

The Role (or Value) of Action Research in Complexity

An action research paper.

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I have set this paper out in a very standard approach to explore meaning when addressing a problem. It does though contain ways in which to convey meaning that are not normally seen in written documents. Broadly I have approached the problem in three steps. I will first explore the literature relating to definitions of Action Research, then consider a model of complexity and finally I will carry out a process to synthesise these two investigations into something that answers the question; viz; “What is the Role of Action Research in Complexity?”

In his book, *A Reader on Reading*, Alberto Manguel (Manguel 2010) eloquently explores the relationship not just between a writer and the reader, but also between the act of reading and words. A writer might write some words, and the reader will read them, but the meaning will vary according to who the reader is, their preconceptions, world views and capacities. Furthermore, meaning is also conditioned by how the words are set out, whether read out loud, on a screen or papyrus, the physical space in which the reader is located at that moment of reading, even what the reader might want to get out of the words on the page before even reading them. Written words are a powerful way to transfer ideas, world views and meaning but with limitations. Most famously, Marshall McLuhan wrote a book titled ‘The medium is the message’, (McLuhan 1967) but a printing error made it ‘The medium is the massage’, which he preferred. Was the printer now the writer? Did it change the meaning for others reading the book?

In a training program designed for project managers to learn a structured approach to community engagement planning, participants explore the meaning of the term ‘Community Engagement’ in an interactive manner. To do this eleven descriptions of community engagement were selected from various Government departments, NGO’s, books and pamphlets. These were each no longer than half a page long, and each printed on separate sheets. In the exercise participants are arranged in groups of between 4 -6 sitting at tables. Each table has a folder containing the eleven descriptions. In the first part of the exercise participants are asked to each spend 10 minutes silently reading at least two (or more) of the descriptions from those on their table. As they are reading they are to note what the article suggests:

- is community engagement?
- who the community is?
- the benefits of community engagement?

At the end of the ten minutes, each table elects a scribe who is provided with a sheet of butchers paper and marker. Each table participant reports back to the scribe their findings (10 mins). At the

end of this ten minutes, each table is asked to refer to the notes written by the scribe, and as a table group develop a short phrase, or sentence or a few words that describes the “essence” of community engagement.

Over about 50 separate training sessions (all with the same eleven descriptions), each with between 3 - 4 table groups, no ‘essence’ has been the same. From those recorded, examples include:

- Valued participation
- Consultative process
- A group of people continuously collaborating to produce a positive change and a strong sense of belonging
- A 2 way partnership between communities to create dialogue and assist with decision making

Some are very sophisticated, some are not. Some table groups struggle to come to a decision, others will put two words down in the first minute and wonder why everyone else is struggling.

As an addendum to this paper, there are nine relatively randomly chosen definitions of Action Research. You may look through these definitions and develop your own, but a better option might be to gather together somewhere between 12 to 24 people and run the same process described above with them to develop an agreed definition of Action Research. The questions for them to consider as they read the articles could be:

What does each article say is Action Research?

Who conducts Action Research?

What does the article say are the benefits of Action Research?

As you read this paper, you might like to imagine that you had asked a group to determine a definition of action research. Would they be the same? Would they be right? Would they be the same as yours?

Words are traditionally a powerful way in which to convey meaning. However it is not the only way. Within the built environment there is a strong tradition of using drawings and models to convey ideas (Fig 1). Whilst techniques have also changed over time, the use of a three dimensional model to convey a statement of intent is a recognised form to convey meaning. Thus an intended structure can be described in a variety of ways; words, drawings, models - each communication method enabling not just a different layer of meaning, but different meanings.



Fig 1: An architectural model. It describes both meaning in a different way to words, and different meanings.

Whilst it is possible (and many have done it) to describe complexity through words, I have found a more user friendly way is to build a model. Before doing this though it is helpful to context it for clarity.

