Practice-Based Research in Practice: Regulations and Recommendations

Linda Candy and Ernest Edmonds

ABSTRACT
This article is a companion to Practice-Based Research in the Creative Arts: Foundations and Futures from the Front Line. It begins with a discussion of the regulatory codes of practice that influence the nature of research and PhD submissions. Drawing on research into the experiences of practice-based PhD researchers working in the creative arts and our long experience of successful doctoral research in this area, we go on to recommend ways to improve the practices of Practice based Research.

Introduction
Research of any kind takes place within organizational, intellectual and social contexts. A PhD in most disciplines is normally judged on the basis of a submission of a written text, a 'thesis', which encompasses a full representation of the scope of the research program in text form with illustrations. The scope usually includes the research aims and questions addressed, the problems identified and any relevant gaps in existing knowledge, as well as the state of the art in the relevant area of research, the methods employed, the findings and implications, as well as the all important claim of a contribution to new knowledge. All of the above may equally apply in the case of the practice-based PhD, but there are significant differences, which have implications for the way the research is carried out and its distinctive type of methodology as well as the final form and content of the submission.

In the context of the Practice-based PhD, university regulations and codes of practice can have a significant impact on what is deemed appropriate for the research process and what is possible in the submission for examination. The wording of the typical regulatory frameworks for PhDs may refer only to the submission of a written thesis. For PhD research adopting a practice-based approach, it cannot be assumed that the claims being made for an award are based entirely on a written text, in fact quite the contrary. Moreover, the notion of a thesis in the normal sense of the word does not necessarily accord with the expectations of practice-based researchers in the creative arts in particular. In general, practice-based PhDs are most obviously identified by the inclusion of artifacts as part of the final submission, although, as we have made clear previously [1,2] this can vary according to whether the research centered on the artifact making or is about improving practice.

For a majority of PhD practitioner researchers, the primacy given to the role of the artifact in research is of paramount importance and where the university rules do not permit the inclusion of artifacts, both the process of making and the outcomes themselves, this can exclude such work entirely. This remains the case in many universities across the world today, indeed it may well be in a majority of cases. Therefore, opportunities for including artifacts in formal research remain limited on a world wide scale and within the context of academic PhD research, the changes to existing rules that not only permit artifacts, artworks, exhibitions and performances to be included in a PhD submission but actively encourage it, are found in a relatively small number of universities.

Nevertheless, there are universities where, for historical reasons, Practice-based Research has been taking place since the 1980s, and even earlier. In the UK, the CNAA rules that governed the examination submissions for higher degrees in the then Polytechnics were the first to include the submission of material other than a written thesis [3]. The criteria that allowed for the inclusion of an artifact in a PhD submission at that time continues to this day, especially in those universities that were former polytechnics and where the process of creation and its
outcomes were a fundamental part of the curriculum. Those criteria evolved into current guidelines for research set down by the Arts and Humanities Research Council which in its definition of research, states that creative output can be produced, or practice undertaken, as an integral part of a research process [4]. However the rules are careful to delineate the cases that would count as research as against pure practice and require documentation of the research process and a textual analysis or explanation that demonstrates critical reflection. Nevertheless, once sufficient UK university regulatory bodies for the award of doctoral qualifications began to allow creative artifacts to be included with a written thesis, the door opened to a new breed of PhDs in which the artifact is a research outcome that forms an essential component of the material presented for examination.

We contend that without an appropriate regulatory framework, a legitimate role for the designing and making of works within research is hard to justify and within the context of any academic discourse regarding practice-based research, can be very discouraging to those who seek to expand the scope of research and the PhD submission. This is not to say that there are no grounds for optimism. Indeed, the paucity of suitable regulatory frameworks can be set against other examples of good practice. One such can be found at De Montfort University Leicester (DMU). In this university, the regulations for submitting practice-based artworks are clearly and unambiguously written and offer a standard for how the rules should be written. The code of practice for research students undertaking PhD examinations provides a detailed specification of material permitted for PhD submissions as follows:

The degree of PhD is awarded to recognise the successful completion, under such conditions as are prescribed by Regulations, of a supervised programme of individual research, the results of which have been satisfactorily embodied in a thesis (or other presentation as defined in 1.8 below).

