Forms and Reforms
of Doctoral Education in Schools
# of Architecture in Europe

Sally STEWART
Mackintosh School
of Architecture
United Kingdom

What do we have now?

The context and dilemma

An exploration of doctoral education within schools of architecture at this point in time appears to be particularly apposite. Given the recognition and growing acceptance of the potential for research to drive development and innovation in both architectural practice and education, exactly how doctoral training and study might be aligned and structured to help develop research behaviours and thinking becomes a critical question for all higher education institutions. This also reflects the shift, particularly marked in the UK, for universities to become mixed economies of teaching research and consultancy, as opposed to the historical model of institutions' activity and income stemming from and biased largely towards teaching. While this has typically been led by necessity to diversify to achieve greater financial viability and sustainability, it has prompted many insti-

tutions to reconsider the place of research and consultancy within their portfolio of activities.

The potential for doctoral research and training to provide both momentum and focus to research activity within institutions, while also growing researcher capacity both there and within the architectural profession, is enormous. However this requires any institution to consider doctoral provision in particular in a far more strategic way, and to consider how to lead the development of this field rather than merely responding incrementally and in a reactive manner. This is a significant departure from the past, and parallels other significant shifts and changes in the higher education context.

One of the key questions therefore is how can schools contribute significantly to architectural research and innovation, and to what extent do they have to rethink their output particularly in relation to doctoral education to be able to achieve this?

Doctoral Education at the Mackintosh School of Architecture

A doctoral programme has been available in the Mackintosh School of Architecture through the University of Glasgow since 1975. Although the Mackintosh School is now part of the Glasgow School of Art, the doctoral degree programme has remained essentially unaltered over the intervening period and continues to be validated by the University of Glasgow. As such the programme is a generic one, and open to all areas of potential doctoral research and is not specific to the creative arts, architecture or any one discipline. The key stipulation is that programmes of research may be proposed in any field of study within the expertise of GSA, subject to the requirement that the proposed programme is capable of leading to scholarly research and its presentation for assessment by appropriate examiners.

Two research degrees are available, Doctor of Philosophy (PhD) and Master of Philosophy (MPhil). The PhD is normally undertaken through three years of fulltime or five years of part time study. The MPhil is normally undertaken though one year of full time study or two years of part time study, and can be awarded as an intermediate award for students not progressing to complete a PhD.

The defined aim of the PhD is to make an original contribution to knowledge. On completion of the research programme and in relation to their research PhD candidates should show evidence of being able to:
- Discover, interpret and communicate new knowledge and understanding thorough original research and or scholarship of publishable quality which satisfies peer review;
- Present and defend research outcomes which extend the forefront of a discipline or relevant area of professional practice;
- Demonstrate a systematic and extensive knowledge of the subject area and expertise in generic and subject or professional skills;
- Take a proactive and self-reflective role in working and to develop professional relationships with others where appropriate.

- Independently and proactively formulate ideas and hypotheses and to design, develop, implement and execute plans by which to evaluate these;
- Critically and creatively evaluate current issues, research and advanced scholarships in the discipline.

The aims of the MPhil are ostensibly the same. Unlike undergraduate or taught post graduate programmes, the years of study are seen to be at one single level with the learning and research outcomes being achieved through sustained engagement with the subject matter rather than a progression through a series of progressive learning outcomes.

Candidates applying to the doctoral programme must provide a detailed proposal of their programme of research structured around the following information;
- Research Questions and Problems - what do you intent to find out;
- Research Aims and Objectives - what do you hope to achieve;
- Research Rationale - why do you think the research is worth doing;
- Research Context - what is the relevant literature and practice within your particular field of enquiry;
- Research Methodology – What procedures and or analytical processes might you use to answer your questions
- Research Outcomes - what is the balance of visual/textual materials;
- Ethical implications of the proposed research

In additional candidates must hold an upper second classification of Honours degree from any British university or equivalent. The application should provide two academic references, English language attainment certificate for students whose first language is not English and a portfolio of supporting visual and or written work as appropriate.

Consideration of the proposal takes into account the candidates qualifications, whether the proposed programme of work is capable of being studies to the depth required to obtain a Phd, whether the proposed programme of work is capable of being completed within the designated time period, whether the appropriate resources and facilities will be available and whether the appropriate supervision can be provided.

