

Action Research

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Overview

Action research (AR) entails a teacher setting out to investigate and solve a particular challenge or problem by following a cyclical series of stages. These can be described simply as:

- identify and analyse a problem
- develop an action plan to improve the situation
- implement the plan
- observe the effects of your action
- reflect on these effects
- repeat the cycle for further improvement.

AR has been widely used in the schools sector for some years, and much of the literature on it is aimed at this context. However, as an approach that entails teachers identifying, and acting on, aspects of their classroom practice that are problematic (poorly motivated students, lack of evidence that deep learning is taking place, students not preparing for seminars etc), it is one that fits equally well in the HE sector, especially since it can lead to publishable work when conducted in a rigorous and disciplined manner.

For other references and web links, see pp. 7–8 below.

The material on pp. 2–4 is adapted from Kemmis and McTaggart (2005) by kind permission of Professor Robin McTaggart, Pro-Vice-Chancellor, Staff Development and Student Affairs, James Cook University, Australia.

Some Definitions of Action Research

Action research has been written about and debated extensively over the last 60 years, so not surprisingly many definitions have been put forward. Here is a typical selection:

- systematic enquiry designed to yield practical results capable of improving a specific aspect of practice and made public to enable scrutiny and testing (www.standards.dfes.gov.uk/research/glossary)
- inquiry-based research conducted by teachers that follows a process of examining existing practices, implementing new practices, and evaluating the results, leading to an improvement cycle that benefits both students and teachers. Synonyms include practitioner research, teacher research, site-based research, and action science (<http://cs3.wnmu.edu/elearning>)

- a (usually cyclic) process by which change and understanding can be pursued at the one time, with action and critical reflection taking place in turn. The reflection is used to review the previous action and plan the next one (Dick 1997) (www.scu.edu.au/schools)
- the reflexive process by which educators systematically study their problems in order to guide, correct and evaluate their decisions and actions regarding the improvement of teaching and learning in their individual professional context (www.arexpeditions.montana.edu/index.html).

Key Features of Action Research

Action research is:

- collective and collaborative self-reflective enquiry
- undertaken by participants in social situations
- done in order to make their own practices more rational, coherent, satisfying and just.

Action research enhances participants' understandings of their practices and the situations in which they are conducted (see also www.prodait.org/approaches/exploratory/index.php for an explanation of exploratory practice, which has similar aims).

AR is collaborative

Teachers doing action research participate and collaborate, examining their knowledge (understandings, skills and values) and the ways they interpret themselves and their actions. They do action research 'on' themselves, individually and collectively, collecting data about how they teach, for example by audio-taping their interactions with students to study later. They invite students to study their own learning and to comment on the teaching, curriculum and organization of their learning.

AR is a social process

AR is a social process that deliberately explores the relationship between the practices of the individual and of others, for example, when university teachers work together, or with students, to improve teaching practices in classrooms or other learning spaces.

How is Action Research Done?

Action research is commonly but incompletely described as a sequence of steps, typically represented as a spiral (See Figure 1 below). The spiral involves self-reflective cycles of:

- a planning a change
- b acting and observing the process and consequences of the change
- c reflecting on these processes and consequences, then
- d re-planning
- e acting and observing
- f reflecting and so on ...

Figure 1: Action research spiral



In reality, the process may not be as neat as this spiral suggests. The different cycles of activity usually overlap, and initial plans quickly become obsolete in the light of learning from experience. The cycles of planning, doing and reviewing can, in theory, go on indefinitely but the practitioner has to decide on the limits of the study. Usually a minimum of two cycles is considered necessary.

What can teachers research?

Teachers might study:

- how they and their students talk
- how their work pans out in practice
- the kinds of relationships they are forming so they can judge how to improve things.

Teachers try things out, study what happens, share data with others, perhaps read some literature, and then try again with new ideas.

Revealing constraints and nurturing confidence

Seeing their work more objectively helps teachers to see constraints such as lack of confidence among students that is frustrating their efforts to learn. Involving students in collecting information about their learning situations nurtures confidence and self-determination.