1.8 When permitted at the time of registration the thesis may be augmented by the presentation of work relating to an exhibition, performance or other creative work; or the submission of published work, together with a substantial commentary.

The examination code also specifies that the supervisor must make sure examiners can see and thereby experience the completed works whether by exhibition, or performance, in public or privately:

Supervisors of students who are undertaking their research degree by Exhibition, Performance or similar work must arrange prior to the oral for the full examination team to have sight of the work. This may be in the form of a performance to which the examination team are invited or could be a private showing of the work set up for this purpose. This showing can take place well in advance or on the day of the viva voce. [5].

Forms of PhD Submission
The PhD submission has traditionally taken the form of a written thesis. In the practice-based context there are inevitably differences and some institutions have set down formal rules that allow alternatives or material additional to the text alone [6]. Glasgow School of Art allows a number of different forms of PhD submission. Of these, “portfolio with written commentary” and “joint portfolio and dissertation” seem to be the two core categories. The former is basically an innovative creative work with an explanation of what is innovative about it and why it is new in the world. The second is partly a conventional thesis but includes, as an essential element, a creative work [7]. There are two further categories. “Portfolio with documentation” which allows the body of work to be submitted for the PhD in the form of, or together with, documentation. The candidate is not required to explain or discuss any new knowledge in a textual form. A candidate is also allowed to submit a “thesis” on its own in the completely conventional sense.
At the University of Technology, Sydney (UTS) practice-based PhD submissions can also take an alternative form to that of the written thesis:

**3.15 Work that is not print on paper**

It is recognised that a student’s research may not always be in the form of a written thesis. Performances, exhibitions, installations, websites, audio recordings, films, or engineering drawings, for example, are acceptable alternatives or attachments to a written work. In some research degrees, a written exegesis is required to accompany the creative work. This written text must conform to the formatting and presentation requirements listed above. Research work that is not print on paper must be recorded in a format which can be digitised and lodged in the library wherever practicable. Students should contact the library for assistance if required. [8]

This is an example that offers the widest range of practice-based PhD submission formats, from a conventional thesis with the addition, for example, of an artifact to the case where the only submission is the direct result of the practice itself. The option of a submission by published works is offered elsewhere but usually with an accompanying requirement for a relatively short thesis. Similarly at DMU, the size of the thesis is different according to whether or not the submission is practice-based or not: for a practice based PHD, the size of the thesis should not normally exceed 40,000 words whilst a non-practice based research thesis is 80000 words. Additionally, the category called a 'PhD by published works' by practice-based research requires only 10000 words whilst a non practice-based submission by published works requires 20000 words. Nevertheless, the minimum thesis for a submission by published works has specified qualities. It must be:

- an exposition and analysis, of approximately 10,000 words, of the work contained in the publications. The exposition document is regarded as central in enabling the student to demonstrate achievement in relation to the following criteria:
- it shall identify the main problems or issues under discussion; and
- it shall indicate the direction and thematic consistency of the publication(s); and
- it shall provide an authoritative critique of the work; and
- it shall locate the work in the context of the relevant literature; and
- describe and assess the original contribution represented by the publications submitted;
Other universities have taken tentative steps towards the position of accepting alternatives to the written submission but often the conditions are worded in a less explicit way than the examples given previously from DMU and UTS. In practice, the approach is to allow for exceptions where the outcomes of practice and the creative process are at the heart of the curriculum in particular disciplines. For example, York University’s general code of practice for all research degrees includes the following statement:

**Nature of the thesis**

12.1 Assessment for the award of a research degree will normally be on the basis of a thesis, but with the approval of York Graduate Research School the assessment for a specified programme may be on the basis of other materials arising from research. The assessment will be wholly on the basis of the thesis (or other materials prescribed for the programme concerned), and of an oral examination (viva voce), if required. [9]

In the rule above, we can see that the code gently indicates that it allows for special cases but only with the agreement of the graduate research school. That exception is manifested in the highly regarded Department of Music at York University, which has awarded PhDs purely on the basis musical compositions.