Applications are reviewed in a three stage process, firstly by a panel of PhD co-ordinators and nominated staff to review the candidates qualifications, the overall quality and robustness of the application, and secondly by potential primary and secondary supervisors to review the detailed proposal to consider whether or not the application should progress to the final selection stage of interview. The interview panel will then make a recommendation to the Research Degrees Sub-committee as whether or not to offer a place to the candidate. Successful candidate are made an offer of a place identifying the primary supervisor, host school and start date.

Supervision

A supervision team normally comprises two supervisors, with one acting as Primary Supervisor or Director of Studies. A third supervisor may be appointed if it is required by the project. External supervisors are only appointed when the expertise required by the project is demonstrable and the expertise is not available within the institution.

Students must meet with supervisors on a regular basis and levels of contact across the academic year are defined and benchmarked against national level descriptors and funding council requirements. Primary supervisors are expected to provide 36 hours of input across the year, including 9 hours normally dedicated to administration, and 27 hours to both direct contact through supervision meetings and indirect contact through reading, review and feedback.

Supervisors must either hold a doctoral degree or have a doctoral training qualification. In addition primary supervisors must also have supervised one or more research student to completion. Supervisor will not normally be responsible for more than six research students at any one time. Staff undertaking research towards a Phd will not be appointed as supervisors.

Research Training

GSA provides an institution wide generic research skills programme which is mandatory to all first year MPhil and Phd students. The programme aims to:
- Provide training in generic research skills appropriate to the level of study in Architecture, Art, Design, Digital design, Historical and Critical Studies and related fields;
- Provide students with the necessary study, professional and transferable skills to engage in a project of advanced research in their field of enquiry;
- Enable students to develop the necessary critical judgement to engage in post-graduate research
- Provide support for students in their initial stages of their programmes of study, enabling increasing independence

At the start of their training programme students are also asked to complete a training needs analysis to provide a profile of the student's existing strengths and capabilities, allowing a more detailed and tailored regime of training to be identified and agreed with the supervisory team and the Phd co-ordinator.

Although candidates provide an outline of their programme of research with their application, this outline is considered to be a proposal and is not regarded as binding. During the first session, the student in consultation with their primary supervisor formulates a closer definition of the topic, and decided how they intend to present their submission. When agreed this forms the basis of the Registration of the research project.

Forms of submission

Students submitting for the degree of Phd may submit their portfolio of work in one of two forms;

- by research project through a portfolio combined with an extended written text of 25,000 – 40,000 words which together represent or embody new knowledge;
- by written thesis of between 70,000 – 100,000 words

Examination

The final submission is examined by a panel of examiners, usually one internal and one external, and convened by a convenor. The role of the examiners is to act both as experts and peers.

The external examiner provides specific subject expertise that align with the research topic, while the internal examiner provides knowledge of doctoral level expectations and quality thresholds. Neither examiner has had any input to the supervision of the student or the development of the research work.

The examination takes place in camera, and provides an opportunity for the examiners as a panel of experts and peers to interrogate the work, and the candidate to be able to demonstrate their expertise in the area and ownership of the thesis in particular. This form of examination allows an in-depth and focused discussion of the thesis, but does not necessarily entails a wider dissemination of the new knowledge.

The examiners may determine that the submission is accepted for the degree; that it can be accepted subject to minor changes or subject to more significant changes in which case a period of time during which the changes must be made will be specified.
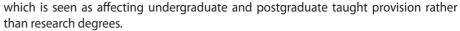
The panel may also decide that the submission is not acceptable either on the grounds that it requires elements require significant revision or that the overall standard is not acceptable, and in these circumstances a period of up to one year can be given for the necessary work to be carried out buy the candidate. The panel also has the right to reject the thesis in its entirety with no right to revision and resubmission.

Normally the thesis or research report becomes available for consultation by the wider community after it has been deposited in the GSA library. However authors are permitted to restrict access for one year or at most three years, unless the reader has received the author's express permission to see it. The supervisor will be able to advise the author whether this is advisable for commercial or patent reasons.

Unrestricted thesis / research projects are available for loans to other United Kingdom libraries through the Inter-Library loan Service. Photocopied or microfilmed copies may be supplied to libraries and individuals on payment of the reproduction costs. Copying and loaning do not affect the author's rights in any way.

Has it changed in time? Has the Bologna process had any influence?

In many ways the structure and dimensions have changed very little over time, and have been very little effected by external influences such as the Bologna process which is seen as affecting undergraduate and postgraduate taught provision rather than research degrees.

The model remains three years of full time or five years of part time research led study focused around a research proposal and the development of an area of new knowledge.

