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THE ROLE AND USE OF CREATIVE PRACTICE IN RESEARCH AND ITS CONTRIBUTION TO KNOWLEDGE

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ABSTRACT

A common problem in art and design is that creative practice is often presented as research under the label of practice-based or practice-led research. This problem arises on the one hand from the wish of practitioners to use their creative practice in research, and on the other from a persistent uncertainty about the role of creative practice in relation to the requirement for making a contribution to knowledge within research.

In this paper, we discuss existing terminology and relate it to the different role(s) practice can take within research with regard to the contribution of knowledge. To this end, we analyse and categorise existing terminology concerning different roles of practice. We then examine how practice can be used in research in valid and rigorous ways. We thus aim to provide an important basis for the further development of the debate on research in art and design.

KEYWORDS

Research methodology, practice-based research, knowledge contribution

1. INTRODUCTION

A common problem in art and design is that creative practice is often presented as research under the label of practice-based or practice-led research (Biggs 2002, Durling et al. 2002). The motivation for using practice within research seems partly of a political nature, because it has its roots in the current funding structure which prioritises research (Niedderer 2005a, p.9). However, more importantly, this problem is of methodological nature in that it raises questions about why it should be necessary to use practice within research and, if so, how it could or should be used (Biggs 2003). Niedderer has argued that practice is being used as a means of making tacit knowledge available to research, because it includes the experiential part of knowledge which evades conventional communication by verbal or textual means and which is otherwise neglected by research because of the prioritisation of propositional knowledge (Niedderer 2007a, b). While the need to use practice has become widely accepted, the problem of its role within research remains disputed. Related to the methodological problem is the problem of terminology. A varied terminology is used to try and label different forms of using practice within research such as practice-based, practice-led, studio-based research, etc. This is problematic, because there are no clear guidelines for what these terms stand, and in due course adds to the confusion.

In this paper, we therefore aim to provide a critical discussion of the existing terminology, which denotes the use of practice within research, and relate it to the different role(s) practice can take within research. We thus aim to provide an important basis for the further development of the debate on practice-based research in general, and practice-based PhDs in particular.

Before proceeding, it seems important to define the usage of certain terms for the purpose of this paper. When referring to ‘art and design research’, we treat the field as a whole with a common problematic. This is partly because research regulations and requirements are the same for the whole sector, and partly because of our understanding that the problematic of research and its requirement for a contribution to knowledge is the same in both. To explain this, while there are researchers who make a distinction between art knowledge and design knowledge, instead we make a distinction related to the intrinsic problematic of research: technical/scientific research,

methodological/process-oriented research, and conceptual research (including, conceptual, semiotic, aesthetic etc). For example, research in fine art might be of scientific nature (e.g. research into the visual quality of oil paint through chemical analysis to improve its quality), as well as of conceptual/philosophic nature (e.g. the evaluation of the development is likely to require an analysis of the visual results within application dependent on expert judgment and within a conceptual framework pertaining to conceptual research).

A second aspect that might need clarification is the distinction between research and practice, which we use in this paper. As distinguished previously (Niedderer 2005b, p.3), the term 'research' is being used to denote the systematic inquiry to the end of gaining new knowledge, and a 'researcher' is a person who pursues research (e.g. in art and design). 'Practice' is used to refer to professional practice (in art, design, etc.) or to processes usually used in professional and creative practice to produce work for any purpose other than the (deliberate) acquisition of knowledge. 'Practitioner' accordingly refers to anyone who pursues professional/creative practice. Sometimes there is confusion between these terms, because one may occur in the context of the other. For example, a practitioner might also work in the academy and pursue research to inform their practice. This study will therefore be concerned with the relationship of practice and research in general, and the role of practice within research in particular regarding its use for the purpose of generating and communicating (experiential) knowledge.

2. METHODOLOGICAL APPROACH

In order to facilitate a comparison between current research practice and its terminology, we draw on Spradley (1979) who argues in his ethnographic studies for an objective distance from subjectivity when conducting linguistic analysis and evaluation. He makes a clear distinction between the native categories of language as opposed to the categories created by the investigator or an external environment to the respondents themselves. Employing terminology originating from the words 'phonetic' and 'phonemic' he described 'emic' descriptions of sound or language by discovering native categories and perceptions, whereas 'etic' descriptions of behaviour, of sound or anything else are based on categories created by the investigator, and are usually employed to compare things cross-culturally (Spradley 1979, p.231).

