

## CADQ Guide

# Resources for pedagogic research

This guide is focused on research into learning and teaching and has three main sections which can be linked to via the adjacent contents box.

### Designing pedagogic research

This document aims to provide a brief, simplified, guide to key areas you need to consider when designing pedagogic research. There are many reasons why you may embark on research into learning and teaching, for example the research can be used to inform your teaching and/or you may want to write up your work for publication. The level at which you wish to use your findings will inform the depth of design of your research.

There are a number of issues to consider before designing research.

- *Start with your research aim*

This should be clear, focused and doable given your timescale and resources. Useful information on how to narrow your focus can be found in Henn, Weinstein and Foard (2006, pp. 50-52).

- *What are your research questions?*

Once you have a clear aim, you can begin to develop your research questions. You need to think here about how they relate to existing theory and research and how your research contributes to new knowledge (for example, does it contribute towards new theory, new research methods or both?)

- *Who is your audience and where do you intend to disseminate your research?*

Journals, for example, differ in the level of detail required in methodology so it is recommended that you look at the requirements of the journal in which you would like to publish before you design your research.

- *What is your epistemology?*

What are your beliefs about how valid knowledge can be obtained? This will influence your approach to your research. If you are a positivist, for example, (who believes that valid knowledge can be obtained through a scientific approach), you are likely to choose a quantitative research method that begins with a theory and tests that theory. If you favour the social constructivist view that meaning is subjective, gained through interactions with

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[Designing pedagogic research](#), written by Sarah Lawther (LLR)

[Winning funding](#), written by Wendy O'Neill (CADQ)

Including links to the NTU case studies in the CADQ Case Study Resource

[Publishing your work](#), written by Michaela Borg (CADQ)

others, you would be more likely to choose qualitative research methods that explores themes, and is about generating theory and finding patterns of meaning.

- *What approach will you choose? Quantitative, Qualitative or a Mixed Methods approach?*

Your strategy of inquiry will depend on your epistemological approach. A quantitative strategy could, for example, use experimental designs or non experimental design such as surveys. A qualitative strategy could use narratives, ethnography, grounded theory or case studies. Mixed methods research is relatively new in social science research methods and is more than triangulation: mixed methods can mean using a mix of different epistemological beliefs, different methods (qualitative and quantitative), different methods of data collection (focus group, survey) and different analysis of data. A mixed methods strategy could use a combination of these strategies at the same time (concurrent) or one after the other (sequential). Authors worth looking at in this field are Creswell and Tashakkori and Onwuegbuzie.

- *How will you collect your data?*

The choice of data collection methods are driven by your aim, your epistemology, your strategy of inquiry and what you would like to do with the data. You could use for example: questionnaires, interviews, focus groups, tests (such as personality tests), observation or secondary data (such as censuses, existing survey data). Bell (1999) and Denscombe (2007) have useful guides on how to carry out many of the above.

- *How will you choose your sample?*

Again, this differs with your method and needs to be considered in your research design. [If](#) you are intending to carry out statistical analysis you will need to ensure that you have used the appropriate sampling method.

- *Have you considered the ethical issues with your research?*

These will differ according to your method: ethical issues with quantitative research can be different to those in qualitative research. The aim with a mixed methods approach would be for each approach to compliment each other, to minimise the ethical issues rather than increasing the ethical issues. Information about ethics and governance at NTU can be found at: [http://www.ntu.ac.uk/research/research\\_at\\_ntu/research\\_integrity/index.html](http://www.ntu.ac.uk/research/research_at_ntu/research_integrity/index.html) *Have you considered the validity (both internal and external) of your research?*

Does the data measure what you are claiming that you have measured? How much can you infer that what you have found out can be generalised to other situations? Again, issues of validity and reliability differ between quantitative, qualitative and mixed methods research.

- *How will you store and analyse your data?*

Both qualitative and quantitative data can be stored manually (for example hand-written interview notes, completed surveys) or electronically (for example Word). Data can also be stored in databases or using data storage systems, some of which can also be used to analyse data. Quantitative data systems include SPSS for storage, analysis and graphing and Excel for storage and graphing. Qualitative data systems include NVivo and Atlas-ti which can be used for storage, coding, and text retrieval. The way you store and analyse

your data needs to be carefully recorded to allow for accurate reporting and to enable the research to be repeated if and when necessary

- *How will you write up your data?*

The research process should be described clearly so that anyone reading the report would be able to replicate the research. The style of writing a research report differs between quantitative, qualitative and mixed methods research.