There are limited amounts of funding for post graduate and research degrees, and this teamed with the length of professional academic study in architecture and the raising costs of tuition, very few numbers of students intending to qualify as architects within the UK undertake doctoral study. Doctoral study is not seen as critical to the path of entering the architectural profession. Likewise, while a PhD is increasingly cited as a condition for research and doctoral teaching posts, most teaching posts now require a teaching qualification rather than a research degree, in part reflecting the professionalisation of university teaching, and in part recognising the lack of penetration the PhD has had into the wider academic population

In this way students undertaking a PhD at the Mackintosh School of Architecture can be described as undertaking a PhD through the study of an architectural related or focus subject rather than an architectural doctorate. At present the concept of the architectural doctorate have no meaning for the institution, the doctorate seen as being specific to no particular field, but potentially being relevant to any. In this way the model of study deliberately remained open with little specificity. This is quite typical across the UK sector rather than being a specific characteristic of MSA.

Some subjects within the field of architecture have been better represented in doctoral study that others, namely history, theory and technology. Significantly under-represented have been research programmes exploring practice and design, particularly those that are practice based or practice led. Given the intrinsic link with practice, both in the architectural professional and architectural education this must represent or rather miss-represent the need for or the development of new knowledge within the architectural field.

Vision for the future

Given the shortcomings identified in the current situation, how is the Glasgow School of Art attempting to remedy the situation?

GSA has undertaken a series of steps to increase the supervisory capacity across the institution. Having identified the lack of supervisory capacity in certain areas, supervisory training was offered to all research active staff through SEDA (Staff and Educational Development Association). This allowed staff who did not have a Phd to become suitably qualified, while providing a platform for a shared discussions on the nature and challenges of doctoral research. Subsequently GSA has validated a Post Graduate Certificate in Supervision, which provided the current training vehicle for potential doctoral supervisors.

Providing such training had allowed the number of supervisors to double within the last six years, and also allowed the development of supervisory capacity across all departments and disciplines.

In tandem with this the institutions website has been revised to provide dedicated pages introducing current supervisors, their research and supervisory interests and experience and links to the GSA research repository, RADAR, allowing potential candidates to consider the expertise available, and whether the institution can provide appropriate supervisory support. Research students are now also represented on the website, making them an increasingly visible part of the research community.

The development of the RADAR research repository has also provided a comprehensive and accessible record of the range of research being carried out within this small specialist institution. The repository provides a means for staff to gather and archive research outputs, and to set in context the new knowledge they contain. This, in tandem with the supervisors research pages, provide a clear indication of the types of research activity the potential supervisor engages in, and read in conjunction with the research student pages, also gives an indication of the supervisors track record and current supervision load.

Much of our current work is directed to creating a critical mass within the doctoral community in MSA and GSA, and to connect staff and research students explicitly to current research centres and clusters. Within the Mackintosh School of Architecture these are;
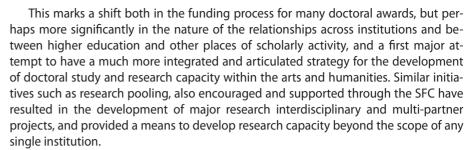
- MEARU – Mackintosh Environmental Research Unit
- Glasgow Urban Lab
- History of Architecture and Urban
- PRAXIS
- Pedagogy and architectural education practice

In addition these overlap with other areas of interdisciplinary practice or strategy development within the wider institution such as with the Health and Well being resulting in collaborative supervisory teams. In this a cross institutional Research Degrees Sub-Committee which reporting to the Research and Knowledge Exchange Committee is crucial to be able to ensure that an overview of provision is maintained, and doctoral students needs are supported irrespective of subject matter, research methodology, supervision team or training needs.

Simply put our vision is to locate doctoral students at the heart of the GSA research community.

The Scottish context and beyond

The Scottish Graduate School for Arts and Humanities (SGSAH) has recently been created with the aim of developing a more cohort, strategic and sustainable partnerships with organisations from across the creative, cultural and heritage sectors, and to provide access to research expertise across both universities and other organizations such as museums, archives and special collections. The SGSAH is funded both through the Scottish Funding Council (SFC) and the Arts and Humanities Research Council, (AHRC).

This marks a shift both in the funding process for many doctoral awards, but perhaps more significantly in the nature of the relationships across institutions and between higher education and other places of scholarly activity, and a first major attempt to have a much more integrated and articulated strategy for the development of doctoral study and research capacity within the arts and humanities. Similar initiatives such as research pooling, also encouraged and supported through the SFC have resulted in the development of major research interdisciplinary and multi-partner projects, and provided a means to develop research capacity beyond the scope of any single institution.

