Appropriate Research Methodologies for *Artists, Designers & Craftspersons: Research as a Learning Process*

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in collaboration with

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Abstract

This paper attempts to put into context the development of research methodology in the Crafts. It considers the formal requirements for research by higher degrees, and defines the term 'practice-led'. It observes that there appears to be a lack of critical contemporary debate in the Crafts. It is proposed that research can be an important factor in the development of defining and elaborating this critical context. Conversely this lack of critical context could be seen to hamper research in the discipline. The paper then reviews the current state of completed formal research,* revealing a predominance of historical, theoretical, and educational research strategies.

Four practice-led research projects are then described: one completed Ph.D and two ongoing Ph.D research programmes (all in ceramics), and a further example drawn from professional practice (jewellery). These examples are described in terms of general methodological approach then expanded by specific methods. The paper concludes by proposing generic methodological guidelines for future research in the Crafts, so that learning, personal practice and the development of a critical context for the Crafts may benefit from the adoption and promotion of 'accessible disciplined inquiry'.

** Allison, B., 'Allison Research Index of Art & Design', Leicester: Leicester Expertise, 1992*

Introduction

This paper examines some recent developments in methodological approaches to research in the Visual Arts. Due to the relative infancy of formal research in these disciplines, we are proposing that, at the moment, research methodology be considered as generic, applying to Fine Art, Design, and the Crafts. In due time these disciplines may well evolve particular and distinctive methodologies of their own. However, until strong discipline-specific strategies have emerged and been validated, all can benefit from sharing approaches and experiences. In this sense the research process is also a learning process.

This paper draws on ideas in three previously published papers by researchers at CRiAD, and assumes that further reference to these would be made by the reader for philosophical and contextual issues relating to methodology, [1, 2] and specific information relating to the structure and content of a proposed research methods course for artists and designers [3]. Therefore we have omitted in this paper to describe research projects in Fine Art and Design areas (refer to cited papers), preferring to focus on those which are Crafts-based.

[1] *'Research Procedure / Methodology for Artists & Designers, in: 'Principles & Definitions: Five Papers by the European Postgraduate Art & Design Group', Winchester School of Art, 1993*

[2] *'Artistic Research Procedure: Research at the Edge of Chaos?', 'Design Interfaces' Conference Proceedings (refereed), Vol. 3, University of Salford, 1995*

[3] *'Developing a Research Procedures Programme for Artists & Designers', CRiAD, The Robert Gordon University, 1995*

The research topics and methodologies described in this paper should mainly be considered in relation to the framework of formal study for higher degrees (M.Phil., Ph.D). The Ph.D can be considered as a training to enable 'real' research to be carried out at postdoctoral level; adopting this view means that the researcher must acknowledge a certain humility for learning to take place. The Ph.D structure requires a high level of rigour, transparency and some transferability. These characteristics are not normally highlighted as part of day-to-day Craft practice, although many Craftpersons recognised the need for systematic inquiry and a degree of 'methodological transparency'.

It may be helpful to state the criteria required for higher degree awards. For the degree of M.Phil. a critical evaluation of the field of inquiry and a understanding and application of appropriate research methodologies for its investigation is demanded. For the degree of Ph.D, in addition to the requirements for M.Phil., the researcher must have made an original and independent contribution to knowledge *. Each discipline must interpret and apply these criteria to specific research projects, the choice of appropriate methodologies being the most difficult to identify. The methodologies described in this paper have aimed to fulfil these criteria.

