based on in-depth structured (and digitally captured) conversations. Contributors will develop their essays - each with a specific focus and distinct voice - drawing on the transcripts of their recorded conversation.

Emerging outcomes suggest a real diversity of approaches mirroring the eclectic nature of the creative disciplines and their individualised learning preferences. Some new or 'difficult to get at concepts' have been named and articulated, for example, 'co-emergence' - discovery as a result of the 'close passionate intellectual engagement' between the student and the supervisor. Some stimulating new metaphors have been generated, for example 'parachuting' to describe the tricky challenge of identifying and homing in on a particular topic for research. More pragmatically, the book will include contributors' 'six best resources' for supervision that will help to expand the existing fairly limited subject-specific resource provision.

An interesting observation from the people we have spoken to is that our conversations have not only given them a rare chance to be reflective on how they have developed their supervisory capacities, but also a chance to be critical and to envision how they might proceed in the future.

⁵ New book in progress to be published by Gower, Winter 2009. ISBN 0 566 08719

⁶ I am grateful to Dr Chris McKillop for introducing me to the concept of storytelling in education.

CREATIVE RESEARCH, PRACTICE AND PEDAGOGY - SOME CONCLUDING THOUGHTS

In concluding I would say that our work - because it is not simply my work but the effort of an extended network of colleagues - our work encourages creative and visual thinking within the critical framework of research, and is extended by what the Australian artist and writer Paul Carter considers the discourse of creative research, namely, material thinking (2005).

He proposes that 'local knowledge is the distinctive yield of creative research', and argues that the artist's ability to imagine things differently (best achieved in his view through collaboration and dialogue) produces 'local inventions' that enable active participation in shaping our world.

Carter says -

“ ... creative knowledge cannot be abstracted from the loom that produced it. Inseparable from its process, it resembles the art of sending the woof-thread through the warp. A pattern made of holes, its clarity is like air through a basket. Opportunistic, it opens roads.” (p1)

Finally I would like to recap on - research, reflective practice, and related pedagogy.

We now have helpful definitions and conceptualisations of research but these must be continuously subject to critical review and as far as possible shaped by the creative disciplines. There are now many examples (in the UK at least) of completed practice-led research projects at doctoral and postdoctoral/professional levels to analyse and critique that might inform new developments - new visions of research.

As an approach to practice-led research (at doctoral and postdoctoral/professional levels) 'reflective practice' and the 'reflective practitioner' are valuable concepts to help position the practitioner-researcher in terms of ontology (ways of being in the world), epistemology (ways of knowing) and as a consequence methodology (ways of inquiring). Practice (in its myriad forms) can raise the research questions, identify the context for inquiry, ground the methodological stance, as well as provide creative and critical methods of generating and gathering evidence. Practice can certainly communicate the outcomes of research in engaging and expressive ways.

A reflective practitioner is also a valuable educator - the experience of first-hand creative and critical practice-led research can inform and shape new research-driven pedagogical frameworks and teaching and learning methods at all levels of the curriculum. In exposing students to research concepts and frameworks that underpin their learning, they might take responsibility for learning, provide educators with valuable insights and feedback on their learning experiences, and in doing so prepare themselves for reflective practice as well as helping to shape reflective pedagogy.

Thank you.

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