Over the last 30-40yrs in development theory and practice there has become a greater understanding of the difference between Outcomes and Outputs. When a group of project managers are asked to identify which of the following is an ‘output’ and which an ‘outcome’ there is usually general agreement:

- Friendly neighbours (outcome)
- A cake (output)
- A report (output)
- Happy customers (outcome)
- Productive workforce (outcome)
- A map (output)

There is always an element of ambiguity between some, such as ‘Healthy rivers’, or ‘A great festival’, but the extremes are understood. The relationship between an output and an outcome is often nowadays expressed as a ‘program logic’, a common one is the internationally accepted LogFrame, which states that all you can do is an action resulting in an output, but which you hope will achieve a desired outcome that is beyond your locus of control. An example being to write a letter to the Minister (action and output), that you hope will result in something happening about noise pollution (outcome).

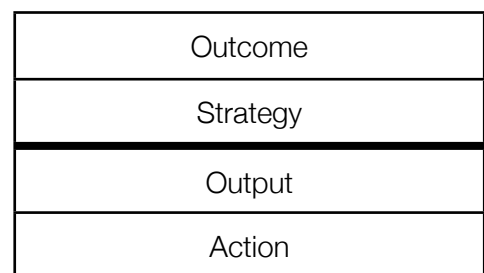


Fig 2 The LogFrame. An Internationally used program logic tool to describe the linkages between various components of purposeful endeavour

After this contexting, advise your group that they are going to build a model of a complex system. Ask them to all stand up, and form a loose circle in an appropriately sized space for the size of group to move around in that is free of obstacles such as chairs, benches, drains etc. Carry out the exercise as per Table 1.

Step	Context	Instruction
1	Group is standing in a loose circle	Cast your eyes around your colleagues, and silently, in your head, select two of them. Label one of them A and the other B.
2	Have you all chosen?	Now, without talking, pushing, running or jumping, you are to try and get as close to A and as far from B as possible.
3	Allow this system to develop for about 1minute	Remind them of no talking.

Step	Context	Instruction
4	The system is in action	<p>Tell them to stop.</p> <p>Ask the following questions in this order, one at a time, allowing plenty of time for answers in between:</p> <p>What happened?</p> <p>Where were your energies directed?</p> <p>What were you thinking?</p> <p>If somebody was looking down from a helicopter at this, what would they have seen?</p> <p>What else have you learned?</p> <p>What else have you learned?</p> <p>What else have you learned?</p>
5	There are no more responses. Advise them that you are going to now look at project management within a complex system.	<p>Advise them that you want them, silently, in their heads, to decide on the next two steps that they will take to achieve their goal of getting as far from A and as close to B. Demonstrate what you mean by physically moving across the space and counting; 1 step, 2 step. Advise them that to get the most from the model, they are to all plan their two steps in their heads and action them all together when you give the instruction; Move.</p>
6	The system has changed by everyone implementing their plans unilaterally	<p>Ask them:</p> <p>What happened?</p> <p>Were there any collisions?</p> <p>Which part of that exercise was the action? Which part the output? Which the strategy? Which the outcome?</p> <p>Remind them if necessary:</p> <p>The action is taking the two steps,</p> <p>The output is where you landed up (what you had control over)</p> <p>The strategy was the thinking</p> <p>The outcome what happened within the broader system.</p>

Step	Context	Instruction
7	The final part of the model	Instruct them to now talk to each other to achieve their goal of getting as close to A and as far from B. When it looks relatively stable ask them: What happened? What did you notice? What else have you learned?

Table 1: Description of complexity model

As you read this, you may think, “but this is not real complexity, real complexity is even more complex.” This is true, it is only a model of complexity, in just the same way that painted cardboard is not a real building, which is far more complicated. Just as words are real but limited. The final part of this analysis is to bring the two concepts together. Synthesising data collected or information gained is a complex task. Much has been written about this process. A common element is that it requires discussion and gestation to develop new meaning. Sam Kaner (Kaner 1996) describes this as the Diverge/Groan zone/converge process. There are many facilitation methods to achieve this process with a group. A common and simple one is the Noisy Round Robin.

Ask your group to return to their tables. Provide each table with a sheet of butchers paper and a marker. Remind them of the definitions of action research that they had collectively developed earlier. Ask them to brainstorm by table group as many responses as they can to the question: ‘What is the role of Action Research in Complexity’. After five minutes, move the sheets of butchers paper to the next table in a clockwise direction. Advise them that they are to:

- Read through the responses made by the other table
- Without repeating what they had written on the previous table, add any new ideas.

After five minutes, move the butchers paper clockwise again.