**'How to Get a Ph.D: A Handbook for Students and Supervisors', Phillips, M. and Pugh, D., Open University Press, Buckingham, 1994*

Changing Paradigms of Inquiry: Practice-Based Research

Over the past ten years there has been a steady increase in the number of registrations for higher degrees in the area of the Visual Arts. * The researchers undertaking this work are primarily Fine Artists, Designers and Craftspersons (practitioners) and as such have sought methodologies which reflect their particular discipline-specific expertise. This has lead to the use of the terms 'practice-based' or 'practice-led' * research. This reflects a change in emphasis in research from research *about* the Visual Arts and artists, designers, craftspersons (as *subject*), predominantly carried out by critics, theoreticians, historians, etc., to a more pro-active research model involving practitioners researching through action and reflecting in and on action.* The researcher / practitioner is central to the inquiry as is the context in which the research is taking place. (It expected that this change will begin to be evidenced in the second edition of the ARIAD index.) These shifts in research frameworks are also taking place in other disciplines, and are symptomatic of a global reappraisal of the nature of knowledge and communication.*

** Allison, B., 'Allison Research Index of Art & Design', Leicester: Leicester Expertise, 1992*

** research initiated by practice and carried out through practice*

** Schon, D., 'The Reflective Practitioner', Basic Books, 1983*

** 'Artistic Research Procedure: Research at the Edge of Chaos?', 'Design Interfaces' Conference Proceedings (refereed), Vol. 3, University of Salford, 1995*

Crafts based Research: a critical context?

Research must take place in a critical context, and by its nature be open to challenge and debate. It could be said that there is a relatively weak critical/ theoretical context for contemporary Craft practice. This is supported by a recent article in *Crafts* magazine by Pamela Johnson * who criticises Peter Dormer for caricaturing the theorising of the Crafts. Dormer states:

> *"Clearly the studio crafts offer a lot of new territiory for particular kind of critical study and I am sure the Crafts Council can already hear the cries of the more strident of the theorists shouting the refrain 'Ooh ah Derridah' !"*

His concern here is that 'theory would side step practice'. We share this concern. We argue that critical analysis and debate, and the formulation of theoretical and philosophical frameworks is the responsibility *not only* of the 'external' critic, historian or theoretician, *but essentially* the responsibility of the practitioner - the Craftsperson. The informed, intimate perspective of the reflective practitioner leads to a greater degree of insight only possible from experiential, 'tacit' knowledge. Existing critics (e.g. Greenhalgh, Clark, Rawson, etc.), useful though their perspective are, are not engaged in the practice of Craft. Therefore, practice-led research has an important contribution to make to the development of this critical / theoretical context.

** 'Positive Thinking', Johnson, P., Crafts Magazine, pp 34-37, July/August, 1995*

Existing formal research in the Crafts

There are very few examples of completed formal research in the Crafts. The ARIAD index does not have a separate category or discipline / subject area called 'Crafts'. A search using Craft keywords e.g. glass, jewellery, textiles, weaving, blacksmithing, etc., revealed the following:

- that most of the entries were Masters level dissertations
- most of these were historical, educational and /or theoretical in nature
- there were three Ph.Ds - two historical and one technical / historical
- there were four M.Phils, one of which was historical, and three technical (in weaving).

It would seem that completed formal research using predominantly a 'practical' (practice-led) methodology is very scarce.* Craftspeople wishing to undertake research in their disciplines may be tempted towards a technological or materials science type of inquiry, in the perhaps mistaken belief that this type of 'white coat' research is the only legitimate form of inquiry. Whilst acknowledging the importance of this type of research it is often the extent of the transferable knowledge and application of the craftsperson's aesthetic critical faculties and physical skills which will determine the value of their research to others working in the field of Applied Arts.

** Although the second edition of ARIAD has an additional 1000 entries of recently completed higher degrees , the overall pattern of research strategies is unlikely to show a major change because of the lengthy timescale in completing most Ph.Ds, and the retrospective nature of the Index.*

Criteria for evaluating research in the Crafts

The criticism levelled at practice-based research by those from other disciplines (such as the Sciences or Social Sciences), revolves around the nature of subjectivity and the difficulty of aesthetic and even functional evaluation of objects. This reveals a fundamental misunderstanding. The criteria for the evaluation of this kind of research is generated by the researcher / practitioner and the nature and context of the project, and is not entirely subject to external objective, scientific, positivistic criteria. The criteria with which to judge the results of any research must take into consideration the original research question, its aims and objectives, and be negotiated through critical self-assessment, dialogue with peers (acknowledging multiple perspectives), and taking into account the evolutionary nature of research.