A quantitative report for example, would start with the hypothesis, the proposed theory, and be about whether the research supports or rejects the hypothesis so would use a more formal reporting style.

A qualitative report would be looking at meanings and patterns that can be derived from the research so would be more likely to use the research to generate possible theory from the research and suggest further areas of research.

If you are using mixed methods, the research can be written up sequentially (that is, for example, the focus group results, then the survey results) or integrated into key themes found overall. Useful writing guidelines for research reports can be found in Creswell (2003, pp. 49-69). A useful description of the differences and examples of how visual displays can be useful in describing the process of research (which are becoming increasingly common in mixed methods research) can be found in Tashakkori and Teddlie (2003, pp. 329-346).

- *Working in a research team*

It is recommended that before the research is begun, a division of skills, responsibility and deadlines is agreed. If, for example, data analysis is to be ongoing throughout the project (such as in a group diary) this needs to be decided before the project begins.

### **Key texts**

*The following are recommended for those that less familiar with social science research methods:*

BELL, J., 1999. *Doing your research project: a guide for first-time researchers in education and social science*. 3<sup>rd</sup> ed. Buckingham: Open University Press.

CRESWELL, J., 2003. *Research design: qualitative, quantitative and mixed methods approaches*. 2<sup>nd</sup> ed. London: Sage.

DENSCOMBE, M., 2007. *The good research guide*. 3<sup>rd</sup> ed. Maidenhead: Open University Press.

HENN, M., WEINSTEIN, M., and FOARD, N., 2006. *A short introduction to social research*. London: Sage.

Internet for social research methods tutorial. Available at:

<http://www.vts.intute.ac.uk/he/tutorial/social-research-methods> [Accessed 15 December 2012]. This offers a tour of useful websites about social science research methods.

### **Cont'd**

### Key texts cont'd

MANN, C., and STEWART, F., 2000. Internet communication and qualitative research: A handbook for researching online. London: Sage.

MASON, J., 2006. Six strategies for mixing methods and linking data in social science research [online]. Available at:

<http://www.socialsciences.manchester.ac.uk/medialibrary/morgancentre/research/wps/4-2006-07-rlm-mason.pdf> [Accessed 23 June 2015].

*More detailed resources on research methods:*

CRESWELL, J., 2007. Qualitative inquiry and research design: choosing among five approaches. London: Sage.

DE VAUS, D., 2002. *Analyzing social science data*. London: Sage.

JOHNSON, R.B., and ONWUEGBUZIE, A.J., 2004. Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26.

Manchester Metropolitan University and the Indira Gandhi National Open University. 2008. Online Research Methods Resource. Available at: <http://www.celt.mmu.ac.uk/researchmethods/> [Accessed 15 December 2012].

The focus of the modules is on how to choose a topic and methodology rather than data collection techniques.

MERTENS, D., 1998. Research methods in education and psychology: integrating diversity with quantitative and qualitative approaches. London: Sage.

TASHAKKORI, A., and CRESWELL, J., 2007. Editorial: the new era of mixed methods. *Journal of Mixed Methods Research*, 1: 3-7.

TASHAKKORI, A., and TEDDLIE, C., eds., 2003. *Handbook of mixed methods in social and behavioral research*. London: Sage.

This book contains chapters by individual authors about many aspects of mixed methods. Most useful may be the chapters on Mixed Methods Design, Sampling, Data Collection and Writing and Reading Mixed Methods Studies (this is useful to illustrate visual displays).

SAUNDERS, M. Beginning an evaluation with RUFDATA: theorising a practical approach to evaluation planning In *Evaluation*, 6(1): 7-21. [online]. Available at: <http://www.lancs.ac.uk/fss/centres/cset/eval-blank/docs/rufdata.doc>. [Accessed 15 December 2012].

### Online surveys

Survey Monkey.com. Available at: <http://www.surveymonkey.com/> [Accessed 15 December 2012]. You can carry out a small survey for free using Survey Monkey but for larger surveys a subscription is required.

ACTON, C., & MILLER, R., 2009. *SPSS for Social Scientists*. 2<sup>nd</sup> ed. Basingstoke: Palgrave Macmillan.

PALLANT, J., 2010. *SPSS Survival Manual*. 4<sup>th</sup> ed. Maidenhead: McGraw Hill.