Although we are not conducting an ethnographic study, the principles identified by Spradley provide a useful approach to the comparison of research practice and related terminology, because we aim to understand things from the insider's point of view within the context of their own language at the same time as we recognise that researchers, when articulating their work, will often draw upon the conventions and language they perceive to be appropriate and in keeping with their respective peer group. To make this approach tangible, we have chosen a complimentary use of classification to relate different ways of using practice in research to existing terminology by using examples of "ideal types". With regard to categorising non-scientific phenomena, Stefan Körner (1974, p.692) explains:

> Classification in the social sciences was and still is to some extent concerned with so-called ideal types, such as the 'typical bureaucrat', limiting concepts, which, though not exemplified in reality, serve nevertheless to explain the social behaviour of real people by concentrating on and even exaggerating certain features of people while ignoring others. Though the predominance of ideal types in the social sciences may simply mark an early stage in their development, whether they are now dispensable is controversial. From the logical point of view, a classification into ideal types is a classification of real people only insofar as real people can be ordered by the degree to which they approximate the type. And, more generally, a classification into ideal phenomena requires for its application an ordering of real phenomena.

We have decided that it would be useful to adopt the principle of 'ideal types' for the purpose of our research, because it allows us to pinpoint a number of different ways of including practice within research and then to label them and to position them on a continuum, which in turn can be used to situate any specific case studies on this continuum. Thus with this research, we hope to provide a useful framework which will help researchers and practitioners alike to clarify their use of practice within research.

3. REVIEWING THE TERMINOLOGY OF USING PRACTICE IN RESEARCH

In this section, we review some of the terminology that denotes the use of practice within research and how it has developed. We briefly review why the terminology has developed. We then discuss relevant terms from current debates in the art and design before exploring cross-case patterns or categories of meaning and purpose.

There are two major developments within the Higher Education sector in the United Kingdom, which have focused attention on the role of practice in art and design research. The first are the changes to research degree regulations over recent years to allow submissions for the award to contain a practical element and the second is the Research Assessment Exercise 1992, prior to which art and design had been ineligible for research funding under its own categorisation (Frayling 1993). For Art and Design this was indeed the first time that the *'invention of ideas, images, performances, and artefacts including design where these lead to new or substantially improved insights'* had, in a formal sense, constituted [a contribution to] research (HEFCE, 1992, Annex A).

Durling (2000) point out that prior to these developments, UK art and design departments undertook both 'research' and 'practice'. The former being undertaken by staff engaged in theoretical and contextual studies within a humanities tradition, whilst the latter involved staff who sought to maintain their professional standing and skills within a vocational education system. The 1992 RAE legitimised activities previously considered to be professional practice as research, but the post rationalisation of work submitted and evaluated through the peer review process confused the previously held status quo of research operating within strict scholarly conventions leading to publication and further knowledge in the field.

From opening research to the inclusion of practice, the need arose to legitimise the use of practice within research and with regard to its contribution to knowledge, because the requirements for research remained the same, and any submission was and is still judged against the conventional criteria for rigour and validity of research. The abrupt integration of practice into research caused problems in terms of research conduct and quality (Park 2005, p.201), and the requirement for justification resulted in a growth of terminology that tried to legitimate the use of practice by labelling it, which we discuss in the following. As a result, a variety of terms have evolved between the two extremes – with 'practice' on one end of the spectrum and 'research' on the other – which are used to denote the use of practice in research (or vice versa) to various degrees, but which mostly remain unexplained, and which we discuss in the following.

