Tool-kit 1: planning your research project

In the first of a series of articles equipping you with the tools to conduct your own research projects, **Mark Rickinson** asks what research is, what it involves and how you can plan research so that it is effective. The Tool-kit series has been written for educational practitioners who are (or would like to be) involved in planning and undertaking research. It should also be helpful to those who are involved in supporting practitioners to set up and carry out research.

What is this article about?

This Tool-kit article is about the process of planning research. It aims to provide:

- an overview of the research process
- guidance on planning a research project effectively
- case-study examples and ideas for effective planning
- links to other sources of information.

An overview of the research process

What is research?

A commonly cited definition of research is Lawrence Stenhouse's (1975) view of research as 'systematic inquiry made public'. This emphasises the systematic and enquiring nature of the activity, and the importance of sharing findings publicly. In schools and colleges, research can take many forms, ranging from individual projects to whole-school or network-wide initiatives (see Box 1).

What does research involve?

While the examples in Box 1 vary in many ways, it is possible to think of all of them going through a number of similar phases.

Box 1 Examples of research

- Primary school reception staff undertaking classroom research on 'learning to learn' with support from senior staff and an external researcher.

- Two members of staff in an Early Years' Centre evaluating the use of video conferencing with young children, as part of the local Education Action Zone.

- A secondary school deputy headteacher doing a small research project to identify the curriculum needs of students at key stage 3 before investing in new materials.

- Several further education college tutors looking into the learning support needs of part-time learners as part of a regional Learning and Skills Research Network project.

- An individual teacher undertaking a project on staff development for a university research degree.

As shown in Figure 1, the research process can be seen as involving a number of interconnected phases. This first article in the Tool-kit is concerned with how the initial planning phase can be carried out successfully.

The planning phase

There are many things that need to be considered at the planning phase. One way of thinking about this is in terms of:

- getting the focus right
- getting the set-up right
- thinking about communication and impact.

Getting the focus right

This is about clarifying the research focus and questions (what?) and the research purposes (why?).

Research focus and questions

The first issue is identifying a topic to investigate, and the second is deciding on the questions to explore. Coming up with an interesting issue is often easier than working this into a clear, researchable question.
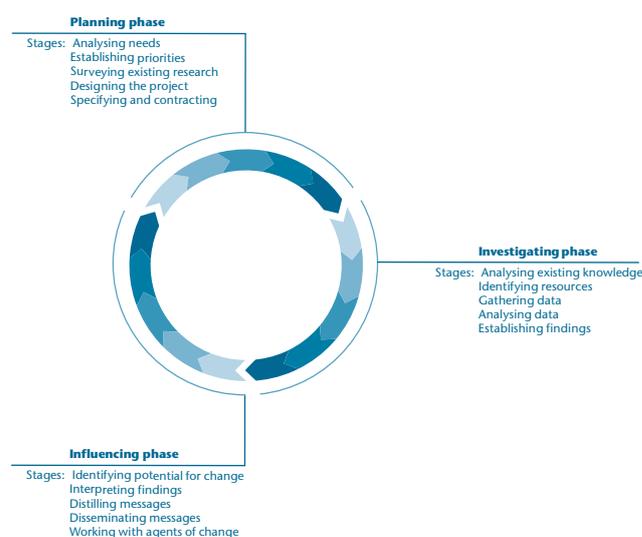
Ideas for research tend to emerge from people's interests and experiences. Topics can be stimulated by many different influences, such as a new development or initiative, a recurring difficulty, a conversation at a conference, a long-standing personal interest and/or another piece of research. It is important to remember that research requires time, motivation and commitment and so those carrying out the work need to be interested in the issue under investigation.

Moving from a research topic to a research question (or series of questions) is an important next step. This requires clear thinking on a number of levels. This is because good research questions need to be:

- clear – in terms of being as precise as possible in their wording. For example, the question 'What difficulties do year 3 pupils who do not have computers at home experience during literacy lessons involving the use of a computer?', clearly

Figure 1 The research process
Source: Morris and Norman (2004, p. 3)

Planning phase
Stages: Analysing needs
Establishing priorities
Surveying existing research
Designing the project
Specifying and contracting

Investigating phase
Stages: Analysing existing knowledge
Identifying resources
Gathering data
Analysing data
Establishing findings

Influencing phase
Stages: Identifying potential for change
Interpreting findings
Distilling messages
Disseminating messages
Working with agents of change

specifies the focus (difficulties experienced), the age/type of pupils (year 3 pupils who do not have a computer at home) and the context (literacy lessons involving the use of a computer).

