



The overall aim of **educational research** is to provide teachers, clinicians, managers and learners with systematically obtained information that helps to improve the quality of the learning process. The difference between doing educational research and other healthcare research is that often the immediate effects of the intervention are seen and assessed on the educators or their students, rather than on the processes and outcomes of patients. Nevertheless, it is always worth remembering that we are only educating in healthcare so that we can provide good or better quality care to patients. Therefore, wherever possible, we should think about how to measure the effects of an education intervention on the patient.

This module provides an introduction to the main research methods used in healthcare education. The module covers some aspects of research supervision and provides practical examples of how you can use the principles of educational research in your own teaching.

By the end of the module you should have an enhanced understanding of the principles of educational research and how this operates in a range of clinical and educational contexts. You will also be better equipped to identify opportunities for educational research in your own practice. You will have the opportunity to explore how you think the ideas relate to your own practice as a clinical teacher and supervisor, and be provided with information about how to further develop your and others' research skills.

### **Before you start**

Before you start the module we recommend that you spend a few minutes thinking about the following points and noting down some of your thoughts. If you are registered on the site, you can do this in the 'reflections area'. Click on the 'my area' link at the top of the page to access your personal pages. Please note that you must be logged in to do this. Please also note that you will need to contribute to the 'reflections area' during the course of the module in order to complete and print out your certificate.

### Thinking points

- In what ways are you currently involved in carrying out or supervising research?
- Can you think of some of the differences between clinical research and educational research?
- What do you think are some of the issues or barriers to carrying out educational research in the clinical setting?

## Getting started

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If you hear the words 'Wouldn't it be interesting?' in terms of starting to think about an idea for research, then raise a small warning flag. Yes, a research study should be interesting to the person doing it, but that is never enough on its own. If you hear those words, ask 'Why?' The answers you get should include any of the following.

- It is theoretically interesting: that is, it allows you to test out some aspect of theory; for example, that different people learn in different ways.
- It is empirically interesting: that is, it allows you to add to questions and answers that the literature so far has provided; for example, that providing different types of teaching material is more useful than providing just one method.
- The situation calls for review or evaluation: for example, you are playing your part in implementing a new government initiative, a new curriculum or developing a new educational package and wish to judge whether it is successful or not in your context.
- Funding is available in the area you want to study: research is much more enjoyable if you have someone to help you do it – particularly when your working life is already as full as it is. So obtaining a grant for doing something you're already interested in might allow you to employ a research assistant.

Of course, sometimes a piece of research will satisfy all four of these reasons, and there are likely to be other criteria too for getting started. For example, Parsell and Bligh (1999) suggest a number of reasons that stimulate people to write (which in academic and clinical contexts often follow from research).

<b>Intrinsic reasons</b>	<b>Extrinsic reasons</b>
To share knowledge	Academic pressures
For career advancement	To demonstrate a commitment to patient care
To increase status	To improve practice
For collegial approval	To reflect advances in medical technology

For pleasure	To monitor or evaluate changes in healthcare delivery
To meet a challenge	Multi-professional team-based practice
	Obligations to patients

**Thinking point**

- Can you list the main reasons why you might want to do research?

## What is educational research?

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From the previous section, you can see that there are many types of activity that fall under the umbrella of educational 'research'. These include projects that investigate educational changes or developments that are being planned to define the best way of proceeding. Development projects typically include a small pilot study of an educational intervention, carried out with a view to informing how best to implement larger-scale reforms.

Other projects focus on review or evaluation of existing educational activities or curriculum change. These may be small-scale, local projects (such as introducing different teaching or learning methods or new clinical activities) or evaluation of large-scale national initiatives (such as the training programmes or national examinations).

Systemic literature reviews are another educational research activity. These may be carried out as part of ongoing research to inform the research process or as a discrete activity to provide information to a specific audience about the current findings from published literature.