This time, ask them to read through what has been written on the sheet, and select the best two answers to the question. Ask that they highlight these and read them out to the rest of the group. Thank the group, congratulate them on their wisdom, and advise that they have nicely saved you from having to create a powerpoint.

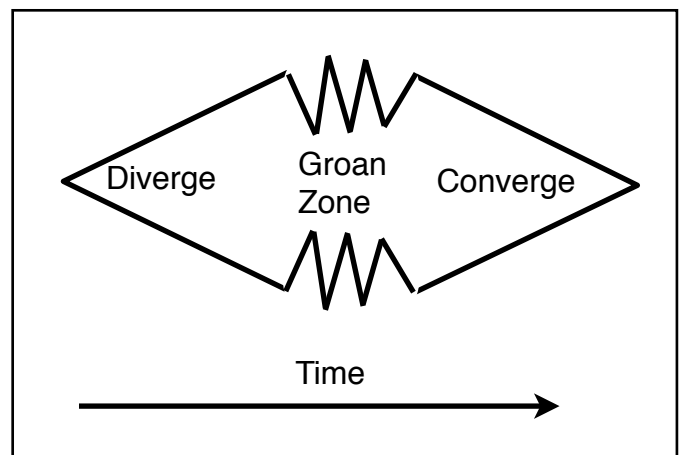


Fig 3: The 'Diverge/Converge' concept. This diagram describes the problem solving process, with the 'groan zone' in the middle.

If you have read this paper through without carrying out the process itself, you would have gained something of my idea of the value or role of Action Research in complexity. If you had participated in the process itself you would have developed a slightly different view. Neither would be right, just different. However if you had participated in the process, you would have come to a common understanding that you would share with some others, and in that process it would have strengthened the broader system in a way that would not have occurred if I had presented, or if everyone had simply read this paper.

If you have carried out the practical component with a group of people, you would have obtained a variety of responses to the question, some of which might have been relatively naive, some sophisticated. All would though have achieved a new sense of meaning concerning the question than you or they had before. Thus to finish with the group, you might like to ask the following questions:

Looking back over the last 70mins or so, What happened?

What were the highlights? Where were you challenged? What does this process itself say about action research and complexity? From this new perspective, how might you change how you go about your business in the future?

To conclude this paper, in my opinion the value of action research in complexity is that it allows people the opportunity to develop shared meaning, leading to sustainable (agreed) solutions in a way that strengthens the system as a whole.

I subtitled this paper 'an action research paper'. To date, whilst I have confidence in the exercises achieving the intended results, there is always the possibility of ambiguity and misinterpretation. I would thus like any feedback from those that implement the practical component of this paper. What worked? What didn't work? What might work better in the future?