From recognising constraints to acting for change – an example

- a Teachers discover constraints embedded in language realising that thinking of 'teaching' rather than students' interpretations of what is happening to them, can cut them off from understanding how both students' and teachers' work produces surface rather than deep learning.
- b Teachers see constraints in workplaces and workloads which do not allow time to study what is happening. Communication about teaching can reveal other shared concerns. This helps them to understand how time can be created to think more about teaching and to plan something that might improve the quality of students' experiences.
- c They try that out, study what happens, help each other to plan again and so on. The data and the talk are reflexive: things begin to change just because there are new ways of talking about what is happening and how to act.
- d There are no external 'observers' here; people share the information they collect for themselves, and discipline their thinking and their planning for action, becoming increasingly informed groups of 'critical friends' improving both the theory and practice of teaching and learning together.

Methods in Action Research

Within action research, a range of methods can be chosen to collect data. For example, the case of a group of students who do not respond to small group teaching might lead to the question:

How can the quality of teaching and learning be improved in this class?

But it will be important to be more specific after looking at exactly what is going on. In Stage 1, sometimes called the 'reconnaissance' stage, the students might be interviewed or given questionnaires and the class could be observed. It would also be useful to look at literature, perhaps on approaches to small group teaching and to discuss the problem with colleagues. It might be possible, through one or more of these methods, to identify that, for example:

- some groups are frequently 'off task'
- some of the groups achieve much more than others
- some students do not participate in discussion.

This may lead to the question being framed as follows:

Can I get better participation from these students?

or:

How can I provide more effective learning experiences for the students?

or, more specifically:

What strategies can I use to improve the students' learning?

In action research, the search of the literature is legitimately part of the data-gathering, or part of the action which will influence the re-statement of the question or problem. This can be in contrast to more traditional research approaches, where searching the literature tends to be carried out to help formulate questions and to summarise what other researchers have achieved in this area of research to provide a background against which to place your own study.

Action in Action Research

One of the most important aspects of this type of research is the action that practitioners take to change what is happening in their workplaces. Action research can be a very powerful tool enabling practitioners not only to solve practical problems, but also to reflect on their understanding of how to develop practice. Stage 2 and onwards therefore, will involve doing something different with the students, perhaps based on literature and/or discussion with colleagues and with the students themselves. Then, by monitoring carefully what is happening, perhaps again by observation and questionnaires to students, any changes can be recorded. It is unlikely that everything will be perfect after one cycle and so reflection on what worked and what was not so successful will lead to a further round of action.

Action Research and Personal Theories

Whitehead (1993) writes about using action research to develop one's 'own living educational theories'. He suggests that the cycle of identifying a gap between personal theories and reality in the classroom ('there is something wrong here'), collecting data to understand what is wrong and taking action to improve the situation can lead to adjustment of personal theories and a closer fit with practice. So, for example, you may be trying to use small group teaching as a way to encourage 'deep' learning in students. When this does not appear to be happening, modification of practice can lead to a closer fit to this theory.

Whitehead, J. (1993) *The Growth of Educational Knowledge: Creating Your Own Living Educational Theories*. Bournemouth: Hyde Publications.

Further Resources

Publishing reports of action research

As an established approach to classroom research, reports of more extensive AR projects may be suitable for publication. There are a number of journals that specialise in this, including the following.

- *Action Research* (Sage) is an international, interdisciplinary, refereed journal which is a forum for the development of the theory and practice of action research (see <http://arj.sagepub.com>).
- *AR Expeditions* (Montana State University) is a professional online journal that exists to promote a creative and critical dialogue between members of the action research community, including educators in formal and informal settings, community members, university faculty, industrialists, politicians and administrators (see www.arexpeditions.montana.edu/index.html).
- *Systemic Practice and Action Research* (Springer), formerly *Systems Practice*, is published six times a year. It examines the effects of technological advancement on society, including past technologies that continue to have profound effects today (see www.springer.com/uk/home/business/journals?SGWID=3-40528-70-35707890-0).
- *Educational Action Research* (Routledge) is a fully refereed international journal that is concerned with exploring the dialogue between research and practice in educational settings (see www.tandf.co.uk/journals/titles/09650792.asp).