'Education research is often carried out in naturalistic settings that may carry threats to the validity of the study such as loss of subjects, selection bias, historical events or maturation' (Bordage and Dawson, 2003). Educational research therefore differs from other types of research with which you may be more familiar, such as clinical or laboratory research. Educational research draws on different research and theoretical paradigms from scientific research, which has traditionally been grounded in a positivist stance. Educational research draws largely from the social sciences in its approach, research methods and interpretation of results, and may involve a shift in perspective from the seeking of irrefutable 'facts' and universal 'truths', to offering new insights, acknowledging the subjectivity of researchers, the impact of the research process itself

on subjects and outcomes, and the agency of the subjects of the research. Nonetheless, this does not make educational research and its methods less rigorous or valid than those of the physical sciences, but they may require researchers to take a different approach, draw from a different body of knowledge and take particular care over study design and consideration of confounding variables.

The reading list contains a number of sources that provide a more in-depth discussion into frameworks for educational research.

## Ethical approval

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Researchers need to consider the ethical implications of the research they are planning to carry out prior to finalising a research plan. Making sure that your research is ethical focuses primarily on two areas.

The first concerns the rights of patients, staff and learners to be treated as openly and fairly as possible within the research, and to consent fully to taking part.

The second focuses on making sure that appropriate scientific principles are applied so that those who rely on research findings to make their clinical, education or other decisions are receiving results that are accurate and the result of sound research design.

Organisations are increasingly aware that staff, students and patients can no longer be seen as fodder for research. This ethical stance is located within a legal framework that includes the Human Rights Act and Data Protection Act. High-profile events such as the retention of organs at Alder Hey Hospital in Liverpool highlighted the importance of taking an ethical approach to all aspects of patient participation in research. Any research that involves NHS patients, potential patients or staff (this may also include students/trainees) needs to have been granted local ethical committee (LEC) approval.

At national level, the NHS National Patient Safety Agency (NPSA) includes the National Research Ethics Service (NRES) which is developing a rigorous, robust and responsive process to streamline ethical approval for NHS research projects. The Service 'works with colleagues in the UK to maintain a UK-wide system of ethical review that protects the safety, dignity and well being of research participants whilst facilitating and promoting ethical research within the NHS'. See the [NRES website](#) for up-to-date information on the national process, application requirements and training for researchers.

The process of applying for ethical approval is useful in pushing you to clarify the aims, process and outputs of the research. Ethical considerations may lead to modification of

your planned research: you may decide that the time frame, scale or scope of the research is unrealistic.

Depending on who has commissioned the research (for example, external funding body, government department, charity or an internal department), there will be issues that have to be addressed around who owns the data that are produced through the research. We have mentioned ensuring compliance with legislative requirements around data protection above; this involves obtaining consent from those involved in the study, ensuring anonymity of participants, and ensuring that data are stored appropriately and securely. The data and outputs from externally commissioned research will normally belong to the funding body, not to the researcher or the organisation carrying out the research. It is important that measures are put in place to ensure that all involved are aware of how data and other research outputs are to be managed.

A final issue that you will need to consider as you plan and carry out educational research is that of your own position as researcher. This is particularly relevant if you are researching your own organisation or have a position of influence over research 'subjects'. In educational research, which often involves qualitative methodologies, this issue is typically brought to the foreground as part of the methods selected, and in the analysis and discussion.

The reading list includes texts and articles on carrying out research in education, clinical and training settings which will provide more information on these topics.

## The research question

Translating your initial ideas into a feasible educational research project is an iterative process. Consideration of ethical issues is essential and we will look at these in the next section. Here, we look briefly at some of the other activities that need to be carried out before the actual research begins.

Bordage and Dawson (2003) emphasise that 'the single most important component of a study is the research question. It is the keystone of the entire exercise' (p. 378). Defining the aims of your study clearly will determine all other aspects of the design. This involves selecting an appropriate topic and defining a timely and appropriate research question. In the same way that clearly defining learning outcomes or objectives helps us to plan learning and teaching activities, defining your research question or project aims provides a clear focus for the whole research process.