Examples of methodologies and methods

The following examples of research methodologies being adopted by practitioner / researchers given in this paper are by no means exhaustive.* They are intended only as examples which begin to demonstrate a growing confidence in methodological responses to changing paradigms of inquiry, enabling a more complex , rich and holistic approach to research.

** For other examples in Fine Art and Design see 'Developing a Research Procedures Programme for Artists & Designers', CRiAD, The Robert Gordon University, 1995*

Example - a recently completed Ph.D

Julian Malins *(Research Fellow in 3D Design / Ceramicist and Co-author)* completed his research programme in 1993 *. The research set out to investigate a number of studio ceramic kiln firing procedures, including salt firing, raku, fuming and reduction lustre, with the aim of redesigning craft kilns so as to produce safer and more environmentally sympathetic procedures. This involved the design, construction and testing of ceramic kilns, the making of ceramics and the subsequent aesthetic evaluation of those artefacts. The research resulted in development of a new procedure for firing reduction glazes such as lustres, in a safe, and environmentally sympathetic manner.

** Malins, J., 'The Monitoring and Control of Specialist Ceramic Kiln Atmospheres and Emissions', Unpublished Ph.D thesis, The Robert Gordon University, Aberdeen 1993*

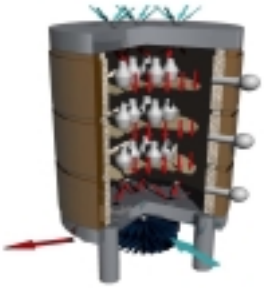


Diagram showing a ventilation system for a special atmosphere kiln (Malins, 1993)

General Methodological Approach

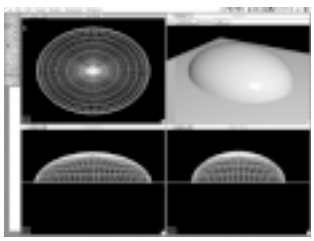
This research was carried out in an *interdisciplinary* manner using the resources of both Gray's School of Art and the School of Applied Sciences at the Robert Gordon University. The research predominantly followed the *'scientific method'*, but also involved *Social Science evaluation* methodologies.

** Canter, D., Branner, M., & Brown, J., 'The Research Interview: Use and Approaches', Academic Press, London, 1985.*

'Anastasi, A., 'Psychological Testing', (6th ed.), Collier Macmillan, London, 1988.

Specific Methods

• *laboratory experiments* - the making and firing of glazes and their subsequent evaluation using methods such as
• *multiple sorting tests* and *semantic differential survey* method.* (The latter method is relatively crude and cannot be used when evaluating complex systems which rely on a multi-perspective approach.) The innovative firing system led to the development of a new palette of glaze effects which can only be
• *tested on 'real' pieces of ceramic.* Evaluating such material therefore necessitated a different approach. The need to conform to the Ph.D requirements and availability of supervisory expertise lead in this case to a
• *predominantly technological research programme.* The final submission included a
• *written text, video and presentation of fired artefacts.*



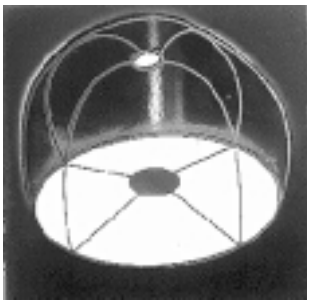
3D design work (Infini3D software) in preparation for cutting a mould using a CNC milling system.

In common with most research projects, the thesis concluded with recommendations for future study. These included the investigation of the new firing techniques through the design and making of ceramics.* Malins' current research interests involve the adaptation of computer aided design and manufacturing tools for use by designers and craftspeople. This work involves the design and making of objects combining new technology and traditional skills. The results of the work are recorded using multimedia as well as through the artefacts. This recent work is practice-led and demonstrates a shift in methodological concerns.