### Winning funding

Funding for pedagogic research can be found both internal and external to the higher education sector and application processes will vary between organisations. Many bodies offer subscriptions to RSS feeds or email alerts to highlight funding calls.

In the first week of each month CADQ publishes a current funding spreadsheet which provides a searchable summary of funding opportunities for pedagogic research or learning and teaching developments. Contact [Wendy O'Neill](#) in CADQ for details

The NTU [Research Sharepoint](#) site offers advice to staff on ethics and governance and funding application links. Colleagues considering applications should be aware that sign off procedures and grant advice may vary from college to college.

The CADQ Case Studies Resource gives background detail on successful bids involving NTU, including: the Paul Hamlyn Foundation/HEFCE funded Here Project and the JISC funded SHARE Project. For further information contact [Wendy O'Neill](#) in CADQ.

### Key texts

Two books available on the topic of winning funding are:

KENWAY, J., BODEN, R., and EPSTEIN, D. 2005. *Winning and managing research funding*. London: Sage.

PETERS, A.D., 2003. *Winning research funding*. Aldershot: Gower Publishing Ltd.

## Publishing pedagogic research

You can publish your work and ideas in many different outlets concerned with teaching and learning. The choice depends on many factors, primarily the originality, scope and rigour of your work and secondly how much time and effort you are prepared to put in to get the work into your journal of choice.

### Getting started in writing up pedagogic research for publication

Often when we think about writing for publication in an academic setting we jump immediately to the gold-standards – an article in an international peer reviewed journal. However this is not the only option and, if you are starting out in writing, it may be more useful to start with something a little more manageable which nevertheless is a publication and may help you in networking and learning more about a particular area.

- *A book (or resource) review*

Many journals, both online and paper-based, carry reviews of new books or other resources such as software. It is worth visiting the websites of journals in your discipline or Higher Education Academy disciplinary journals to view the list of publications that they have waiting for review. They are often happy for you to recommend a book/resource that you have located.

Reviews are substantially shorter than an article, and you can keep the book/resource. Writing a review also serves to structure your reading. You will need to give a balanced and informative account of the book, considering the audience it is written for.

Many journals will have a template or guidelines for writing a review so you should browse the website and contact the reviews editor before starting to write.

- *A case study of your practice*

Encouraging practitioners to write case studies of their practice, particularly innovative aspects of practice, is popular. The HEA Subject Centres collect, and sometimes pay for case studies. As with book reviews there is often a template or set of headings for you to use, which might include for example a discussion of obstacles and difficulties you encountered and how you gathered feedback on what you did.

Case studies are a good way to contribute ideas to the teaching of your discipline and to make contacts with other practitioners. You will not be expected to have extensive reference to literature but will be expected to give an honest and balanced account.

- *A new item or brief report for a magazine or newsletter:*

If you are involved in a project or working on something you know is innovative then you might consider writing a news item or brief report. This is going to be less formal than an article and much shorter but could raise the profile of your work and assist in making connections with others working in the same area. Before volunteering to do this it would be worth reading a number of examples to ensure that you get the tone and depth right. They usually call for a clear and accessible style and a topic which is relevant to a broad readership. They may publish a range of types of work, including short articles, book reviews and opinion pieces. Examples: ALT-N Online - the Association for Learning Technology; Educational Developments (SEDA).

- *A working paper*

These are not as common as in the past because they do not really count towards the REF and so might be considered by some a wasted opportunity to gain a full publication. Some journals however have a section for submitting a shorter 'work in progress' piece and this offers some benefits. It raises awareness of your work and can lead to contact with people working on similar projects. It also helps you to think through where you are going with your work and to 'get it out there'.

- *A presentation at a conference and a write up in conference proceedings*

Presenting your work at a conference has many advantages: it is a good way to disseminate your work; it will help with networking and making connections; and it will probably lead to more feedback from the audience than you will get with a written publication. You should choose your conference well, balancing a larger, more general gathering which might bring a bigger audience of less specialised colleagues against a smaller conference where you may reach fewer people but get more engagement. Some conferences to consider are:

- NTU Annual Teaching and Learning Conference
- Higher Education Academy Annual Conference
- Scholarship of Teaching and Learning (SoTL) Annual Conference
- Annual Staff and Educational Development Association (SEDA) Conference
- Association for Learning Technology
- Society for Research into Higher Education (SRHE)

Many conferences invite submissions for conference proceedings and these may or may not be refereed. Proceedings which come out in print form will be more prestigious than those which are put onto a CD/DVD supplied to members of the organisation or simply posted to the website.