- practical – in terms of being questions that are possible to investigate and to answer. For example, an investigation into the effectiveness of a new type of curriculum provision would have more chance of answering a question such as 'What aspects of the provision do students like and dislike and why?', rather than one such as 'What impact does the provision have on students' long-term career progression?'.

- useful – in terms of focusing on aspects of an issue that are seen as important and potentially relevant/useful by other practitioners.

The formulation of good research questions can also be helped by thinking about the type of questions that need to be asked (see Box 2). Explanatory and exploratory questions tend to be more interesting but also more complex to research, compared with descriptive questions. However, descriptive questions should not be overlooked, as they are often an extremely important part of the picture and can help to inform the 'how and why' questions.

Research purposes

Being clear about the rationale for doing a piece of research is critical. Having well-articulated purposes can help with securing funding or other kinds of external support, encouraging people to take part in the study, keeping the researcher(s) motivated and focused, and identifying who the most important audiences are for the study's findings.

There can be a number of different motivations for carrying out research (see Box 3). An interesting way of thinking about the value of research is in terms of trying to reduce ignorance of some kind (Wagner, 1993). In thinking about research purposes, then, it might be helpful to ask: What or whose ignorance will this research help to reduce?

Getting the set-up right

Once the questions and purposes are clear, attention can turn to the practicalities of how the research is going to be done, by and with whom and over what time-scale.

Research methods

A crucial principle in planning research is that the research methods are driven by the

Box 2 Types of research question

Descriptive questions (What? Which? Where?)

e.g. Which ICT-based resources are most frequently used in this school?

Exploratory questions (How?)

e.g. How could we help students to feel safer in this school?

Explanatory questions (Why?)

e.g. Why have our attainment levels decreased over the last three years?

Box 3 Different purposes for research

- To evaluate impacts, i.e. to know what has/has not been achieved.

- To improve future practice, i.e. to identify areas for future improvement.

- To develop professionally, i.e. to develop new skills and insights.

- To ensure accountability, i.e. to demonstrate achievements to external bodies.

- To enable marketing, i.e. to publicise achievements internally or externally.

research topic/questions (not the other way round). In other words, a research question like 'How do students feel about lessons in this department?' is likely to need some kind of interviewing of students, whereas 'Which ICT-based resources are most frequently used in this school?' might be answered with a questionnaire to staff. It is about selecting 'horses for courses', where the horses are the methods and the courses are the questions. Another way of describing this is in terms of selecting methods that are 'fit for purpose'. This can be helped by using a 'questions–methods' matrix, where one or more methods are selected for each of the research questions (see Figure 2).

No one research method is perfect and it is crucial to be aware of the strengths and weaknesses of different methods (see Box 4). It is also worth bearing in mind that the potential of different data-collection methods can be enhanced by using them in combination. Examples include:

- using interviews to generate ideas for survey questions

- following up on a survey with interviews to explore individuals' responses in more detail

- using observations of lessons as the starting point for student group discussions

- using a brief questionnaire at the start of a group discussion to get some quantifiable responses.

Research team and participants

There are two quite separate issues to think about here.

- Who will carry out the research?
- Who will take part in the research?

The first question is about deciding on the research team. An important consideration

ideas for research tend to emerge from people's interests and experiences

here is the skills that will be needed. A recent report about Collaborative Research in Practice (Morris and Norman, 2004) highlights three types of skills involved in research:

- methodological skills – being able to understand the strengths and weaknesses of different methods, as well as options for analysis and quality assurance

- managerial skills – relating to the coordination, scheduling and staffing of the project

- interpersonal skills – the capacity to engage different types of people and communicate effectively with potential user groups.

It is rare that all these skills will be found in one person, and that is why it is worth thinking about which other colleagues (internally and externally) might be encouraged to play a role (see Box 5). The use of a project advisory group comprising external individuals with particular skills is a useful way to complement the research team and promote wider awareness of the work.

Another issue relating to the question of 'Who will carry out the research?' is the possible tensions that can occur between being a practitioner and being a researcher. Such tensions can take the shape of practical concerns (such as 'Are students really going to tell me what they think about the lessons or should the interviews be done by someone else?') as well as deeper-seated identity issues ('How come people stop talking when I go into the team room now I am doing this research?').