** This research is currently being undertaken by Katie Bunnell (RA based at CRiAD).*

Examples - Ongoing Research Projects: Evidence of a Growing Methodological Confidence

The following examples of current research projects illustrate the growing confidence in the use of methodologies which encourage the use of the researcher's specific abilities as visual practitioners. Three in particular are Craft-based two of which are Ph.D research projects:



Experimental lustre glaze tile, one of a series exploring the effect of glaze thickness, water-based printing and special atmosphere kiln firing.

Katie Bunnell *(Research Assistant)* is undertaking Ph.D research which investigates the combination of environmentally sympathetic technologies and the use of computer applications for the production of ceramics. She is continuing the research begun by Malins into the use of special atmosphere kilns for reduction lustres together with lead-free glazes and water-based printing systems. Central to this investigation is the design and production of a body of work (including a range of ceramic forms), which synthesises the aforementioned technologies. The research explores the relationship of these new technologies to Craft practice.

General Methodological Approach

Characteristics of naturalistic inquiry
(adapted by Bunnell, source Robson * after Guba & Lincoln)

** Robson, C., 'Real World Research', Blackwell, 1993*

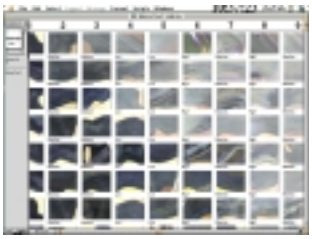
• *Human instrument* - the practitioner/researcher, is the primary data-gathering and generating instrument.
• *Natural setting* - research is carried out in a studio ceramic environment.
• *Use of tacit knowledge* - tacit (intuitive, felt) knowledge is regarded as an important aspect of ceramic practice and is therefore a valuable addition to other types of knowledge.
• *Emergent methodology* - the researcher builds a conceptual framework for the area of study based on grounded theory, emergent design and focus-determined boundaries. The research design, including ceramic design concepts, emerges from the interaction with the study through the evaluation of test results and visual and written contextual data. The research

boundaries are defined by the researcher's increasingly focussed understanding of the area of study.
• *Negotiated outcomes* - preference for negotiating meanings and interpretations with respondents. The results of the research (an exhibition) will be subjected to a peer review where outcomes are negotiated and broad generalisations of the data are only tentatively applied.
• *Idiographic interpretation* - tendency to interpret data idiographically (in terms of the particulars of the case) rather than nomothetically (in terms of law-like generalisations). In this case the research will be interpreted both in terms of the researcher's particular aims and objectives and in terms of the field of ceramic practice.
• *Special criteria for trustworthiness* - the criteria for reliabilty / validity of research results is devised as appropriate to the form of the inquiry. In this case the research methods are derived from ceramic practice and are therefore more likely to be regarded as valid and relevant.

Electronic database showing an interactive glaze sample, which provides a dynamic record of changing glaze surface quality

Specific Methods

• *contextual review*, including published literature and 'live' contextual information and visual exemplars;
• *quantative and qualitative* glaze and material *tests* to anticipatethe effect of glaze chemistry, firing atmospheres, colour response, surface qualities;
• development of personal / subjective imagery through the *design process*, making use of *concept maps, flowcharts* and *matrices;*
•use of *computer software applications* for visualisation and pattern and form generation;
• *documentation (video / audio)* of information in a *series of linked databases*, which enable the researcher to 'unpack' information contained in increasingly complex experiments, to allow the combination of diverse software applications, to explore data on environmentally-sensitive materials, in relation to the subjective conceptual framework of the practitioner;
• *body of ceramic work* used as part of a peer-review evaluation, the analytical criteria for which relates to the extent of synthesis between the technologies explored and applied, and not simply relying on the 'success' or otherwise of the resultant artefacts.



Electronic database showing a matrix of glaze tests. The layout reveals a relationship between several variables.