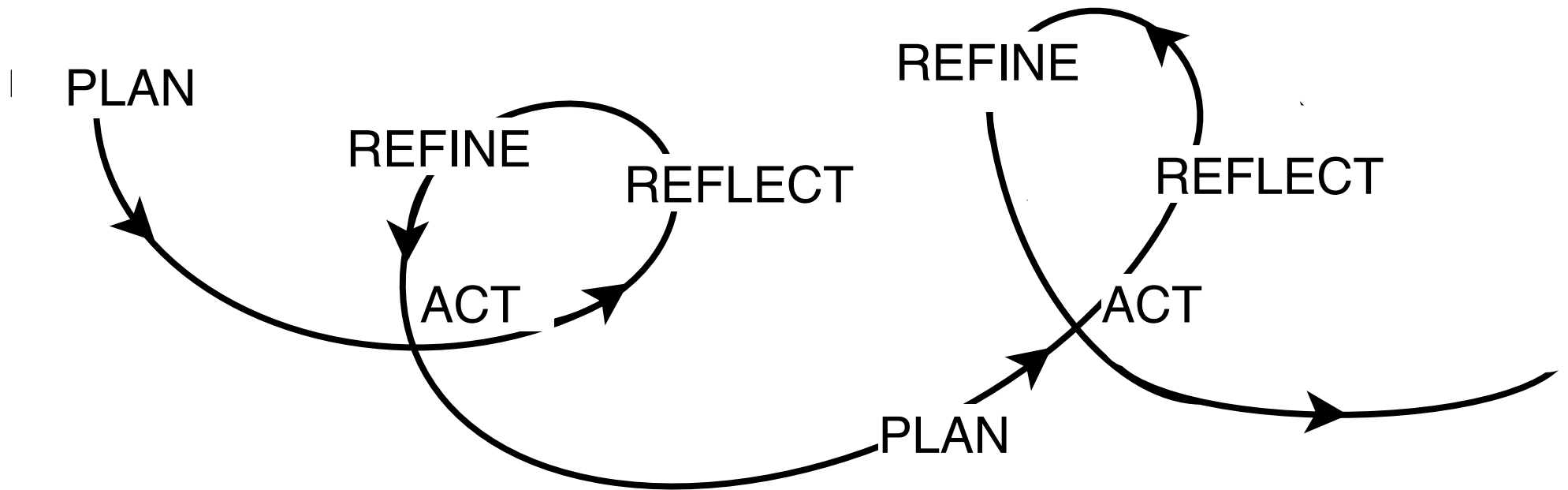
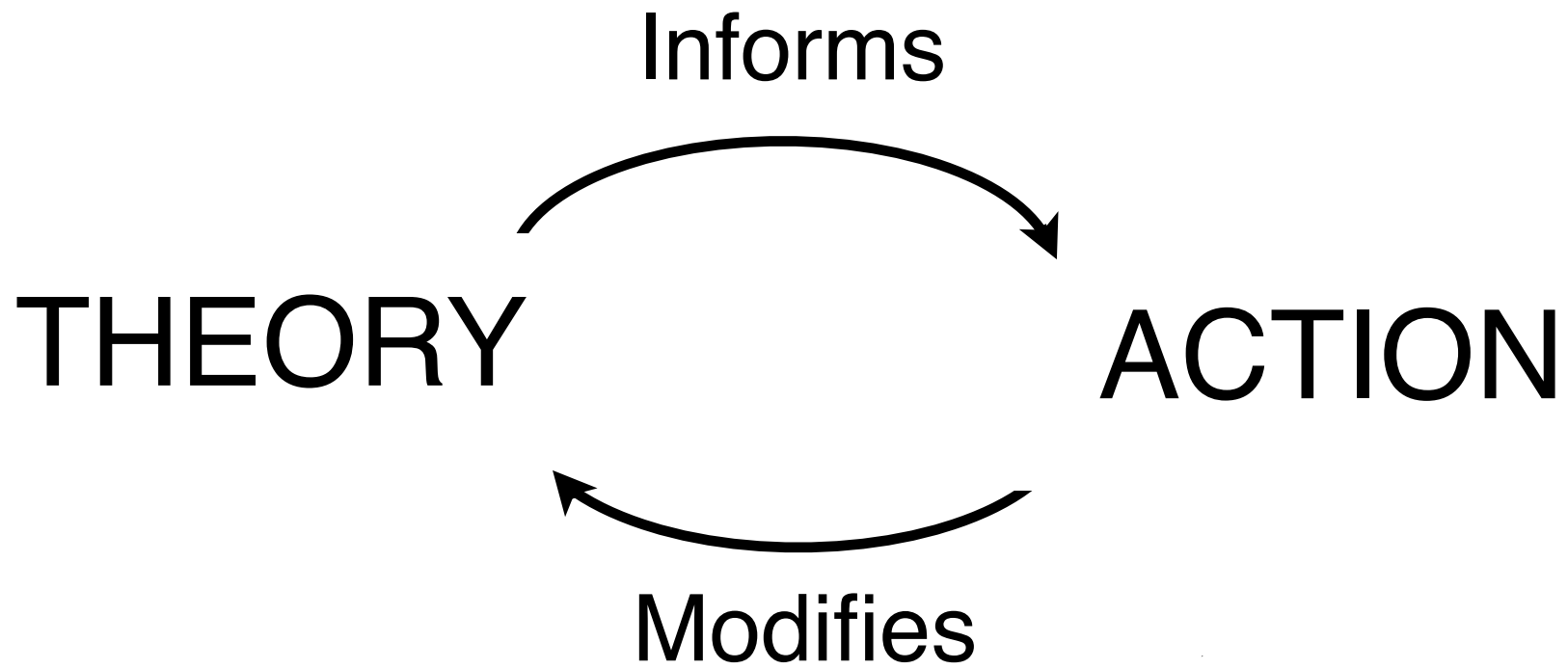
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What is action research?