Bordage and Dawson pose nine questions that should be asked during this stage.

1. What topic (idea) of study are you interested in?
2. What has already been done in this area (the literature)?
3. What major outcome(s) (dependent variable) are you interested in?
4. What intervention (independent variable) are you interested in?
5. Are you looking for differences or a relationship (association)?
6. To what group (population) do you wish to apply your results?
7. What is your specific research question?
8. What answer to your question do you expect to find (the research hypothesis)?
9. Why is this question important today (relevance)?

Getting the research question right for what we want to do is the most important step in research. There is no magic way to achieve this, but the following is one way to tackle it.

- Use different ways of generating ideas, such as brainstorming, mind mapping, discussions, reading around the topic and asking different levels of question that might be addressed. Consider the answers these questions may elicit, and after each one ask: 'Does it matter?'
- When you have a question you are happy with and that will produce answers you want to know, ask what it would take in terms of resources (time, money, skills, etc.) to answer the question and whether it is feasible.
- If it's not, move down to the next level and develop an appropriate question there.
- When you feel there is a research question that will produce answers that matter and which it will be possible to achieve within resources, the researchers need to obtain feedback on the question from other people involved.

You need to make sure that your research contributes to educational knowledge, even if this is in a small way or for local/organisational consumption only, rather than replicating work that has already been done. Huth (1982), cited in Parsell and Bligh (1999), suggests this means that you need to create new ideas with a new message, a message new to a particular audience or a message that expands on a previous idea. Unless you are very familiar with the literature relevant to your research, you will need to carry out a background search before writing the research proposal, especially if you are applying for funding. This will indicate to the reader that you are familiar with the research area; it will also help you to clarify exactly where your research fits into the broader scheme of things and give you ideas about the focus of the research.

## Linking the research question to study design

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Making the research goals or aims operational is the next step. One of the essential parts of planning the project is to get its size right – you need to know that the research is feasible and that it can be done within the resources you have available. This means getting the level of the question right and having a really clear focus. When we start thinking of what we'd like to do, nine times out of 10 we'll be thinking too big, and the other time we'll be thinking too small. Getting the right level for research usually means talking the idea through with others, writing out your ideas as a brief proposal with clear aims, and getting more formal feedback at this stage. The more time that is put in now, the less will be spent feeling despondent in the future.

The size of the project – that is, the scope defined by the research question asked – will depend partly on:

- time available
- the availability of internal or external funding and support (e.g. grant money)
- whether this should be a pilot project or build on other things
- your research 'sample' and access to 'subjects'
- whether the topic calls for cross-sectional or longitudinal designs and how this affects your availability and needs
- whether this is to meet a higher degree or not.

### Thinking point

You want to assess a workshop on stress management for young doctors. Think about what might be affected by this course. What are some of the smaller and larger questions you might ask and what are the levels of assessment you might consider to test them, from the smallest to the grandest? Please see our suggested answers [here](#).

## Research design and methods

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The main features of the study design and methods you select follow the question that has been posed. For example, you may be using a **survey** by questionnaire or interview; a **case study** of one or more person or organisation; a **trial**, which may be randomly controlled or use matched or waiting-list controls. It may be **ethnographic**, requiring time in the field to look at relationships, culture or communication, or **action research**, where practical problems are considered and where the feedback, changes and

subsequent evaluation of change are all part of the research – rather like audit in its cyclical design.

Action research is a common mode of educational research. It appeals to those who like the idea of change and the feeling that the research they do actually contributes to it. It joins together both research and implementation, and is a much messier, more participative research method than most; so people who start it should not be those who demand precision or decimal points in their answers, and they should enjoy being involved with the teams and individuals who actually put the changes into practice (Somekh, 1995).