To gain an understanding of the relative importance and/or popularity of each identified term generally, and in art and design in particular, we conducted a basic search on 'google scholar' for each term (search string: "term" / "term" + "art and design" ['design' alone produced no representative results]) which produced the following results:

Term	**Hits** (no qualifier)	**Hits** (qualifier: art & design)
Research	29,900,000	8,730
Practice-led research	66	24
Practice-based research	2,530	135
Arts-based research	12,800	300
Design-based research	27,200	113
Studio-based research	24	24
Practice-centered research	24	24
Critical inquiry	19,600	164
Investigative practice	246	3
Reflective practice	18,700	269
Evidence-based practice	28,700	54
Research informed practice	166	0
Research-led practice	20	0
Practice	8,560,000	6,970

Table 1: An overview of the Terminology

Apart from the basic terms (research, practice), the most often used terms in art and design seem to be 'design-based research', 'arts-based research' and 'practice-based research', 'critical inquiry', and 'reflective practice' or 'evidence-based practice'. 'Evidence-based practice' and 'critical inquiry' seem to be terms adopted from other disciplines, in which they are widely used. In contrast, the 'practice-based research' and 'reflective practice' have a relatively higher ratio of use in art and design. Relatively less important and of equal par are the three terms 'practice-led research', 'practice-centered research', 'studio-based research'. The remaining three terms, 'investigative practice', 'research-informed practice', and 'research-led practice' seem to have little relevance in art and design.

From the use of these terms, it seems possible to distinguish three kinds of terms: firstly, those related to research (arts/design-based research, practice-based research, practice-led research, practice-centered research, studio-based research) of which the terms 'arts-based research' and 'practice-based research' seem to have the most significance to the art and design community. Secondly, those related to practice (evidence-based practice, research informed practice, research-led practice, investigative practice, reflective practice) of which the term 'evidence-based practice' has most importance. Thirdly, 'critical inquiry', a term that connotes inquiry *per se* and which can be related to either research or practice.

There are two interrelated ways of approaching the meaning of each of the three categories, and to differentiate between the different terms within each category. These are firstly to analyse the uses of these terms in current literature to understand the 'emic' descriptions of the terminology identified within their original context, categories and perceptions, and secondly to compare them with regard to its 'etic' characteristics as identified by the investigator (Spradley 1979).

3.1 THE USE OF TERMINOLOGY WITHIN THE LITERATURE

In the review of the literature, which uses the aforementioned terms, the terms arts-based research', 'practice-based research', 'practice-led research', 'practice-centered research', 'studio-based research' are more or less used synonymously. For example Douglas et al (2000, p.2) points out that:

> In the UK and the US respectively, the terms practice-based research and arts-based research have been used to describe the kind of degree that includes both a creative work as well as a written thesis.

The term 'practice-centred research' has also been used within a framework describing the research process, often with an accompanying argument to describe its inherent integration within creative practice. Saikaly (2004, p.7) describes practice-centred research through design 'as a form of research' whilst Wallace and Press (2003, p.3) locate it within the context of methodology:

> the key objective of the research is to define methods that are rooted in craft knowledge and practice that can be applied to the design of digital communication devices, as a means of developing product concepts that are more desirable, relevant and significant to users.

It is worth mentioning 'studio-based research' at this point. The noun 'studio' was often cited in art and design professional practice and pedagogic research (e.g. Blair 2006). We also found that the term was a proposition located within the 'art practice as research' debate whereby visual artist-researchers are able to draw upon visual methods to undertake research inquiry as part of their practice (Sullivan 2005, p.17-19):

> The approach I take makes the case that informing theories and practices are found in the art studio, and the image of the artist-theorist as practitioner...Drawing on research that examines the studio activities of artists, I identify a wider set of cognitive and contextual factors that influence visual knowing.

Painter (1996) and more recently Piccini (2002, p.2) recognise the wider institutional context for practice-based research 'as arenas in which knowledges might be opened', whereby practice becomes a form of research and a way of making research publicly available. Margolin (2000, p.1) seeks to encourage practice-led research in product innovation to draw upon other fields of inquiry to understand its social-cultural dimensions:

> A much denser research culture would help us respond on a much deeper level to product innovations by thoroughly studying their effect on society.

The terms 'reflective practice', 'investigative practice' and 'evidence-based practice', also have similarities, but are somewhat differentiated in that 'evidence-based practice' seems used in a professional and educational contexts (including health, education and organisational development), while 'investigative practice' seems rather to be used in the context of critical theory.

Unsurprisingly, the literature referring to the term 'reflective practice' cites Schön (1983) and emphasises the role of reflection within a process to derive new insights and understanding to further professional practice. Hughes (2007, p.283) suggests that 'critical practices', can 'give voice' to research results through 'conceptual and representational tools'. The need to demonstrate the relationship between research and practice through reflective practice is also evident in relation to doctoral theses.