It's a natural way of acting and researching at the same time

With the exception of well-practised tasks there is a natural rhythm to the way most of us behave. We do something. We check if it worked as expected. If it didn't, we analyse what happened and what we might do differently. If necessary we repeat the process.

act -> review -> act -> review ...

This is the natural cycle which action research uses to achieve its twin outcomes of action (for example, change) and research (for example, understanding). You might say that action research is true to label -- it is action and research.

action research = action and research

Some features of action research assist the action. Some assist the research. Some assist the "and" -- they help the action and the research fit together. We'll explore these in turn.

How does action research achieve the action outcomes? --

Mostly by involving people in the planning and the action and by being flexible and responsive to situation and people

In many situations some people (managers, teachers, parents) decide what is to be done. Others (employees, pupils, children) are then expected to do it. The deciders and the doers are different people. This often results in a certain lack of enthusiasm on the part of the doers.

In contrast, action research seeks to remove the gap between deciders and doers. Those who are affected by the decision join those who will carry it out. Together they decide what is to be done. Done well, participation generates commitment.

Further, wider views of the situation can then be taken into account. Managers do not always understand their employees, nor teachers their pupils, nor parents their children. Done well, participation can provide more complete information.

In addition, action research provides a flexibility which suits it well to changing situations. It achieves its flexibility mostly from its cyclic or spiral process.

Allen, W.J. [webmanager \(at\) learningforsustainability.net](mailto:webmanager@learningforsustainability.net) (2001) *Working together for environmental management: the role of information sharing and collaborative learning*. PhD (Development Studies), Massey University.]

Action research outlined

Action research (AR) comprises a family of research methodologies which aim to pursue action and research outcomes at the same time. It therefore has some components which resemble consultancy or change agency, and some which resemble field research. The focus is action to improve a situation and the research is the conscious effort, as part of the process, to formulate public knowledge that adds to theories of action that promote or inhibit learning in behavioural systems. One of the key characteristics of this approach is collaboration, which enables mutual understanding and consensus, democratic decision making and common action (Oja & Smulyan 1989 p.12).

In this sense the action researcher is a practitioner, an interventionist seeking to help improve client systems. "This help takes the form of creating conditions in the behavioural world of the client system that are conducive to inquiry and learning. Lasting improvement requires that the participatory action researcher help clients to change themselves so that their interactions will create these conditions for inquiry and learning" (Argyris et al. 1985 p.137). Hence to the aims of contributing to the practical improvement of problem situations and to the goals of developing public knowledge we can add a third aim of action research, to develop the self-help competencies of people facing problems.

Within this broad definition there are four basic themes: i) collaboration through participation; ii) acquisition of knowledge; iii) social change; and iv) empowerment of participants. The process that the researcher uses to guide those involved can be seen as a spiral of action research cycles consisting of phases of planning, acting, observing and reflecting (Masters 1995). As Oja and Smulyan (1989) point out, the underlying assumption of this approach -- which can be traced back to Lewin's writing in 1948 -- is that effective social change depends on the commitment and understanding of those involved in the change process (p. 14). In other words, if people work together on a common problem "clarifying and negotiating ideas and concerns, they will be more likely to change their minds if research indicates such change is necessary. Also, it is suggested that collaboration can provide people with the time and support necessary to make fundamental changes in their practice which endure beyond the research process (Oja & Smulyan 1989 p.14-15).

Thus the role of the action researcher is identical to that proposed for contemporary facilitators in helping communities identify and adopt more sustainable natural resource management practices (eg. Pretty & Chambers 1993, Pretty 1998).

Action learning

Action learning can be defined as a process in which a group of people come together more or less regularly to help each other to learn from their experience.



As Reg Revans used and described it, it was mostly used *_across_* different organisations. That is, the participants typically came from different situations, where each of them was involved in different activities and faced individual problems. Most commonly the participants have been managers, though this is not essential.

The current practice more often now is to set up an action learning program within one organisation. It is not unusual for a team to consist of people with a common task or problem.