The SGSAH supports the development of research students and early career researchers in Scotland through a range of activities. It is based upon the AHRC Doctoral Training Partnership Scotland, a prestigious consortium of eight Higher Education Institutions comprised of the Universities of Aberdeen, Dundee, Glasgow, Edinburgh, St Andrews, Stirling and Strathclyde, and Glasgow School of Art.

The AHRC DTP Scotland supports doctoral research and training in a wide range of Arts and Humanities disciplines, and provides access doctoral funding, currently through awarding fifty four fully funded doctoral student scholarships per annum. Applications for these are open to any student who holds the offer a conditional or unconditional offer at any of the consortium partners, and must be supported by a nomination from the host institution. Applications are considered by four specialist disciplinary panels, and then ranked identifying the those with the strongest combination of research proposal, supervision expertise and research profile.

In addition the resulting studentships may able be extended form the usual three years of study to include a further six months of funded activity as an embedded practitioner within on of the consortium's industry partners, thus providing both funded post doctoral experience and direct articulation of new knowledge and expertise to closely related areas of the creative and cultural economy.

SGSAH will provide the framework for the. Working together, we are able to provide our students with access to research expertise across the nation and to our universities' world-class resources – including museums, special collections and archives. Supported by the Scottish Funding Council and the Arts and Humanities Research Council (AHRC), we aim to create a supportive community of doctoral graduates, capable of being research leaders in whichever sector they choose to enter upon graduation.

The purpose of the SGSAH is not only to develop the cohorts of students funded through the AHRC, but to impact all postgraduate researchers across the SGSAH consortium, through the development of innovative and collaborative training provision that anticipates the needs of future practice rather than merely repeating what currently exists. This is perhaps the most challenging aspect for the consortium partners, and is dependent on the discussions occurring within and the intelligence coming the disciplinary panels. For architecture this means a dialogue with other visual and creative disciplines including creative writing, poetry, theatre and drama, film and television, fine art, design. This also presents the opportunity to better understand the nature and content of research proposals, research methodology and potential research collaborations being considered within other institutions and schools of architecture.

Glasgow School of Art is also a partner in the ADAPT-r ITN, (Architecture, Design and Art Practice Training-research Initial Training Network)–a partnership between seven schools of architecture across Europe, providing doctoral training and early career research fellowships aimed at developing practice based research across architecture, design and fine art. The network, funded through the Marie Curie FP7 initiative for four years, aims to build capacity in practice based research while also developing specialist research training suitable to and supportive of the nature of research in and of creative practice, developed and tested through forty early career research fellows and seven experienced researchers. At the heart of the network is a programme of six monthly Practice Research Symposium, allowing a regular shared research training programme to be established, while giving doctoral candidates the opportunity to share research work in progress. Alongside this the ADAPT-r ITN will also result in two major research conferences, a major exhibition, three key books, and a website providing public access to research and events.

Participation in both of these consortium provides insights into the parallel or alternative doctoral programmes at other institutions in the UK or across Europe, as well as helping to develop and disseminate the creative practice research.

Expected profile of a researcher

To understand the expected profile of the future researcher, it is perhaps useful to look at the expectations embedded within the doctoral research training which is required to be undertaken by all candidates irrespective of the detailed research proposal. In the most part this training is generic, and has been developed over time, based on the intrinsic requirements of research activity as recognised in universities, and latterly in response to the training requirements set out by the UK Research Councils.

Training requirements

The UK Research Councils collaborate to identify best practice and to set standards in doctoral and research training. In considering the range of research skills to be developed and promoted, there is recognition that while much research training may occur at the outset of a research programme or degree, the process will also be continuous and develop throughout the course of the research. While generic research training programmes can provide access to common methodology and practices, key thresholds and behaviours, these can be further expanded and enhanced by detailed and strategic consideration by the researcher and supervisory team, to more fully align with the research proposal and the researcher's individual needs.

The Research Councils also emphasise the belief that training in research skills and techniques is core to the development of the research students, and that the doctoral student is expected to make a substantial contribution to knowledge in their area, normally leading to published work. While the development of employment related skills may form a component part of this, they should not detract from this the core objective.