**Submission requirements**

A folio of compositions (scores/tapes/CDs), accompanied by a brief commentary on the pieces submitted. The exact quantity of works to be submitted is not strictly prescribed, but as a guide it is anticipated that the PhD folio should contain about eight works, of which at least one should be substantial, the MPhil folio about six. A folio may consist entirely of acoustic works, entirely of electro-acoustic works, or contain a combination of both. [10]

Whilst it is possible for the PhD to be awarded solely on the basis of acoustic works, in practice, this is becoming increasingly rare and more often than not, the works are accompanied by short commentaries. However, we regard this as being at some distance from the ideal and suggest that practice-based PhD submissions should include both written theses and creative works in order that the full implications of the outcomes can be revealed. In strengthening the value of practice-based PhD research, the thesis performs a vital function in presenting the interpretive commentaries and the proper contextualization of the work. (see [11,12] for examples of how this has been achieved).

It is interesting to consider what actually happens in terms of the shape and nature of submitted and awarded practice-based PhDs. Clements and Scrivener conducted a survey in which it appeared that a majority of UK arts practice-based PhDs did not conform to the requirements of research prescribed by the UK’s Arts and Humanities Research Council [13]. This is perhaps not surprising given the diversity of the codes of practice available and the consequent disparity in supervisory practices. Moreover, not only is there no commonly agreed wording for what is permitted for examinations, the very use of the term ‘practice-based' in relation to PhD submissions is hard to find in university regulatory frameworks. Without an explicit recognition of this approach to doctoral level research, it is hard to envisage the establishment of a secure basis for the approach and the growth of a commonly agreed methodological foundation that would strengthen its position in academic discourse. Having said that notwithstanding the fact that rules and recommendations are not always followed to the full, the context nevertheless defines the landscape within which research processes are developed and implemented so as to assume an accepted place in the range of options available.
Modeling Practice-based Research

Whilst it is important to consider the end products of practice-based PhDs as represented by the final submissions, it is also instructive to study the research processes. For example, in order to chart the student experiences, qualitative interviews were undertaken with 50 research students at various UK universities examining how they adapted to this kind of research [14]. That study included a substantial number of students focusing on the single dimension of their conceptions of identity. In contrast we adopted an in-depth approach to a small selection of research students whose work was familiar to us and still in progress so we could capture the live experiences. The results of the study are reported in the longer article available on the Leonardo website.

The study referred to above was not intended to establish general findings about the state of practice-based doctoral research. The overall aim was to identify those factors that might further an understanding of the practice-based PhD experience. Each individual case was different particularly in the way they related the making of creative works to the generation of knowledge about practice and the individual personal "practitioner frameworks" that informed future work [2] and it was not always easy to explain the differences. Nevertheless, from the study, we were able to identify a model that provided a representation of the practice-based research process that enabled us to position each approach in relation to the other and make comparisons with other cases. We call it the Trajectory Model (see Edmonds and Candy [16]. Briefly, the Trajectory Model represents the relationship between practice, theory and evaluation in practice-based research in which the practitioner follows a ‘trajectory’ or route, influenced by individual goals and intentions. Each of the three elements: practice, theory and evaluation involves activities undertaken by the practitioner in the process of making artifacts, developing conceptual frameworks and performing evaluation studies. In summary:

Practice is a primary element in the trajectory providing as it does the activities of creating artworks, exhibitions, installations, musical compositions and creative software systems, which provide the basis for conducting research.

Theory, as it is understood in the context of practice-based research, is likely to consist of different ways of examining, critiquing and applying areas of knowledge that are considered relevant to the individual’s practice.

Evaluation has a role defined by practitioners in order to facilitate reflections on practice and a broader understanding of audience experience of artworks. It usually involves direct observation, monitoring, recording, analyzing and reflection as part of a semi-formal approach to generating understandings that go further than informal reflections on personal practice.