An alternative craft-based model is contained in the following example. Initially in a response to an investigation of aspects of the 'Percent for Art' policy, **Eleanor Wheeler** *(external Research Student * / Architectural Ceramicist)* undertook a series of site-specific public commissions. In addition to providing a critique of current collaborative practice within art and architecture, this research is expected to propose procedural guidelines for other artists working in this context.

** registered University of Northumbria, Newcastle, currently completing her Ph.D at CRiAD*

General Methodological Approach

• This work is *practice-led*, involving the researcher as *participant / observer* ('reflective practitioner'). The research is *collaborative*, relying to some extent on the participation and feedback of architects, planners, and users.

Specific Methods

Carved relief terracotta wall, 'Tree of Life' site-specific commission, Health Centre, Boldon Colliery, Tyne & Wear, (Wheeler, 1992)

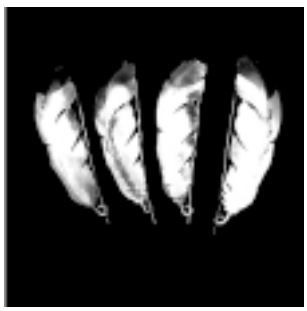
• *contextual review*, including published literature and 'live' contextual information and visual exemplars;
• the *design, making and installation* of four site-specific public *commissions*;
• four *'case studies'* (based on the commissions) - the term 'case study' in this context refers to the in-depth, context-specific description, analysis and documentation of the artwork, including the reactions of the collaborating professionals and the public;
• extensively illustrated *documentation* of artworks from design to installation;
• evaluative *interviews* with key participants in the collaborative process;
• *exhibition* of related ceramics (as part of the Ph.D sumbission).

Another example of a craftsperson conducting practice-led research is **Ann Marie Shillito** *(Lecturer in Jewellery at Duncan of Jordanstone College of Art, Dundee).* The research * set out to investigate possible production techniques available to the small-scale jewellery business, and concentrated on laser cutting refractory metals.

** 'Laser Cutting Refractory Metals', Shillito, A.M., Scottish Development Agency Report, 1991.*

General Methodological Approach

The general methodology could be described as *exploratory*, *experimental* and *driven by real issues* identified in Craft practice e.g. identifying appropriate production techniques.



Feather Brooches - laser cut titanium, anodised using resist applied by hand (Shillito, 1990)

Specific Methods

• conducted *contextual research* (identified industrial uses);
• undertook *technical research - tests* of equipment and processes;
• use of *computer software* for design and manufacture;
• *applied these experimental processes* to own design methodology;
• *produced a series of jewellery* in response to and embodying these technologies.

Conclusions

Formal research is a powerful mode of learning which provides the potential for informing practice, developing critical contextual debate and generating new knowledge. Establishing appropriate methodologies for research in the Crafts undertaken by Craftspersons is necessarily a long process involving dialogue between researchers working across disciplines. Realistically it takes three years to complete a Ph.D and only after numerous projects have successfully been completed can a methodology be described as validated. Therefore the process of validating research methodologies is evolutionary.

We propose that any Crafts-based research methodology should be developed with the following in mind:

• initially to consider a range of research strategies (from all disciplines);
•individually 'tailor' the research project in response to the nature of practice, the specific research project and the researcher's expertise as a Craftsperson;
• carry out the research from the informed perspective of the reflective practitioner, as 'participant observer';
• continually define and refine the research question in an iterative process, and allow methodologies to emerge;
• acknowledge accessibility, discipline, rigour, transparency, transferability as the characteristics which distinguish research from day-to-day practice in the visual arts;
• be aware of the critical context of practice and research, and to use the contextual review to situate the researcher and to help generate and raise the level of critical debate;
• consider an interdisciplinary / multidisciplinary approach to research, using a 'multimethod' or 'triangulated' approach, acknowledging the complex nature of practice-based inquiry in a transient cultural and contextual framework.