The purpose of this statement is to provide a common view of the skills and experience of a typical research student s thereby providing universities with a clear and consistent message aimed at helping to ensure that all research training is of the highest standard, irrespective of discipline. In additional it is expected that individual research councils may also further define areas of specialist training appropriate to that field.

Research skills and techniques - to be able to demonstrate;
- The ability to recognise and validate problems
- Original independent and critical thinking, and the ability to develop theoretical concepts
- A knowledge of recent advances within one's field and in related areas
- An understanding of relevant research methodologies and techniques and their appropriate application within one's field
- The ability to critically analyse and evaluate ones findings and those of others
- An ability to summarise, document, report and reflect on progress

Research environment – to be able to;
- Show a broad understanding of he context, at national and international level in which the research takes place.
- Demonstrate awareness of issues relating to the rights of other researchers, of research subjects, and of others who may be affected b the research eg confidentiality, ethical issues, attribution, copyright, malpractice, ownership of data and the requirements of the Data Protection Act.
- Demonstrate appreciation of the standards of good research practice in their institution and or discipline
- Understand the relevant health and safety issues and demonstrate responsible working practices.
- Understand the process for funding and evaluation of research
- Justify principles and experimental techniques used in ones own research
- Understand the process of academic or commercial exploitation of research results

Research management - to be able to;
- Apply effective project management through the setting of research goals, intermediate milestones and prioritisation of activities
- Design and execute systems for the acquisition and collation of information through the effective use of appropriate resources and equipment.
- Identify and access appropriate bibliographical resources, archives and other sources of relevant information.
- use information technology appropriately for database management, recording and presenting information.

Personal effectiveness – to be able to;

- Demonstrate a willingness and ability to learn and acquire knowledge
- Be creative, innovative and original in ones approach to research
- Demonstrate flexibility and open-mindedness
- Demonstrate self discipline, motivation and thoroughness
- Recognise boundaries and draw upon or use sources of support as appropriate
- Show initiative, work independently and be self-reliant

Networking and team working – to be able to;

- Develop and maintain co-operative networks and working relationships with supervisors, colleagues and peers, within the institution and the wider research community
- Understand one's behaviour and impact on others when working in and contributing to the success of formal and informal teams
- Listen, give and receive feedback and respond perceptively to others

Career management – to be able to;

- Appreciate the need for and show commitment to continued professional development
- Take ownership for and manage one's career progression, set realistic and achievable career goals, and identify and develop ways to improve employability.
- Demonstrate an insight into the transferable nature of research skills to other work environments and the range of career opportunities within and outside academia
- Present ones skills, personal attributes and experiences through effective curriculum vitae, applications and interviews

To be innovative and venturous, one needs to be clear sighted, well equipped mentally and technically, able to harness your initiative and curiosity, persuasive and self reflective. The demands of contemporary doctoral practice are no less exacting than those of architectural practice.

Related Sources and Documents

Arts and Humanities Research Council
http://www.ahrc.ac.uk/Funding-Opportunities/Postgraduate-funding/Pages/Postgraduate%20funding.aspx

ADAPT-r Initial Training Network
http://adapt-r.eu/

Engineering and Physical Sciences Research Council
http://www.epsrc.ac.uk/Pages/default.aspx

Research pools: Scottish Funding Council
http://www.sfc.ac.uk/research/researchpools/researchpools.aspx

The Glasgow School of Art
http://www.gsa.ac.uk/study/graduate-degrees/doctoral-study/

Joint Research Councils' Statement
The Vitae Researcher Development Statement
http://www.vitae.ac.uk/researchers-professioanl-development/about-the-vitae-researcher-development-framework/the-vitae-researcher-development-statement

Postgraduate Certificate in Supervision
http://www.gsa.ac.uk/study/graduate-degrees/pgcert-%28supervision%29/

RADAR; research art design architecture repository
http://radar.gsa.ac.uk/

SEDA supervising postgraduate research
http://www.seda.ac.uk/?p=3_1_10_1_13

Scottish Graduate School for Arts and Humanities
http://www.sgsah.org.uk

Descriptor for higher education qualification at level 8: Doctoral Degree
QAA UK quality Code for Higher Education, Part A: Setting and Maintaining threshold academic standards Chapter A1: the National Level (p14)
http://www.qaa.ac.uk/AssuringStandardsandQuality/quality-code/Pages/Quality-Code-Part-A.aspx

Scottish Credit and Qualifications Framework Level 12 Descriptors
http://www.scqf.org.uk/The%20Framework/Level%20Descriptors