In each individual case, the interplay between practice, theory and evaluation involves many iterations and interaction between the elements as the creative process drives a continuous process of change. The fact that such variation can occur within a highly structured approach to practice-based research that the particular PhD environment demands, is indicative of the way individuality, so important to creative people, can nevertheless be accommodated in appropriately structured formal research. Each practitioner developed a unique appreciative system that was used to guide both research and practice. Because each system arises directly from the process of creating, evaluating and reflecting upon artifacts already inherent in the practitioners’ normal practice, there is a strong propensity for carrying it forward into ongoing creative work. Most practitioners expected this to be a long-term outcome of engaging in practice-based research: in this sense, it can be expected to have benefit to practice that extends well beyond formal research [2].

Recommendations for Making Practice-Based Research Successful

Whilst practice-based research is a growing area of research, nevertheless it remains problematic as an approach to the PhD. In particular, not all universities have taken account of its particular characteristics and the necessary codes of practices, as discussed in section 1 above. We believe that the practice-based research community needs to extend the exchange
ideas and experiences in order to provide consistent methodological and supervisory guidelines. On the basis of extensive research and experience of PhD supervision in the practice-based area, we have identified some of the key factors, which are needed to make practice-based PhD research successful and offer some advice that we hope will contribute to the furtherance of good practice in the field.

**Regulatory Codes of Practice**

For practice-based PhDs, a critical difference from standard PhD models is the existence of regulations that validate the contribution that artifacts can make to the research process and its outcomes. For practitioners, the creation of artifacts, installations and performances is central to the research aims. The rules and regulations that govern the place of artifacts in PhD research differ between institutions and from country to country. Good models of rules for governing the submission of works and written theses are needed if high standards are to be established and maintained. University regulations, such as those of De Montfort University mentioned earlier, not only allow the submission of artifacts but also prescribe the inclusion of a written element and the criteria to be met in assessing the originality and sustainability of the contribution of the work in a coherent field of research. This combination of written and artifact elements is essential to the credibility of the practice-based PhD.

**Attracting and supporting students**

We think that it is important that students wishing to take on a practice-based PhD be already deeply involved in the relevant practice. It is not helpful for them to be learning both the basics of practice and the basics of research at the same time. The benefit of the practice-based PhD to established and experienced practitioners is evident and it is our view that the research outcomes from such practitioners are particularly valuable contributions to knowledge. In attracting students it is important to be clear that practice-based PhDs work best where the candidate is already a serious practitioner.

Being able to undertake a practice-based PhD is, as with other kinds of PhDs, dependent upon having studentships available with accompanying organizational support. The funding is of course very important but, in choosing between institutions that offer research studentships and a wealth of resources, a decisive factor is the quality of the environment, especially a supportive community in the intended area of practice. This cannot be achieved by simply putting on research methods courses, as helpful as they might be. Most importantly, a supportive environment means having access to fellow practitioners, including the presence of advisers who are respected as practitioners as well as being experts in research.

**Research Supervision**

Students are often prepared to relocate across long distances where the right adviser is available. A successful practice-based PhD program depends upon the availability of supervisors with appropriate skills and expertise. An important question to consider is whether or not being a practitioner should be a requirement for supervisors of practice-based doctoral research. For practice-based supervision, academic qualities need to be combined with practitioner experience and the ability to engage with the particular characteristics of practice-based goals and methodologies. Supervisors must have a high degree of expertise and experience of the candidate’s particular area of research as well as the ability to communicate, be open-minded and empathize with the student.

**Developing a research culture for practice-based research**

If the option to undertake a PhD is to be extended further to creative practitioners, many of whom are likely to be mature students, consideration needs to be given to the kind of research culture that is suitable for this kind of research. Supporting doctoral research not only requires more than library, studio and workshop resources but also the availability of an appropriate social context where the student does not work in relative isolation. The existence of a collegial environment around a research group is a vital feature of a successful research
culture. The environment needs to be one that both respects and is stimulated by the relevant areas of practice. This can be achieved only by enabling everyday exchanges, as well as regular meetings and research seminars, where students can test out developing ideas and experience constructive criticism from their peers. A genuine collegial culture works best where like-minded people can share interests on common ground.