Research may also be cross-sectional or longitudinal; depending on what is the right way to answer the question and what resources are available. For example, **cross-sectional designs** can provide answers to the immediate success of a programme if success is seen in terms of, for instance, course satisfaction. They can also be used to see, for example, if different people are more or less satisfied depending on their learning preference, or to consider any other differences between them or between course presenters, or an interaction between both. But if you want to assess what really changed as a result of your course, then it has to be longitudinal.

**Longitudinal design** is expensive, not only because you have to have the researchers available over the length of the study, but also because you might have to spend funds on tracking your subjects over time. However, the benefits of longitudinal cohort studies are that you can answer more complicated questions. For example, if you were studying job satisfaction in doctors using a cross-sectional design, you would probably find that around a quarter were pretty dissatisfied. If you had a large enough sample, you could break it down into specialties and see that one particular group (e.g. surgeons) were very satisfied, while another (e.g. psychiatrists) were very dissatisfied. You would be likely to conclude that the work role of psychiatrists has more factors likely to produce dissatisfaction than the role of surgeons does. However, a longitudinal study might have assessed these doctors as students or house officers and looked at personality or at satisfaction then, and would probably have found that many of those who are disgruntled now were disgruntled then. This then allows us to see how much of the dissatisfaction is due to the person and how much is due to the job, which in turn means we may not need to continue to plough resources into the job alone, but also into individual intervention or selection issues.

Your research question and available resources will determine over what period you should assess and how many assessments you will need to make. Although it will vary according to the intervention made, where clinical interventions are the subject of research, patients are usually assessed during a baseline period, immediately after the

intervention, a few weeks or months later, and after a year or two. Ideally, educational interventions would not differ much from this, but a minimum would be before, immediately after and 6–12 months later.

### Thinking point

- Taking the exercise above, think about the types of design that might be necessary for each level of question. The last one – a randomly controlled trial design – has been described, but what designs and methods would best fit the others?
- Please see our suggested answers [here](#).

## Quantitative and qualitative measurement

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**Quantitative research** relies primarily on numbers as the main unit of analysis. It is more commonly used as a primary method in scientific and clinical research, such as drug trials or laboratory experiments where tests may need to be repeated many times, for example to ensure that a new drug is safe. Although quantitative methods, such as surveys, are used in educational research, the vast majority of research is relatively small scale, intensive, focused on change and involves human perceptions. Educational research relies much more heavily on qualitative methods. One of the most common instruments to gather numerical data in education (particularly in evaluation of programmes) is the questionnaire survey, using a series of closed questions to which responses are given against a Likert or other type of scale. Open questions can also be included to gather richer data. Large amounts of data can be gathered from a wide number of people and the results can be analysed by computer (either by an optical mark reader or through an online survey instrument such as 'Survey Monkey'), thus making it fairly straightforward to research a large sample of respondents. Survey questionnaires can be given out and collected face to face, sent by post or posted online. If achieving a high response rate is important, then note that the less personal involvement there is with potential respondents, the lower the response rate. So, typically, online surveys may have a response rate of under 20%, whereas if the questionnaires are given out and collected face to face, you may achieve a very high response rate.

**Qualitative research** relies primarily on words as its unit of analysis and its means of understanding. However, it can also use voice tone, loudness, cries, sighs, laughs, and many other ways of human communication. The words may be spoken in individual interviews (face to face or on the telephone) or groups, or they may be written, so you may have to analyse the spoken words of an interview, focus group or conversations (for

example between a patient and health worker), or the written words of an account or description or diary record.

On the whole, qualitative research tends to be small scale, simply because it is hugely labour intensive. For example, interviews or focus groups will usually need to be transcribed before they can be analysed. In addition, the researcher is often more involved with the person producing the words, and so it is sometimes helpful for others to conduct the analysis; again this can be costly. Having said that, nothing else can provide the same level of richness as qualitative data, and at the very least, adding space for respondents to provide some words to describe what might be otherwise gathered by numbers is immensely useful to the researcher, and may even, in some situations, be a help to the subject.