Doloughan (2002) and Reilly (2002) for example, draw upon the interrelationship of studio-based research and the documentary evidence required for demonstrating a contribution to knowledge through 'reflective practice'. There is also evidence that the interpretation and use of 'reflective practice' has led practitioner-researchers to develop the terminology whilst adapting it to their own needs. Finally, investigative practice and evidence-based practice becomes interchangeable to describe the process for deriving an evidence base to support a method of reflection within creative practice.

The above examples suggest that many of the terms used are being used within research strategies to explicate insights and understanding derived through practice but within an unsystematic and fluid structure. As suggested by Douglas *et al*. (2000, p.1),

> confusion may be a direct result of the same terminology being applied indiscriminately within the discipline, to very different types of research situations.

3.2 ANALYSIS OF THE TERMINOLOGY

We can now turn our attention to the analysis of the terminology. It is important here to reassert our belief that at one end of the linguistic spectrum research is a systematic inquiry and investigation that leads to new knowledge or understanding, usually in form of concept or theory building, and at the other, practice is the application of skills, knowledge and expertise, through action or exercise. With this in mind, we can summarise our findings from the literature within cross-cultural descriptions or 'etic' categories as suggested by Spradley (1979) in Table 2.

To summarise this discussion, a variety of terminology has developed through the merger of research and practice post 1990's. The review of these terms has shown that many of these terms are not clearly defined, and that they have multiple uses and interpretations. It seems therefore helpful to categorise the identified terms into three categories, which help to make sense of the context, purpose and outcomes associated with these terms. Within these categories, terms are often synonymous or denote overlapping phenomena, and some terms span two categories which highlights the difficulty of interpretation and utilisation of such terms in a consistent and rigorous manner. Moreover, it highlights the difficulty of determining the role and use of creative

practice within research. In Section 4, we therefore examine which parameters can be used to determine the rigorous use of practice within research.

Category (with reference to terms identified)	**Context**	**Purpose**
Research involving practice (practice-based research, studio-based research, practice-centred research, practice-led research, arts-based research, design-based research)	Research process based on or rooted in practice, or where practice plays a lead role in the investigative process Interventions/experiments are 'framed' investigate how practice can be enhanced or improved	Research outcomes make a direct contribution to, or are of direct relevance for, the advancement of practice Practice informs theory building within research to gain new insights, knowledge or understanding
Critical inquiry (critical inquiry, investigative practice)	Research is a systematic inquiry [Creative] practice is a variable process, usually seen as un-systematic [inquiry]	'Critical' aspect used to demonstrate objectivity, and distance from personal opinion, often supplemented with evidence through data gathering
Practice by reflection and/or research (investigative practice, reflective practice, evidence-based practice, research-informed practice, research-led practice)	Focus on creative practice as means to develop new insights and understanding through deliberate inquiry Recognition of the dynamic and reflexive nature of interactions and conceptual development	Reflection used to gain new insights and understanding upon practice – as post rationalisation on 'ordinary' practice Use of outcomes to refine practice and observe 'best practice'

Table 2: Categorising the Terminology

4. ESTABLISHING A FRAMEWORK FOR ANALYSING AND EVALUATING THE USE OF PRACTICE WITHIN RESEARCH

In this section we develop criteria for the use of practice in the first of the identified categories of terminology, i.e. in the category of research. The aim is to establish a generic framework to aid the understanding of how practice can be used to make a contribution to knowledge within, and for the purpose of research. The further aim is to overcome the 'sectarianism' in the existing terminology and to establish a common understanding of the use and purpose of practice within research.

As a basis for developing such a framework, we consider, firstly, what is regarded as valid and rigorous research and, secondly, in which ways creative practice can be used validly and rigorously in art and design research. Rigour in research has been described by Biggs (2005, p.5) as:

> the strength of the chain of reasoning and that has to be judged in the context of the question and the answer, for example in the context of design as opposed to the context of physics or philosophy. The central links of the chain comprise the method. The appropriateness or otherwise of the method determines the validity or otherwise of the outcome, whether we call this outcome an insight or new knowledge and understanding.