**Research methods training**

Universities wishing to extend their research programs in the practice-based area would be advised to review the type of support they are able to provide to students and academic staff. Providing research courses in methodology is important and a normal part of current provision: in the case of practice-based methodology, this area should be included in student research methods courses and training courses for new advisers. Although in the case of experienced practitioners, this kind of support is unlikely to be a critical factor in attracting students in the first place, it is nevertheless important that high quality courses are offered.

The doctoral training program at DMU in Practice-based Research is an example of appropriate provision staffed by experts in practice as well as research [17]. Here the guidance includes agreed procedures regarding the research process, the creation of artworks and methodological frameworks for formal studies, how to evaluate appropriately in the context of practice and how to demonstrate that the claims in the thesis are valid. This approach differs from the findings of Clements and Scrivener who found that there was “a lack of conformity to the discursive formation of academic research, suggesting that either artistic research is fundamentally different from other research domains or that the practice-based research community has not come to terms with the generic research discourse.” [13]. This finding may of course, reflect an over casual attitude to supervision. Because of the complex nature of practice-based research and the highly individual, sometimes informal processes used in the practice, it is vital that a strong, clear and coherent guidance on the research methods used be made available if the kind of disparity reported by Clements and Scrivener between what is laid down in regulatory codes and the actual practice is to be reduced. Since that study was carried out a number of books and papers have appeared which provide more practical guidance accompanied by examples of successful PhD programs [12, 15].

**PhD Research Methodology**

There are many routes that can be taken in order to arrive at the research results of a practice-based research PhD. It is therefore important that candidates describe the route that they have each taken and justify the approach adopted. A chapter that is dedicated to methodology is the best way to achieve this. Whilst we would advise that it is better to use well-known methods, it is sometimes the case that a methodological innovation is one of the original contributions to knowledge in a PhD of this kind. When that is the case, all the context information should be provided, including a demonstration of its newness.

**The Written Element of the PhD**

We have observed that the practice-based PhD student is often much more motivated to undertake the practice than to write up the research. It is helpful therefore if an outline structure for a thesis is provided either by the supervisor or as part of the research methods support. This outline can be used to build up the thesis over the full period of the study. The inclusion of a chapter that is particularly useful in a practice-based research context but not normal in a conventional PhD is the description of the candidate's practice prior to starting the PhD. This account can form an extension to the state of the art or 'literature' report. It provides the examiner and subsequent readers with an understanding of the context and motivation to the practitioner's research.

**Archiving the PhD Artifact**

We have argued for the inclusion of artifacts in a PhD submission and the way in which it supports a research contribution to knowledge. This does, however, necessitate new forms of
archiving for the works, materials, systems and other documentation included in practice-based PhD submissions. It is important these they enter the records in the same way as the written theses, and that copies are lodged in the university library to be available in the public domain. Presently such archiving of the records of artifacts, installations and performances as valuable outcomes from practice-based research is often unsatisfactory. As a first step to improve this situation, adopting the stipulation set down in the DMU code of practice is recommended:

…the final submission is accompanied by some permanent record (for instance, computer disk, video, photographic record, musical score, choreographic notation, diagrammatic representation) of the exhibition, performance or other creative work where practicable, bound with the thesis and with the electronic copy. [5]

Only by submitting the works in a form that can be secured alongside the written thesis will the complete scope and outcomes of the practice-based PhD be archived for future generations.

PhD examination practices: to viva voce or not?
The viva voce system permits examiners to question candidates about their PhD submissions face to face in order to resolve any unanswered questions not addressed by the thesis. The practice is prevalent in the UK and Scandinavia and other parts of Europe but in Australia it is not normal practice, where examiners do not, as a rule, see the exhibition of candidates’ work as part of the examination process. Examiners see only the written thesis and any electronic material included with the thesis and assessment takes place by written report alone. This means that the inclusion of material pertaining to artworks must be self-explanatory. A question needs to be asked as to whether this is an appropriate way of examining practice-based PhD submissions particularly where artifacts, performances and exhibitions are included. We suggest that the examiners need direct access to, for example, performances or exhibitions in order to experience and appreciate the works in full.