The second question – Who will take part in the research? – is about sampling. In other words, from whom are we going to collect the information we need to answer our research questions? And, because it is almost always impossible to collect information from everyone in a particular group, how are we going to select a smaller number, i.e. a sample? A detailed discussion of sampling procedures is beyond the scope of this article, but it can be helpful to remember that:

- it is crucial to keep coming back to the research aims/questions in thinking about sampling

Figure 2 A questions–methods matrix *Source: Adapted from Wellington (2000, p. 50)*

	Research methods					
Research questions	Questionnaire	Interview	Observation	Document analysis	etc.	etc.

Box 4 Strengths and weaknesses of different methods

Interviews, group discussions and conversations are useful for accessing:

- authentic voices and language

- verbal as opposed to written information

- depth of insights (perceptions, reasons, experiences)

- sensitive information

- information through dialogue

- unexpected information

but:

- they're costly/time consuming to undertake, write up and analyse

- audio/video recording can be inhibiting

- the data is not simple to analyse, and not easily quantifiable

- it's a skilled activity

- what people say is not always what they do.

Questionnaires, proformas and checklists are useful for accessing:

- large numbers of people's views

- anonymous views

- specific information

- comparative data

- information about many performance indicators at once

- quantifiable data

but:

- they're costly/time consuming to design, process and analyse

- questions can be misinterpreted or left blank

- response rates can be low

- responses may be superficial

- questions may not elicit the reasons behind a response.

Observation (structured or unstructured) is useful for accessing:

- insights into actions, interactions and processes

- non-verbal behaviours

- images or events to explore with participants

- rich descriptions or images

but:

- can inhibit those who are observed

- can alter the dynamics of what is being observed

- is costly/time-consuming to undertake and analyse

- can be difficult to analyse.

Journals and essays are useful for accessing:

- researchers' and participants' views and experiences during the process

- personal self-evaluative and reflective insights

but:

- can be demanding for researchers and participants

- can vary in the depth of insight provided.

Source: Adapted from Morris and Twitchin (1990, pp. 15–20)

- where possible, it is usually beneficial to seek as much variety within your sample as possible

- the demands for variety need to be balanced with what is feasible and affordable (for the researchers and the participants).

Research schedule

Like other developments within schools and colleges, research needs careful scheduling. In developing research schedules, it is important to:

- ensure there is an opportunity to collect baseline (or starting point) data if this is needed
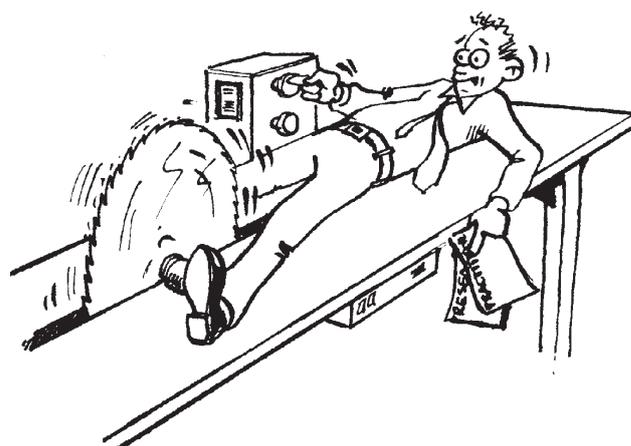
- build in time for piloting data-collection instruments such as focus group activities or questionnaires

- think carefully about what tasks need to take place before or after each other, e.g. sampling before data collection

- create opportunities for digesting and making sense of emerging ideas during the data-collection phase

- include dedicated time for analysis and discussion within the team

- allow time for formulating recommendations or 'take-away points' for other practitioner and policy audiences

- build in time for dissemination activities, both during as well as towards the end of the project.

Thinking about communication and impact

This final section concerns the big 'So what?' question. The key point is that if you wait until the end of your research project to think about dissemination, then you will have missed the boat! Questions of dissemination,

possible tensions can occur between being a practitioner and being a researcher

communication and impact need to be thought about from the very start of a project and built into schedules and budgets.

A central challenge is thinking as creatively as possible about how research findings and research products can be communicated and made meaningful to their intended audiences. This requires careful consideration about who the intended audiences are and what their preferences might be in terms of mode and style of communication (see Table 1).