While Biggs has indicated that the chain of reasoning is rooted in the relationship between the research question, the context, the method and the outcome of research, his explanation raises the question how this rigour, i.e. the strength of the chain of reasoning, is to be judged? In order to approach this question it is useful to consider other criteria relating to the issue of quality and rigour of research.

In qualitative as well as quantitative approaches to research, objectivity, reliability, and validity are seen as essential criteria for the rigorous conduct and dissemination of research (e.g. Miles and Huberman 1994, p.278; Black 1999, p.35). For example, Miles and Huberman (1994, p.278-279) distinguish these terms as follows:

- *Objectivity* refers in the widest sense to the attempt to be as far as possible explicit about any underlying assumptions and (personal) bias of the research, and which should enable the replicability of any study, its process and results through other researchers.

- *Reliability* refers here to the consistency of a research process and whether it is “reasonably stable over time and across researchers and methods” (p.278). It is therefore linked to the guarantee of quality of research results.

- *Validity* concerns the credibility of any research study, its process and results. - This refers on the one hand to the *internal coherence* of any research, such as the choice of appropriate methods to the problem of inquiry or the appropriate linking of data to categories of the theoretical

framework used. On the other hand, it refers to *external coherence*, which pertains to the validity of the study in the broader research context, and whether the research is generalisable and transferable.

These three criteria usefully qualify what we understand with rigour in research. In the light of these criteria, we can now consider how practice can be used in valid and rigorous ways in research. However, before we begin this consideration, we have to briefly consider our underlying assumption, i.e. that creative practice used as a method in research allows researchers in art and design (and other practice-led disciplines) to draw on and integrate certain kinds of [tacit] knowledge within their research, to which they would not have access otherwise.

Our assumption is based on previous research by Niedderer (2007a, b), which has shown that conventional research prioritises explicit and propositional knowledge because of its language-based mode. Research therefore excludes certain kinds and formats of knowledge associated with practice, which are often called practical, experiential, personal, or tacit knowledge and which evade verbal articulation. Niedderer explains further that this tacit knowledge, which 'cannot be specified', is usually associated with vocational training and skill, and is (today) widely regarded as distinct from academic research, because it withstands articulation and argumentation (i.e. verification) and thus wider dissemination (Herbig et al. 2001).

Niedderer (2007b, p.2) has argued that the inclusion of tacit knowledge nevertheless seems essential for the success of any research. In particular, tacit knowledge plays an important role both in the research process and in evaluating and communicating research outcomes, because it is essential for the ability to execute and understand certain research tasks (skill associated with expertise) as well as to making discriminatory judgments (skill associated with connoisseurship). Niedderer (2007b, p.10) has argued further that to exclude tacit knowledge from academic research because it withstands verification is unjustified by showing that tacit knowledge can be verified. For example, this becomes apparent in relation to procedural knowledge (as knowing in action) where every action constitutes a judgment over what is right (to do) in every given moment and thus the knowledge is tacitly verified within and through action and its result. Niedderer (2007a, b) concludes that different/new methods may be

required for the justification and communication of tacit knowledge in research through practice, and that it therefore will be necessary to clarify the use of practice within research with regard to this.

This argument provides the rational and justification for the motivation to use practice within research. We now resume our consideration of how practice can be used in research in valid and rigorous ways. Above, we have identified how the meaning of rigour in research can be further specified through characteristics such as objectivity, reliability, and validity. We now need to consider what this means for the use of practice within research. The Arts & Humanities Research Council (AHRC) provides here useful guidance to ensure the consistent assessment of research that incorporates creative practice.

The AHRC definition of research, which is primarily concerned with research processes, rather than outputs, specifies four common issues which can be summarised as: the research problem to be addressed; context and field of inquiry; methods employed; and dissemination of results (AHRC, 2003). It is important to notice that these four issues are the same issues that Biggs has noted in his account of rigour in research and their coherent relationship. Practice is placed squarely within this theoretical framework of the AHRC definition, and within a process which seeks to make 'enhancements in knowledge and understanding in the discipline, or in related disciplinary areas' (AHRC, 2006, paragraphs 85-86), while providing a clear distinction between research and practice:

> Creative output can be produced, or practice undertaken, as an integral part of a research process…The Council would expect, however, this practice to be accompanied by some form of documentation of the research process, as well as some form of textual analysis or explanation to support its position and to demonstrate critical reflection…Work that results purely from the creative or professional development of an artist, however distinguished, is unlikely to fulfil the requirements of research.