Conclusions
At the centre of practice-based research in the creative arts is the making of artifacts and the processes used to design, construct and evaluate them. Because artifacts are integral to the research process, sharing the results of the research may be impossible to do without reference to the relevant works. We have seen that some universities and research funding bodies have facilitated the inclusion of material other than the written text with direct reference to different kinds of artifacts in their codes of practice. Nevertheless, this is but a beginning, as large swathes of university regulations, do not accommodate the artifact, and even rule it out as part of a PhD submission. However, we have argued here that the artifact alone is insufficient and suggest that the value of practice-based PhD research, also resides in the thesis that presents the vital interpretive commentaries and contextualization of the works. The second part of the article discusses some of the key factors which are needed to make practice-based PhD research successful and provides recommendations that we hope will contribute to improving the practice of practice-based research.

References
   http://www.ahrc.ac.uk/About/PeerReview/Documents/Definition%20of%20Research2.pdf
5. De Montfort University, (2015a) Code of Practice for Research Degree Students
   Incorporating: Research Degree Regulations:
   http://www.dmu.ac.uk/research/graduate-school/current-research-students/code-of-
   practice/code-of-practice.aspx
   http://www.visualartists.ie/index.html
7. GSA 2007/2008: Glasgow University Calendar 2007/2008 and previous issue to
   2001/2003 Schedule C GR. 97, Degree of Doctor of Philosophy by Research at
   Glasgow School of Art.
   procedures for Higher Degree by Research students:
   https://www.york.ac.uk/research/graduate-school/support/policies-documents/research-degree-policy/
    http://www.york.ac.uk/music/postgraduate/programmes/mpphilphd-composition/
    Practitioner, Libri Publishing Ltd: Faringdon, UK.
    and how contribution is made. Presented at Research into Practice, November 2008,
    RSA, London.
    Identity and Adaptation. Journal of Art & Design Education February 2003, vol. 22,
    no. 1, pp. 8291(10) The University of Gloucestershire, UK. Publisher: Blackwell
    Publishing on behalf of the National Society for Education in Art and Design.
15. Candy, L. and Ferguson, S. (2014). Interactive Experience in the Digital Age:
    Programme: http://dmu.ac.uk/study/technology/doctoral-training-programme/creative-
    technologies-doctoral-programme.aspx
Authors

Linda Candy BA, MPhil, PhD
Creativity and Cognition Studios
School of Software FEIT
University of Technology, Sydney
&
Cultural Communication and Computing Research Institute (C3RI)
Sheffield Hallam University,
Sheffield UK

Linda Candy is a writer and researcher who lives and works in Australia and England. She is presently adjunct Professor in the School of Software, the University of Technology, Sydney and a Visiting Professor at Sheffield Hallam University. Her subject is creativity with a focus on practice-based research and methodologies for evaluating interactive digital systems. She is co-founder of the ACM SIGCHI Creativity and Cognition conference series and an editorial board member of the Journal of Art, Design and Communication in Higher Education and the International Journal of Design Creativity and Innovation.

Ernest Edmonds BSc, MSc PhD
Institute of Creative Technologies
Leicester Media School
De Montfort University
Leicester, UK
&
Creativity and Cognition Studios
School of Software FEIT
University of Technology Sydney

Ernest Edmonds is a pioneering digital artist researcher who first used a computer in his art in 1968. Recent exhibitions include the one-person shows Light Logic (Site Gallery, Sheffield and Conny Dietzschold Gallery, Sydney), a Retrospective in Beijing and Systems and Software in Shanghai. Recent group exhibitions were in Riga, Latvia, Olomouc, Czech Republic, London’s GV Art gallery and Primary Codes in Rio de Janeiro. Ernest is Professor of Computation and Creative Media in the University of Technology, Sydney and Professor of Computational Art at De Montfort University, Leicester, UK. He is Editor-in-Chief of Leonardo’s Transactions and of Springer’s Cultural Computing book series. http://www.ernestedmonds.com/