Action research for teachers measuring the impact of ICT

This paper can be accessed from the Becta site. It provides an extremely useful tool for people about to undertake Action Research. The purpose of these guidelines is to provide a basic framework for reflection on classroom practice, most especially to enable study of the impact of ICT on teaching and learning. The guidelines are intended to support teachers at the planning stages of **action research** in the classroom. Using a structured format can enable research outcomes and findings to be shared, and can provide a research basis for subsequent planned change.

What do I need to consider to undertake action research?

Action research follows a cyclical process, and only the first cycle can be planned in advance. Thereafter, the next **action research** cycles depend on the evaluation phase at the end of previous cycles. **Action research** is often collaborative, involving planning with a colleague or colleagues. Action researchers may have a `critical friend' or research facilitator working with them. Below is a suggested structure to help you plan and organise your research.

Keep a research journal

It is a good idea to keep a research journal, in which you can accumulate information about the progress of your work. Your journal should contain contextual information, field notes, ideas, dates, and any seemingly minor details which you feel are best recorded. They may well turn out to be important, and it is often hard to recall these things after time has elapsed.

Plan your research

Before you undertake your research, consider the following structure for planning the various stages of your research. Sample planning sheets can be found in the appendix to this information sheet.

Title

Title of the research project.

Outline

Outline of the study in 100 words.

Timeline

Clarify the start and completion dates for the study and specify milestones in the research. Meeting times and dates can also be recorded. The timeline may well be altered as the research progresses, with the archived timelines acting as part of your research journal data.

Contacts list

Ensure that contact details of everyone involved in the study are accessible to all. Each person on the contact list, including administrators, should have a paper copy of this document, and one person should have responsibility for updating it regularly. A `Who has Responsibility' section can help to ensure that everyone is aware of their own role and those of other colleagues.

Research and learning

Specify how the research links into the curriculum and record some of the pre- conditions of the study. This stage of the planning records information about the `value added' expected of the ICT employed in the research. Include a brief description of the nature of the activity to be undertaken by teachers and learners, its intended outcomes and any anticipated difficulties.

Field notes record sheet

Standardise the recording of contextual events as the study progresses. Completed sheets can become part of the research journal and provide a basis for discussion at meetings.

Establish the purpose of the research

Key questions to ask are:

∗ What is the principal aim of the research?

∗ What do you envisage as the potential benefits of the research? - for teaching and learning, - for individual pupils, - for your own professional development, - for the school?

∗ How might the research contribute to our general understanding about the process of teaching and learning?

Formulate questions for your proposed research

It is a good idea to summarise your proposed research as a question or a short set of questions. Your research question or questions should be well focused, for example to reflect a particular issue which has arisen as part of teaching and learning in your classroom. You might wish to research the effects of change using new hardware, software, or classroom management. Whatever the topic, formulate it as one or more questions requiring answers. Further information on undertaking research can be found on the BERA (British Educational Research Association) web site at: http://www.bera.ac.**uk**/ .

Specify the background to the project

Provide an understanding of the cultural context of the study school(s) and partner organisations. Include any conditions which you consider may affect the outcomes of change. Background information can cover:

∗ the whole-school context - type of school - number of pupils on roll - number of staff - ICT provision - other relevant information.

∗ the classroom context - physical characteristics of the classroom (including ICT provision) - class profile, including: - age range - number - strengths - pupils on SEN register - other relevant information - classroom support.

∗ the personal context - How did you become involved in the research project? - Why is this research important to you at this point in your career?

∗ other factors.

Ethics

∗ Have you obtained consent to undertake research? Record the response of your discussion of the research with the headteacher, senior management, governors, other colleagues and pupils.

∗ Can you ensure that confidentiality is protected, if required? How?

Some ethical rules for school-based research:

1. Ensure that the research you propose is viable, that adequate research design has been established, and that appropriate data-collection techniques are chosen.
2. Explain as clearly as possible the aims, objectives, and methods of the research to everyone involved.
3. If using confidential documents, ensure that anonymity is maintained by eliminating any kind of material or information that could lead others to identify the subject or subjects. Pupils' identities should not be revealed in web material published as a result of the research.
4. Ensure that you have permission from all involved before publication of any or part of the research.
5. You should be aware of the possible uses of the research findings.
6. Research should not ultimately disadvantage any group of pupils.
7. Data should be stored securely and destroyed within 18 months of the end of the study.
8. If there is joint or collaborative research, all researchers must adhere to the same set of ethical principles.

(Adapted from Hitchcock, G and Hughes, D 1989. *Research and the Teacher* . London: Routledge. p 201) ***Setting up the research: some decisions***

Before undertaking research, decide on the method of data collection, and why.

* What data will you collect?
* Who will you collect data from?
* In what form will data be collected?
* How will recording of data take place? Consider the suitability (or otherwise) of a range of research methods.

For example:

* qualitative data - case study - interview - questionnaire - documentary evidence - observation journal
* quantitative data - What will be measured? - How will data be collected? * analysis - How will data be analysed? - At what points will analysis be undertaken?