There may or may not be a facilitator for the learning groups which are formed. Revans mostly avoided them. Current practice, I think, is mostly to use them.

Action research

Action research is a process by which change and understanding can be pursued at the one time. It is usually described as cyclic, with action and critical reflection taking place in turn. The reflection is used to review the previous action and plan the next one.

It is commonly done by a group of people, though sometimes individuals use it to improve their practice. It has been used often in the field of education for this purpose. It is not unusual for there to be someone from outside the team who acts as a facilitator.

A comparison

I used to think that action research was the umbrella term, and action learning was an application of it. Some of my colleagues, I found, argue that action learning is the umbrella term. On reflection, I don't think it's worth debating.

As they were previously practised, I think a useful distinction could be made. In action learning, each participants drew different learning from different experience. In action research a team of people drew collective learning from a collective experience.

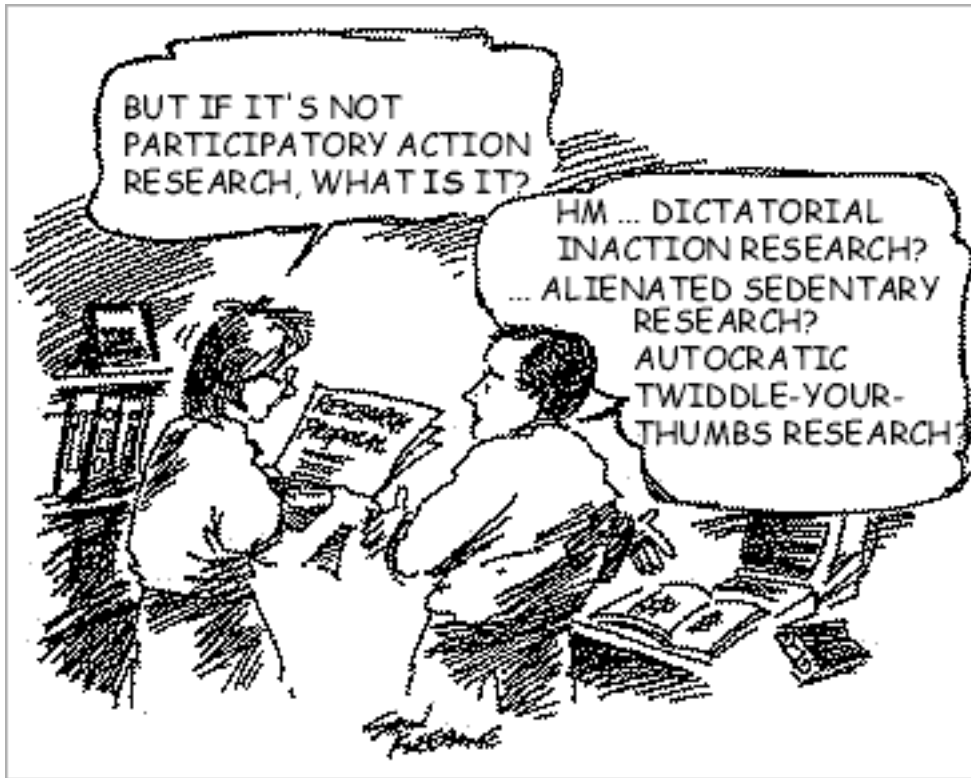
More recently, the advent of in-company action learning programs has begun to change this. The use of a team with a common project or problem leads to an action learning program which looks remarkably like action research.

There were also some differences, on average, in field of application. Action learning was more often used in organisational settings. Action research more common in community and educational settings. This distinction, too, is beginning to blur.

I now wonder if the distinction is worth preserving.