With regard to the four aspects of question, context, method, and outcome of research, this definition seems to specify the use of practice in research in two ways. Firstly, practice can be used in the process of research as a method to generate or acquire knowledge; secondly it can be produced as an outcome of the research that is to embody knowledge. However, in both cases practice is required to be accompanied by

some written account (analysis, explanation) for it to be recognized as [part of the] research. This raises questions about a possible third role of practice in research and that is the role of practice as a means of communication in the dissemination of the research. It also leaves open the question about a possible contribution of practice to forming the research question or problem, and/or to providing a context to the specified research.

If, as discussed above, a coherent relationship between problem/question, context, method, outcome can be qualified through the criteria of objectivity (replicability), reliability (quality), and validity (credibility, generalisability and transferability), we have to analyse the impact of these two sets of variables and criteria concerning the rigorous use of practice within research. Although not explicit, the specifications of the AHRC definition importantly implies the relationship of the use of practice with criteria of rigor (objectivity, reliability, validity) identified above. For example, reflection and documentation may be seen to have the purpose to elicit any one of the three criteria, as well as the requirement of an analysis in support of the position of practice.

As part of the analysis, we have constructed a matrix, which relates the different variables as shown in Table 3. The Matrix offers generic descriptions of the use of practice in research with regard to the four stages of research identified by AHRC and also by Biggs, and in relation to the three criteria of rigour identified. We propose this Matrix as a tentative model with the aim to offer guidance for researchers from art and design to include, utilise, and enhance their tacit knowledge through the rigorous and valid use of practice in research.

Using **Practice** within **Research** with regard to…	**objectivity (replicability)**	**reliability (quality)**	**validity (credibility, genera-lisability and transferability)**
Research Problem/Question Practice posing a question or problem for investigation.	Practice may generate questions, which need to be made explicit, as well as any underlying assumptions, to achieve objectivity.	N/a?()	Whether the question adequately addresses the research problem posed by the practice (cf. Poggenpohl 2000).
Research Context Practice in context or as a context.	a) Practice (as a question) when used in research needs to be supported by appropriate documentation and critical reflection to ensure it can be situated against existing work in the field. b) (A body of) practice may provide the context to an inquiry when supported by appropriate documentation to ensure it represents existing work in the field.	Creative activities, performance, and practice outcomes which are firmly located within a wider context so as to allow other researchers to follow the reasoning.	Creative activities, performance, and practice outcomes which are firmly located within a wider context so as to provide the reasons for the inquiry and explain how it relates to other inquiries in the field.
Research Method Practice as method and way of investigation to gain new knowledge and understanding.	Being explicit about any underlying assumptions and (personal) bias of any processes of practice used as research methods.	Integration of practice in a consistent research process that is "reasonably stable over time and across researchers and methods".	The appropriate choice of method to the problem of inquiry or the appropriate linking of data to categories of the theoretical framework used.
Research Outcome Practice as providing illustrative or demon-strative evidence to underpin any claims & findings.	Sense making through reflections on practice, and evaluations based upon it, resulting in theory building, which is transparent in its rationale.	Sense making through reflections on practice, and evaluations based upon it, resulting in theory building, which is consistent in its rationale.	Sense making through reflections on practice, and evaluations based upon it, resulting in theory building, which is coherent in its rationale.

Table 3: Matrix for analysis of the use of practice in research according to the different stages of research in relation to the three different criteria for rigour (objectivity, reliability, validity).

5. CONCLUSION

In this research, we have explored existing terminology concerning the use of practice in research with regard to its contribution to knowledge. The review of literature, of which we have provided some samples in this paper, has shown that much of the terminology has developed as an attempt to justify the use of practice in research by labelling it. However, the terminology is not clearly defined and displays multiple uses and interpretations. The terminology as such can therefore not be used to clarify issues and uncertainties of using practice within research. In recognition of this, we have examined in a generic way how practice can be used in research, and we have developed a Matrix as a tentative proposal to aid understanding and analysis of the rigorous use of practice in research.

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