Publication in conference proceedings will be less prestigious than a journal article. However it is still classed as a publication. It is worth remembering that if you write up a project for proceedings then you would need to make substantial changes if you wanted to submit to a journal in the future due to the requirement for originality.

### **Writing for a journal**

The more general HE journals will bring a larger readership to your work but you will need to be more careful about situating your work in a broader literature/framework. You will need to think about the language that you use in writing for a general audience. Because 'peer reviewing' is seen as the gold standard, most publications will have some form of peer review but this will vary in the standards expected with the 'peer-reviewed journals' ie the international academic journals being the most stringent.

Journal citation reports. NTU Libraries and Learning Resources give you access to a database which gives details of the impact factors of a variety of journals. Contact your School liaison librarian for details.

- *Electronic-only journals*: these have the advantage of a quick turn-around time, meaning that the time from acceptance to publication is short. They are likely to have some form of peer reviewing. Examples: Brookes eJournal of Learning and Teaching, International Journal of Teaching and Learning in Higher Education.

- *University-based print journals*: these journals are started up by a single institution or a group of institutions. It is worth looking at who is involved and how much success they have in attracting outside submission. They are also likely to have peer reviewing. Example: Practice and Evidence of the Scholarship of Teaching and Learning in Higher Education (Learning and Teaching Centre at the University of Glasgow),
- *Peer-reviewed journals*: these are the most prestigious and therefore obviously the most difficult to get into. These journals may be general or more specialised. The review process and time between acceptance and publication will be longer than other outlets (although some now have advance publication online). They are more likely to have a focus on empirically-based articles. Some of the most relevant journals, by publisher, are:
  - *Elsevier*: [The Internet and Higher Education](#)
  - *Palgrave Macmillan*: [Higher Education Policy](#)
  - *Sage*: [Active Learning in Higher Education](#)
  - *Springer*: [Higher Education](#), Research in Higher Education
  - *Taylor & Francis*: ALT-J Research in Learning Technology, [Assessment and Evaluation in Higher Education](#), [Higher Education in Europe](#), [Higher Education Research and Development](#) (HERD), [Innovations in Education and Teaching International](#), [International Journal for Academic Development](#), [Journal of Further and Higher Education](#), [Journal of Higher Education Policy and Management](#), [Quality in Higher Education](#), [Studies in Higher Education](#), [Teaching in Higher Education](#), Tertiary Education and Management
  - *Wiley Blackwell*: [Higher Education Quarterly](#)
  - *Other*: [Journal of Higher Education](#) (Ohio State University Press), [Review of Higher Education](#) (The John Hopkins University Press)
- *Discipline-specific journals*: Although the readership will not be as large as for the more general HE journals, you will be writing for a more specialised audience – your disciplinary colleagues. This will mean you can retain the detail of your discipline and situate your work within your subject. There are many journals, for example: [Educational Studies in Mathematics](#), [International Journal of Art and Design Education](#), [Journal of Geography in Higher Education](#).

*Higher Education Academy*: The loss of the Subject Centres has meant that there are now a smaller number of journals from the HEA but you can access these via the [HEA website](#). The journals they list are: Bioscience Education; MSOR Connections (Mathematics, Statistics and Operational Research); Discourse (Philosophy and Religious Studies); Enhancing Learning in the Social Sciences (ELISS); Engineering Education Journal; Health and Social Care Education; Innovation in Teaching and Learning in Information and Computer Sciences (ITALICS); Journal for Education in the Built Environment (JEBE) including Transactions; New Directions (Physical Sciences); Planet (Geography, Earth and Environmental Sciences) 

### **Key texts**

If you are new to writing for publication then you might like to look at some general advice and guidance on writing for publication:

EPSTEIN, D., KENWAY, J., and BODEN, R., 2007. *Writing for Publication*. Sage Publications.

MURRAY, R., 2005. *Writing for Academic Journals*. Open University Press.

MURRAY, R., and MOORE, S., 2006. *The Handbook of Academic Writing: A fresh approach*. Open University Press.

Research Observatory. Accessed online [23 June 2015] at:

<http://ro.uwe.ac.uk/RenderPages/RenderConstellation.aspx?Context=6&Area=1&Room=4&Constellation=49>