Running the study

This checklist can help to ensure that the study is well organised before you pilot or run the research. Have you:

* obtained consent for the study?
* booked computers / ICT / computer suite?
* checked that electrical / ICT equipment is in working order?
* obtained supplies of consumables (for example, tapes)?
* checked that you are familiar with any software or hardware?
* checked that you can obtain technical support if necessary?
* produced and tested your data-collection instruments?
* kept a record of the contextual conditions existing before the study?
* checked that your study is integrated into the school's planning?
* checked that your pupils understand your aims for the research?
* checked your own and your pupils' aims for their learning?
* organised classroom support if necessary?

* checked that everyone involved has a timetable for the study?
* checked that everyone involved has contact details for one another?
* ensured that there is a clear storage and retrieval system for data collected?
* built time for analysis, reflection and discussion into the research timetable?
* organised a definite start and end point for data collection?
* decided who will write up the study?
* decided who will read and comment on drafts of findings?
* found a way to disseminate your findings?
* started a research journal which must be continually updated?
* set up a way to record questions which arise during the study?

Reporting your findings

The structure, content, word length and style of presentation of your findings will depend on your intended audience. For example, papers for journals or articles for magazines will be presented in a different format from book chapters or a research report. It is important to look carefully at existing publications of the kind you are trying to write, to gauge such features as the style, length, and format for your writing. The following structure outlines the presentation of a research study and its findings. The abstract may well be the last section to be written. Material for sections 2 to 6 and 10 to 12 can be collected throughout the study. For information on good practice in educational research writing see: http://www.bera.ac.uk/writing.html

General structure for a research report

1. Abstract
2. Background / introduction / context for the research
3. Review of relevant literature
4. Research methods
5. Findings
6. Analysis
7. Discussion
8. Conclusions
9. Summary and new directions
10. References
11. Glossary
12. Appendix

Finding the relevant literature

What existing work, including articles on research methods, relates to, or informs your study?

* Compile an annotated biography of books, book chapters, articles and papers, with quotations, including page numbers.

* Compile an annotated list of relevant web addresses with dates. Links provided here can help you to find relevant work:
  * BUBL http://bubl.ac.uk/link/ contains a thorough list of links to journals and research for specific subjects.
  * Educati *on-line* http://www.leeds.ac.uk/educol/ has a directory of papers and research.
  * Educational **Action Research** http://www.triangle.co.uk/ a publication on **action research**.
  * PINAKES http://www.hw.ac.uk/libWWW/irn/pinakes/pinakes.html a portal to subject-specific academic research directories.
  * Social Sciences Information Gateway http://www.sosig.ac.uk/**education**/ .
  * Teachernet http://www.teachernet.gov.uk - the Department for **Education** and Skills (DfES) portal for teacher information.
  * T for T: **Action Research** by Teachers for Teachers http://194.83.41.143/TforT/ .
  * TTA: Teacher Training Agency Research pages http://www.canteach.gov.uk/research/ .
* **UK** Higher **Education** & Research Libraries http://www.ex.ac.uk/library/uklibs.html .

Other sources of information

Becta Becta Research Area http://www.becta.org.uk/research contains information on Becta's research activities, links to further resources and details on joining the ICT Research Network.

Teacher Resource Exchange http://contribute.bit10.net/ teachers can submit their ideas for ICT use, and develop ideas to become full resources for use in classrooms.

Teachers Online Project http://top.ngfl.gov.uk/ a discussion forum, where teachers can exchange views and join in collaborative projects. There is a monthly newsletter on ICT in **education**.

Virtual Teacher Centre (VTC) http://vtc.ngfl.gov.uk/ links to ICT in practice across the curriculum, as well as news and updates for teachers.

This sheet can be accessed in full text on the Internet in a choice of formats: * standard HTML: http://www.becta.org.uk/technology/infosheets/html/actionresearch.html * PDF: http://www.becta.org.uk/technology/infosheets/pdf/actionresearch.pdf ahttp://www.becta.org.uk/

Appendix: Sample planning sheets: ***Timeline***

Action and events

Meeting dates and times

Deadlines

Sept

Oct

Nov

Dec

Jan

Feb

Mar

Apr

May

Jun

July

Aug

Contacts list

Names of

colleagues

Institution

E-mail

Telephone

Code/

initials

Names of pupils in the project

Groups of Pupils (Indicate control, target, etc.)

1

6

2

7

3

8

4

9

5

10

Who has responsibility?

Task or action

Name (s)

Research and learning planning sheet

Key stage of pupils

Curriculum subject area

Learning objectives

Previous subject knowledge of pupils

Specify ICT to be used

Reasons for using ICT

Previous ICT skills and knowledge of pupils

What the intervention / study / activity involves

Intended outcomes

Possible disadvantages or difficulties

Field Notes Record Sheet

Date and time

Research notes by

Notes

Action to be taken