Qualitative methods range from the classification of themes and interconnections, content analysis, grounded theory and discourse analysis, and reliability and validity are just as important as they are in quantitative analyses. There are computer programs to assist in analysis, and although these might not necessarily save time, they often offer more systematic ways of coding data and identifying connections and themes.

**Triangulation** is the term used for bringing a number of research methods to bear upon a question. For example, to study the effect of threatened closure of a hospital on its staff you might want to interview a selected few at different levels and in different professions; a questionnaire survey of almost everyone; personnel data of sickness, absence, turnover, etc.; a network analysis of rumour; an ethnographic study of a long-stay ward looking at staff and patients interactions; and so on. A triangulation of methods such as these would provide an exceptional in-depth look at such an event, but it is also useful simply to combine some form of qualitative and quantitative data, as suggested above.

## Issues of measurement

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How are you going to measure whatever it is you need to measure? To some extent we have dealt with this throughout the module: when you know what it is you want to assess you need to find a valid and reliable tool to do the job. If you are measuring blood pressure or wound infections or various aspects of the immune system, this can be easy, but if you are considering opinions, feelings, interactions or communication, you may need to hunt for or even develop instruments. Typical instruments used in education research are interview or focus group schedules, psychometric tests, questionnaires, observation schedules and standardised rating sheets. Never design your own instrument when a perfectly good one already exists – the development of measures is a time-

consuming and costly job if it is to be done properly with all the issues of reliability, validity and piloting taken care of. Doing a search on the topic usually reveals a number of good instruments that can be used with or without modification.

Instruments are **reliable** (replicable) to the extent to which using them on the same individual at different times or in different circumstances still produces a relatively similar result. This test–retest correlation should be at least 0.5 for groups and hopefully above 0.8 for individuals. Instruments are **valid** when they measure what they set out to measure. With **face validity** the measure should simply make sense to individuals as a reasonable way to assess what it is you want to measure. **Criterion validity** assesses the extent to which the measure correlates with other existing measures – for example, that a new measure of depression or quality of life has a high correlation with another measure for the same purpose. Construct **validity** measures whether an instrument relates in a theoretically predictable way to another established variable, for example that quality of teaching relates to years of experience, or that quality of life relates to adequacy of housing.

## Planning and resources

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Practical issues such as the timetable or project schedule, defining who will be carrying out various tasks, what equipment or materials might be required and the project budget all need to be agreed before the research begins. One of the tasks of the researcher, working with either a research team or supervisor, is to develop milestones once the research has been designed. This type of project planning is usually necessary if you are seeking a grant, and involves breaking down the whole research project into very small steps with a timetable for each one. If you are applying for grant funding then this will need to be included in your proposal, often in great detail.

The small steps – appointing staff, searching the literature, agreeing measures, etc. – often involve much more work than people think, and so it is rewarding to see them set out and achieved rather than simply as background to the main task of gathering and analysing data. Having clear milestones helps the researcher and supervisor to assess progress and identify slippage and problems early. Software packages such as Microsoft Excel or Project Manager are useful tools to help in planning projects that are very complex, as well as for recording data.

## Support and supervision

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When the question has been reasonably clarified and the available literature on the subject has been read, it is time to put support and supervision in place. Supervision needs to be carried out by someone with an interest in and understanding of the topic area. Alternatively, or in addition, for a larger project it is helpful to bring together a group of people who will be equally interested in the question. Research within a team is (usually) much more pleasurable than doing it alone: not only can you pool resources, but also a multi-disciplinary group in particular will bring different perspectives to the question to make its products more useful and acceptable. This is often one of the great strengths of educational and healthcare research.