Dick, B. (1997) *Action learning and action research* [On line]. Available at

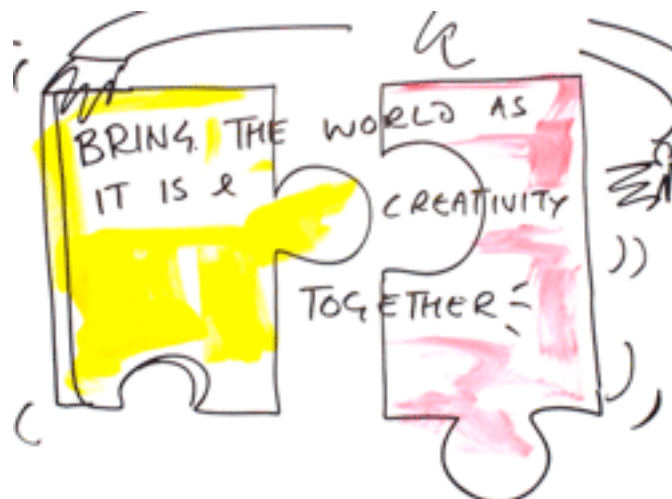
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<http://www.actionlearningassociates.co.uk/images/news/clp-cartoon3.gif>



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The Moments by Definition

Participatory action research can be defined as "collective, self-reflective enquiry undertaken by participants in social situations in order improve the rationality and justice of their own social...practices" (Kemmis and McTaggart 1988: 5). Research using PAR as it's method will happen in the four moments of action research, namely reflection, planning, action and observation. These research moments exist interdependently and follow each other in a spiral or cycle . Kemmis and McTaggart see PAR as a spiral (figure 1) and believe that

"the approach is only action research when it is collaborative, though it is important to realise that the action research of the group is achieved through the critically examined action of individual group members" (p5).

Reflection in PAR is that moment where the research participants examine and construct, then evaluate and reconstruct their concerns (Grundy, 1986: 28). Reflection includes the pre-emptive discussion of participants where they identify a shared concern or problem.

Planning in PAR is constructive and arises during discussions among the participants (Kemmis and McTaggart, 1988: 5) The Plan must be for critically examined action of each of the participants and include evaluation of the change.

Action happens when the Plan is put into place and the hoped for improvement to the social situation occur. This action will be deliberate and strategic (Grundy, 1986: 28).It is here PAR differs from other research methods in that the action or change is happening in reality and not as an experiment 'just to see if it works'.



Observation in PAR is the 'research' portion of PAR' where the changes as outlined in the Plan are observed for its effects and the context of the situation (Kemmis and McTaggart 1988: 13) . In this moment research tools, such as questionnaires, can be utilised to ensure proper scientific methods are followed and results have meaning. Observation and Action often occur simultaneously.

Concurrently existing with the moments of PAR are the Principles of PAR. It are these which set PAR apart from traditional research methods and other modes of Action Research. Other modes of Action Research such as the 'Technical or Practical' modes do not embrace all of these principles (Grundy, 1982:355-357). These principles are Participation and Collaboration, empowerment, knowledge and Social change.

The group undertaking PAR identifies a thematic concern through discussion and reflection. These concerns are integrated into a shared or common goal. The group agrees to collaborate and participate in a PAR project because of this integrated goal. The group and the members of the group are thus empowered to plan and act to create a social change. A change in practice is affected and observed using an appropriate research tool. The group critically examines the results and then the group has new

knowledge from which theory may be developed. This knowledge and theory may be focussed on the observed effects of the change affected or the processes which occurred, or both. These principles also form a cycle surrounding the inner Moments of PAR. These principles are espoused by the authors already cited. During the entire research cycle the group keep individual journals in which they observe and reflect upon the processes going on. These journals can become a source of data for analysis. A PAR project is only research when proper scientific methods are used to collect and examine data.

WHAT IS ACTION RESEARCH?

Over the last decade, action research has begun to capture the attention of teachers, administrators, and policymakers around the country (Mills, 2003). Educators at a variety of levels have embraced it as something that makes conducting research a more “manageable” task and that brings about results that are more informative and have immediate and direct application. But just what *is* action research? What does it look like? What does it purport to accomplish?

Action research is defined as any systematic inquiry conducted by teachers, administrators, counselors, or others with a vested interest in the teaching and learning process or environment for the purpose of gathering information about how their particular schools operate, how they teach, and how their students learn (Mills, 2003). More important, action research is characterized as research that is done *by* teachers *for* themselves. It is truly a systematic inquiry into one’s own practice (Johnson, 2005). Action research allows teachers to study their own classrooms—for example, their *own* instructional methods, their *own* students, their *own* assessments—in order to better understand them and be able to improve their quality or effectiveness. It focuses specifically on the unique characteristics of the population with whom a practice is employed or with whom some action must be taken. This, in turn, results in increased utility and effectiveness for the practitioner (Parsons & Brown, 2002). The basic process of conducting action research consists of four steps:

1. Identifying an area of focus
2. Collecting data
3. Analyzing and interpreting the data
4. Developing a plan of action (Mills, 2003)

Mertler, Craig A.