In planning a dissemination strategy, though, it is important to remember that this needs to be as active as possible. In other words, the challenge is not to scatter your research findings as far as possible, but rather to help others to engage with your work and see how it might be useful in their contexts. This can be helped by:

- tailoring dissemination methods to audience interests and needs

- using approaches that enable two-way, face-to-face communication

- using a range of different methods in combination

- involving target users in planning dissemination methods/events

- recruiting well-known opinion leaders/experts as project 'champions' (for more details, see Nutley *et al.*, 2003).

Box 5 Sources of expertise for a research project

- An administrator with well-developed database or desktop publishing skills.

- An external researcher with knowledge of particular techniques or research literature.

- An information specialist who can help with internet searches.

- A senior manager who can help with dissemination across and beyond the school.

- A continuing professional development coordinator who can facilitate staff development sessions based on the research findings.

- A colleague from another school or college with a well-developed research culture.

A final word

As a final word about planning research, please remember that:

- it is usually better to start small with simple questions/data-collection methods, rather than getting bogged down in collecting masses of data that will never be analysed or used

- the research process is cyclical and haphazard (as opposed to linear and tidy) and so plans need to be flexible and responsive – indeed, it is often when things 'go wrong', that the most interesting findings are becoming clear!

Further information

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Gillham, B. (2000). *Developing a Questionnaire*. London: Continuum.

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Handscomb, G. and MacBeath, J. (2003). *The Research Engaged School*. Essex: Forum for Learning and Research Enquiry (FLARE), Essex County Council.

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MacBeath, J., Demetriou, H., Rudduck, J. and Myers, K. (2003). *Consulting Pupils: a Toolkit for Teachers*. Cambridge: Pearson.

Robson, C. (2002). *Real World Research: a Resource for Social Scientists and Practitioner–Researchers*. Oxford: Blackwell.

Table 1   Different methods of dissemination

Mode of communication	Possible methods
Paper	Project summary leaflets
	Key findings leaflets
	Project newsletters/bulletins
	Posters, postcards and displays
	Articles in professional journals
	Teaching or teacher-training materials
	Practitioner toolkits
	Articles in academic journals
	Books
Electronic	Project websites
	Online project summaries
	Online key findings summaries
	Project newsletters/bulletins
	Project videos/CD ROMs/DVDs
	Targeted email distribution lists
	Practitioner-research websites, e.g. *Topic online*
Events	Advisory group meetings
	Project seminars
	Informal discussions with key partners/networks
	Training events/workshops
	Implications workshops
	Policy discussion forums
	Presentations at practitioner conferences
	Presentations at academic conferences
Media	Press releases
	TV/radio interviews
	Newspaper articles

References

Morris, A. and Norman, L. (2004). *Collaborative Research in Practice*. London: Learning and Skills Research Centre.

Morris, M. and Twitchin, R. (1990). *Evaluating Flexible Learning: a Users' Guide*. Slough: NFER.

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Stenhouse, L. (1975). *An Introduction to Curriculum Research and Development*. London: Heinemann.

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Wellington, J. (2000). *Educational Research. Contemporary Issues and Practical Approaches*. London: Continuum

Related weblinks

www.topiconline.co.uk/index_1.asp
The NFER's online summaries of research for schools and teachers.

www.gtce.org.uk/research/romhome.asp
The General Teaching Council's research page for practitioners, entitled 'Research of the Month'.

www.standards.dfes.gov.uk/research
The Department for Education and Skills' Research Informed Practice site with searchable digests of research.

www.nerf-uk.org/bulletin/
The National Educational Research Forum's research bulletin for teachers in schools and colleges.

www.lsda.org.uk/files/lsda/solutions/ OrganisationalDev/RDToolkit.pdf
The Learning and Skills Development Agency's Research and Development Toolkit.

www.tta.gov.uk/itt/providers/research/ panel/index.htm
The website of the National Teacher Research Panel, an advisory body of teacher researchers.

www.teachernet.gov.uk/research/
The Department for Education and Skills' information service for education professionals interested in all aspects of research.

www.becta.org.uk/research/display.cfm? section=6
The BECTA website includes a section on practitioner research, including advice about how to go about doing research and about ethics.

About the author

Mark Rickinson is an educational research consultant specialising in programme evaluation, outdoor/environmental education, research training and literature reviews. He is currently undertaking work for the Department for Education and Skills, the National Educational Research Forum, the Countryside Agency and Learning through Landscapes. Mark is also a Research Fellow at Oxford University Department of Educational Studies.

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