Most of this module relates primarily to you as a clinical teacher thinking about your own educational research. Increasingly, as diverse routes for clinical academic posts are more widely introduced, some of you will also be responsible for supervising or advising on the research of others: postgraduate students, academic fellows or medical students taking an intercalated BSc. Many of the principles and activities we have discussed in this module will be appropriate to you as a research supervisor of educational research projects. Lamm (2002) found that research students want their supervisors to be:

- **facilitative**, namely:
  - approachable
  - practically available
  - encouraging, interested and enthusiastic
  - helpful with general and specific issues
  - validating
  - mutually respectful
- **challenging**, specifically:
  - forcing them to rethink ideas and arguments
  - pointing out weaknesses in research design, methods
  - searching out assumptions.

The implications are that supervisors need good interpersonal and communication skills and departmental and institutional support.

See the Teachers' toolkit [Criteria for good practice in research supervision](#) and the [Supervision](#) module for a more generic consideration of educational and clinical supervision.

## Analysing results

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Many people use a statistical package on their computers to analyse their results. The most commonly used package is called SPSS or Statistical Package for the Social Sciences. This provides all the statistical analysis you are likely to need and takes you through how to enter your data, name your variables, etc., with a good help website. There are numerous books on the market and courses with details on how to use SPSS and the various statistical tests.

Data gathered through qualitative methods are more unwieldy to analyse than numerical results, and methods need to be devised to analyse (e.g. through textual analysis) and code the data. Computer packages such as NVivo are available to assist with the analysis and coding of qualitative data such as interview transcripts, video recordings and focus group recordings.

## Research outputs

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The final stage of your research is disseminating the findings to an appropriate audience. Dissemination can take many forms: a paper in a journal, conference paper or presentation, a formal report or a dissertation/thesis for postgraduate study.

Issues of intellectual property need to be thought through, ideally before the research commences, but definitely at the stage of writing the final report. Some funded research might be carried out for agencies or organisations, e.g. the Department of Health or Education. Often the results of the research and the report become the property of the commissioning organisation and the report may have to be written in a particular format or for a particular audience, for example to support a government initiative.

Before you start the research it is helpful to clarify with all those who will be involved with the work just who is responsible for what. Once the research is designed and underway, then you should have an idea of what papers or conference presentations might emerge and **who will be lead author** of each. Although this is bound to change a little as the results arrive, agreeing authorship and contributions early on makes for a much more harmonious research team. It is very easy to feel slighted about one's contribution to research and these academic grudges can last for years, so it is well worth making regular checks on everyone's understanding in supervision or team meetings.

One of the most common written means of disseminating research findings is through publication of a paper in a peer-reviewed journal or a formal project report. Where you send a paper for **publication** depends on many things:

- the type of work they usually publish
- the rejection rate
- the speed with which you want it in print
- the speed of their refereeing system
- what audience you want to appeal to and so on.

Before the research is completed it is a good idea to write the introduction and the method – you can always update the literature in the introduction before you submit the research for publication. That way, when you have the results you will be more than halfway to a publication – and that’s a great incentive to get it finished.

Parsell and Bligh (1999) summarise a typical structure of a journal article with the acronym IMRAD.

- **Introduction** – why did we do it?
- **Methods** – what did we do?
- **Results** – what did we find?
- **Analysis** – what does this mean?
- **Discussion** – so what? And what next?

See the Teachers’ toolkit item [A framework for writing up your research](#) where we have expanded the IMRAD framework to cover different written outputs.

Create your **reference list** as you go. All of us think we will remember where a particular reference came from, but none of us manages it – irrespective of age – and it’s very frustrating to be at the final polish before publication and find you are unable to locate the missing ones. Computer programs such as Reference Manager and Endnote make storing and handling references in different styles considerably easier.

## To sum up

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This module provides an introduction to some of the key issues and activities involved in healthcare education research. Whether your research is small scale, involving a small group of learners or evaluating the outcomes of a local educational intervention, or a more ambitious research study that aims for external grant funding, we hope that you enjoy engaging in research and taking forward our understanding of 'what works' in clinical education settings.