Links to more information

- For a good, short article explaining AR in more detail and giving more follow-up references, see www.infed.org/research/b-actres.htm.
- BERA (the British Educational Research Association) is also a useful source of information at www.bera.ac.uk.
- Southern Cross University has action research resources at www.scu.edu.au/schools/gcm/ar/arhome.html.
- The BBC and British Council website has a section dedicated to action research in the context of teaching English at www.teachingenglish.org.uk/think/methodology/action_research.shtml.

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Examples of AR Projects

Example 1: Differential instruction and learning styles

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Abstract

Although educators have known for years their students learn through different modes, most instruction and assessment is done in modes that the teacher finds most comfortable and not necessarily in the ways that students prefer to learn. In this action research project, the teacher investigated differentiation using varied activities, assessments, and instructional methods to enhance his teaching and improve student learning. To meet the students' needs, the teacher assessed the students' preferred learning styles using an assessment tool from the literature. The information gathered was used to guide instructional strategies and methodology, implement assessment tools to better tap into the students' knowledge, and train students on ways to improve their own study and learning. With the aid of his students and educational peers, the instructor investigated the varied instructional methods and assessments for utility. Student feedback and educational peer views, as well as assessment scores, were evaluated for improvement, receptivity, and use of the opportunity by students to learn in their own preferred learning styles. The data indicates an increase in student engagement in the educational process, a reduction in time spent in dealing with behavior problems, greater student ownership in the educational process, and greater enjoyment by all parties in the educational endeavor. Data also reveals a positive correlation between this treatment and increased test scores. The teacher concluded that the process of investigating student learning style preferences, instructional strategies, and assessments through the action research process is a worthwhile endeavor.

You can read the full article at

<http://arexpeditions.montana.edu/articleviewer.php?AID=78&PAGE=2>.

Example 2: Using portfolios to assess science process skills and metacognitive development

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Abstract

The assessment of laboratory activities has been a source of concern. How should they be assessed? What should be assessed? After researching general assessment techniques and more specifically authentic assessment, the decision was made to use portfolios as a method of assessing process skills learned and practiced during laboratory activities. The focus of this study became, "How will the use of a portfolio assessment system affect my teaching and my students' attitudes towards laboratory assessment?" This main focus was comprised of several sub-questions. These included questions about my effectiveness as a teacher using portfolios, the effect portfolios would have on planning time, whether portfolio assessment would facilitate concentrating on science process skills, and the attitude of students towards portfolios and laboratory assessment. Seventh grade students were given an assignment that had them reflect on the quality of the work in their lab books. Sixth graders were given a process skill "scavenger hunt". Though both assignments were deemed successful and generally viewed positively by students, upon reflection it was determined that portfolios were better used to promote metacognitive skills, and performance assessments were a better way to assess process skill development. A second assignment was given to both grades that asked them to reflect on and critique samples of their work. The goal of this task was to determine whether they were able to accurately articulate their own strengths and weaknesses. Process skills were evaluated by utilizing performance assessments embedded in their first semester exams. The teacher found the information gained from the assessments useful and the students again generally responded positively. Future efforts will concentrate on refining the assignments and continuing to focus on process skills in the classroom.

You can read the full article at

<http://arexpeditions.montana.edu/articleviewer.php?AID=79&PAGE=2>.

Example 3: Action research and development coalitions in health care

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Abstract

Action research within the field of work and organization has, for several decades, struggled with the problem of concentrating its efforts on a few workplaces versus distributing them on many. The Swedish programme 'Work environment in health care' was an effort to reach out broadly in this sector of working life, although with limited resources. The article presents and discusses an approach based on using dialogically structured encounters to support a number of local developments at the same time as an effort was made to turn these encounters into a permanent infrastructure for development.

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