Helena Leppänen * describing the nature of the ceramic research undertaken at the University of Industrial Arts, Helsinki, also expresses the view that research in the Crafts will necessarily be an interdisciplinary inquiry leading to a more holistic and complex approach to research:

> *"I believe that in research people will seek intuition besides objective knowledge, some kind of personally experienced reality which goes beyond both the dogmas and the abstract simplifications of science."*

** 'Interaction in Ceramics: Art, Design and Research', Leppanen, H., (edited by Anne Valkonen), University of Industrial Arts, Helsinki, UIAH, pp. 40-42, 1993*

References

Allison, B.,
'Allison Research Index of Art & Design'
Leicester: Leicester Expertise, 1992

Anastasi, A.,
'Psychological Testing'
(6th ed.), Collier Macmillan, London, 1988

Bunnell, K.,
'Ceramic Design Innovation through Environmentally Sensitive New Technology'
registered M.Phil./Ph.D,The Robert Gordon University, 1995,

Canter, D., Branner, M., & Brown, J.,
'The Research Interview: Use and Approaches'
Academic Press, London, 1985

Gray, C. & Malins, J.,
'Research Procedure / Methodology for Artists & Designers'
in: 'Principles & Definitions: Five Papers by the European Postgraduate Art & Design Group', Winchester School of Art, 1993

Gray, C. & Pirie, I.,
'Artistic Research Procedure: Research at the Edge of Chaos?'
'Design Interfaces' Conference Proceedings (refereed), Vol. 3,
University of Salford, 1995

Gray, C., Douglas, A., Leake, I., & Malins, J.,
'Developing a Research Procedures Programme for Artists & Designers'
Centre for Research in Art & Design, Gray's School of Art,
The Robert Gordon University, 1995

Johnson, P.,
'Positive Thinking'
Crafts Magazine, pp 34-37,
July/August, 1995

Leppänen, H., (edited by Anne Valkonen)
'Interaction in Ceramics: Art, Design and Research'
University of Industrial Arts, Helsinki, UIAH,
pp. 40 - 42, 1993

Lincoln, Y., & Guba, E.,
'Naturalistic Inquiry'
Sage, 1985

Malins, J.,
'The Monitoring and Control of Specialist Ceramic Kiln Atmospheres and Emissions'
Unpublished Ph.D. thesis, The Robert Gordon University, Aberdeen, 1993

Robson, C.,
'Real World Research'
Blackwell, 1993

Phillips, M. & Pugh, D.,
'How to Get a Ph.D: A Handbook for Students and Supervisors'
Open University Press,
Buckingham, 1994

Schön, D.,
'The Reflective Practitioner'
Basic Books, 1983

Shillito, A.M.,
'Laser Cutting Refractory Metals'
Scottish Development Agency Report,
1991

Wheeler, E.,
'The Role of ArchitecturalCeramics in Contemporary Site-Specific Art'
registered M.Phil./Ph.D, University of Northumbria, Newcastle,1991

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Julian Malins is the Research Fellow for 3D Design. He completed his Ph.D in 1993, entitled *"The Monitoring and Control of Specialist Ceramic Kiln Atmospheres and Emissions"*. The research was an inter-faculty project involving the Faculty of Design and the School of Applied Sciences within The Robert Gordon University. Malins studied ceramics at Epsom School of Art (1973-76), Harrow College of Higher Education (1985-87) and Cardiff (1988-89), in addition he has a BA degree from the Open University completed in 1990. He ran his own pottery business for approximately eight years before returning to full-time education. Current research interests include the environmentally sympathetic design of specialist ceramic kilns and glazes, architectural ceramics, multimedia for the documentation of research in Art and Design, and appropriate research methods for designers.

Dr Carole Gray
Reader in Art & Design
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Carole Gray is the Reader in Art & Design. Prior to this post she developed and ran the MA course in Art & Design, having initially been a lecturer in Sculpture. She is a practising artist, currently engaged in a major public commission for a Scottish airport. In 1988 she completed a Ph.D on teaching styles in art colleges, initiating an enduring interest in teaching and learning. Her research now is in developing more appropriate research methodologies for artists and designers. She considers research, teaching and professional practice as three interdependent and mutually enriching facets of her creativity.