### **Congratulations**

You have now reached the end of the module. Provided you have entered something into your log you can now print your certificate. To generate your certificate please go to 'my area' and click on 'complete' in the course status column. Please note, you will not be able to print your certificate unless you have entered something in your 'reflections area'.

Please now take a moment to evaluate the course and enter your comments below.

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## Further information

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This module was originally written by Professor Jenny Firth-Cousins and revised and updated by Judy McKimm, Visiting Professor of Healthcare Education and Leadership, Bedfordshire & Hertfordshire Postgraduate Medical School.

## Teachers' toolkit

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[Criteria for good practice in research supervision](#)

[A framework for writing up your research](#)

## References

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Bordage G and Dawson B (2003) Experimental study design and grant writing in eight steps and 28 questions. *Medical Education*. **37**: 376–85.

Brew A and Peseta T (2004) Changing postgraduate supervision practice: a programme to encourage learning through reflection and feedback. *Innovations in Education and Teaching International*. **41**: 5–22.

Denscombe M (1998) *The Good Research Guide*. Open University Press, Buckingham.

Jenkinson C (1994) *Measuring Health and Medical Outcomes*. UCL Press, London.

Jones JW *et al.* (1988) Stress and medical malpractice: organisational risk assessment and intervention. *Journal of Applied Psychology*. **73**: 727–35.

Lamm R (2002) *The Interpersonal Relationship in Doctoral Supervision*. Unpublished PhD thesis, La Trobe University.

Marcovitch H (2003) Discussion. In: Hall G (ed) *How to Write a Paper* (3e). BMJ Publishing Group, London.

Parsell G and Bligh J (1999) AMEE Guide No 17: Writing for journal publication. *Medical Teacher*. **21**: 457–68.

Somekh B (1995) The contribution of action research to development in social endeavours: a position module on action research methodology. *British Educational Research Journal*. **21**: 339–55.

St Leger AS *et al.* (1992) *Evaluating Health Services Effectiveness*. Open University Press, Buckingham.

Usherwood T (1996) *Introduction to Project Management in Health Research: a guide for new researchers*. Open University Press, Buckingham.

## Further reading and resources

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Atkinson P and Pugsley L (2005) Making sense of ethnography and medical education. *Medical Education*. **39**: 228–35.

Barbour R (2005) Making sense of focus groups. *Medical Education*. **39**: 742–51.

Bleakley A (2005) Stories as data, data as stories: making sense of narrative enquiry in clinical education. *Medical Education*. **39**: 534–40.

Brown A and Dowling P (1998) *Doing Research/Reading Research. A model of interrogation for education*. Falmer Press, London.

Chen F, Burstin H and Huntington J (2005) Commentaries – the importance of clinical outcomes in medical education research. *Medical Education*. **39**: 350–1.

Cohen L and Mannion L (2000) *Research Methods in Education* (5e). Routledge, London.

Cote L and Turgeon J (2005) Appraising qualitative research articles in medicine and medical education. *Medical Teacher*. **27**: 71–5.

Crotty M (1998) *The Foundations of Social Research. Meaning and perspective in the research process*. Sage, London.

Illing J (2007) *Thinking About Research: frameworks, ethics and scholarship*. Association for the Study of Medical Education, Edinburgh.

Land R (2004) *Educational Development: Discourse, Identity and Practice*. Open University Press/SRHE, Maidenhead.

Maynard D and Heritage J (2005) Conversation analysis, doctor-patient interaction and medical communication. *Medical Education*. **39**: 428–36.

Potter J and Hepburn A (2005) Discursive psychology as a qualitative approach for analysing interaction in medical settings. *Medical Education*. **39**: 338–45.

Silverman D (2001) *Interpreting Qualitative Data: methods for analysing talk, text and interaction* (2e). Sage, London.