Action research : teachers as researchers in the classroom / Craig A. Mertler.
p. cm.

Includes bibliographical references and index.

ISBN 0-7619-2844-8 (pbk.)

1. Action research in education. I. Title.

LB1028.24.M47 2006

370'.7'2—dc22

2005008157



What is action research?

Action research can be described as a family of research methodologies which pursue action (or change) and research (or understanding) at the same time. In most of its forms it does this by

- using a cyclic or spiral process which alternates between action and critical reflection and
- in the later cycles, continuously refining methods, data and interpretation in the light of the understanding developed in the earlier cycles.

It is thus an **emergent** process which takes shape as understanding increases; it is an **iterative** process which converges towards a better understanding of what happens.

In most of its forms it is also participative (among other reasons, change is usually easier to achieve when those affected by the change are involved) and qualitative.

Available on line at <http://www.scu.edu.au/schools/gcm/ar/whatisar.html>

ACTION RESEARCH IN EDUCATION

GUIDELINES 2nd Edition

WHAT IS ACTION RESEARCH?

Action research is the term which describes the integration of action (implementing a plan) with research (developing an understanding of the effectiveness of this implementation). The original concept is sometimes attributed to Kurt Lewin (1890–1947).

Research often conjures a picture in people's minds of academics working in isolation for years proving theories. As distinct from academic research, those involved in action research participate in an ongoing testing and monitoring of improvements in their practice. They work in a collaborative way to identify issues in their organisation and develop processes for improvement. In education, action research is also known as teacher research. It is one method teachers use for improvement in both their practice and their students' learning outcomes. The central goal of action research is positive educational change.

This change impacts significantly on the teachers involved and how they teach. In a school setting, participants could include teachers, students, parents and community members. As in all forms of research, records are kept of the process and findings are published or presented to a wider audience.

Table 1: Comparison of academic or formal research with action research

	Formal research	Action research
training needed	extensive	little
goals	knowledge that is generalisable to a wider audience	results for improving practice in a local situation
method of identifying problems	review of previous research findings and extensions of them	problems currently faced or improvements needed in a set of classrooms or a school
literature review	extensive enquiry into all research previously conducted on this topic using primary sources	some primary sources but also use of secondary sources plus what practitioners are doing in other schools
sampling	random or representative preferably with large populations	students and/or members of the school community
research design	rigorous controls over long periods	flexible, quick time frame, control through triangulation
approach	deductive reasoning – theory to hypothesis to data to confirmation	inductive reasoning – observations, patterns, interpretations, recommendations
analysis of data	tests leading to statistical significance	generally grouping of raw data using descriptive statistics
application of results	theoretical significance	practical significance

Action research

From Wikipedia, the free encyclopedia

Action research is an interactive inquiry process that balances problem solving actions implemented in a collaborative context with data-driven collaborative analysis or research to understand underlying causes enabling future predictions about personal and organizational change (Reason & Bradbury, 2001). After six decades of action research development, many methodologies have evolved that adjust the balance to focus more on the actions taken or more on the research that results from the reflective understanding of the actions. This tension exists between

1. those who are more driven by the researcher's agenda and those more driven by participants;
2. those who are motivated primarily by instrumental goal attainment and those motivated primarily by the aim of personal, organizational, or societal transformation; and
3. 1st-, to 2nd-, to 3rd-person research, that is, my research on my own action, aimed primarily at personal change; our research on our group (family/team), aimed primarily at improving the group; and 'scholarly' research aimed primarily at theoretical generalization and/or large scale change.

Action research challenges traditional social science, by moving beyond reflective knowledge created by outside experts sampling variables to an active moment-to-moment theorizing, data collecting, and inquiring occurring in the midst of emergent structure. "Knowledge is always gained through action and for action. From this starting point, to question the validity of social knowledge is to question, not how to develop a reflective science about action, but how to develop genuinely well-informed action — how to conduct an action science" (Torbert 2001).