Strauss A and Corbin J (1990) *Basics of Qualitative Research: grounded theory procedures and techniques*. Sage, London.

Wolcott H (2001) *Writing Up Qualitative Research* (2e). Sage, London.

### **Useful websites**

- Statistical Package for the Social Sciences
  - NHS National Patient Safety Agency and National Research Ethics Service
  - This is the Department of Health's website with its latest calls for research funding, tenders and other funding opportunities
  - This is the Department of Health's Service Delivery and Evaluation (SDO) website funding large projects in and around service delivery
  - Bupa Foundation – This organisation funds health care research in set areas and provides annual awards for research and other service-related projects
  - The Wellcome Trust website provides information about funding opportunities, research studentships and capital grants
  - The Health Foundation funds research in a number of defined area which are reviewed periodically, funds academic appointments and also research fellowships
- Other charities also have large funding streams for specific clinically based projects.
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## Course glossary

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### **Aim**

An aim in educational terms, is a brief statement of intent, indicating the scope and range of intended learning outcomes that the educational episode has been structured to address.

### **Class**

Class refers to hierarchical differences between individuals or groups in societies or cultures . Factors that determine class may vary widely from one society to another. However, economic disadvantage and barriers to access services are major issues within class discrimination.

### **Curriculum**

A detailed schedule of the teaching and learning opportunities that will be provided (GMC, 2004)

### **Curriculum**

The GMC, 2004 described the curriculum as a detailed schedule of the teaching and learning opportunities that will be provided. A curriculum is a statement of the aims and intended learning outcomes of an educational programme. It states the rationale, content, organization, processes and methods of teaching, learning, assessment, supervision, and feedback.

### **Learning Outcomes**

Learning outcomes are similar to learning objectives in that they specify the intended outcomes of the programme of study. These should be stated in clear and specific terms and should be developed along with a specification of the learning experiences that will allow the outcomes to be achieved.

### **Learning outcomes**

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### **Validity**

Validity in assessment terms refers to the degree to which a measurement instrument truly measures what it is supposed to measure. It is concerned with whether the right things are being assessed, in the right way, and with a positive influence of learning.

## Learning activities

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Select one or more of the activities below to develop your skills in assessing educational and learning needs and setting educational objectives.

If you are registered on the site, you can write up your reflections in the 'reflections area'. Click on the 'my area' link at the top of the page to access your personal pages.

Please note you must be logged in to do this.

### 1 Research study design

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You have heard that there is going to be considerable grant money for improving patient safety. You have read in the BMJ that prescribing errors are running high, and that house officers are the main cause of this. Think through a series of research questions around an intervention study to address this problem and gain research funding.

Think of the issues that would need to be addressed and the designs that would best suit each question.

Brainstorm a little by triangulating as many methods as you can to explore one of the questions as fully as possible.

### 2 Planning a small-scale research study

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Using some of the learning from this module and considering your own teaching context, plan the key features of a small-scale research study. Starting points might be:

- a topic that interests you
- an educational article or book chapter
- a planned educational change
- I wonder why that happened?
- I wonder what would happen if...?

Try to write down the research question (don't worry if you can't get it right at first), the project aims (sometimes easier), the design approach and main research methods, and a brief time plan.

If you were actually going to carry this research out, what else would you need to do?

### 3 Search strategies

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Taking an educational research topic (either the topic that you considered in Activity 2 or another topic that interests you) plan a search strategy to find out what else has been published in this area.

If you are new to literature searching and have access to a library, library staff will be able to help you, or there are many resources available online (e.g. [www.learnwebskills.com/search/](http://www.learnwebskills.com/search/)) that have tutorials.

Think about your search terms, the journals/books you might need to search in and how you will refine your search (consider breadth and depth).

Have you identified any issues or barriers such as access to journals/publications or lack of knowledge about certain aspects of education?

Make an action plan as to how might you address these issues, identifying who can help you and a time frame.