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Action research processes

in which I present and summarise documents on action research and related topics; using them, I identify further characteristics of processes which are effective in the hands of practitioners, including novices

This is the last of the chapters which summarise the publications included in this thesis. The topic — action research processes — in many respects draws together the two preceding chapters. The location here of this chapter reflects the integrating role of action research and its more recent development in my own theoretical and practical repertoire.

As I've said before, the separation into learning processes, change processes and action research is somewhat artificial. They overlap substantially. There can be little change without learning; and learning implies at least personal change. Action research involves both learning and change. As I say below, action research is action (or change) and research (or learning, or understanding). The research provides the learning. The action provides the change. In action research the two function together as a dialectic: action~research.

A selection from my writing on action research is gathered here in this chapter under seven headings:

- action research overall
- data collection and rigour
- characteristics of action research
- action research theses
- reviews
- grounded theory
- action research approaches to evaluation.

The chapter concludes with the identification of some of the features of effective and robust processes as illustrated by the various documents.

Action research overall

This section refers to a book-size document containing a course on action research, a blog-like collection of short pieces, and two overview papers on action research.

AREOL — action research and evaluation on line — is a double unit 14-week post-graduate course in action research which can be studied for credit at Southern Cross University. People enrolled in the course can access it on the web at <http://www.scu.edu.au/schools/gcm/ar/areol/areolind.html> or by taking part in an

email-based version offered twice a year. It is also available as a free public course.

Paper 38 — AREOL

Bob Dick (1997-2005) *Areol: action research and evaluation on line*. Copy of an email and web based course in action research. An index to the original materials is on the web at http://www.uq.net.au/action_research/areol/areolind.html

This substantial document consists of three papers which provide an orientation to an on line action research program and 14 weekly sessions. It is offered as a public program and is also available for credit to management postgraduates at Southern Cross University.

The email version runs twice a year, following the Australian semester system. It is (as I write this in the second half of 2005) in its 22nd incarnation.

In chapter 4 I described a number of papers about learning processes. The principles of change management were addressed in chapter 5. As far as possible AREOL makes use of similar ideas and processes about learning and about change in the context of an email-based course.

AREOL also builds in an action research approach in the way it is conducted. Action research therefore provides the content and much of the process. Below are some of the ways the course embodies learning and action research processes.

- I try to embody in the process the concepts and principles I address in the content — that is, I try to practise what I preach.
 - I aim for theory/practice integration. This is done by illustrating concepts with detailed examples and by providing a rationale for detailed processes. Participants are encouraged to have a project to which they can apply the
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ideas. For participants enrolled in the course for university credit the assessment is based on project work (see Appendix 4, discussed further below).

- Each weekly session includes suggestions for actual activities. In most weeks there is:
 - a “thought experiment” which subscribers can perform without leaving their computer
 - an activity which requires action or reflection on past actions
 - a team-based activity, for those who are subscribed as part of a team.
 - Each week I also post on the discussion list a trigger question. This acts both as a spur for discussion and a trigger for reflection. (I’ve included these triggers in paper 38.)
 - The content is “tiered”. Most sessions begin and end with a summary. This is then elaborated on in the session (sometimes first briefly and then in more detail). Most sessions contain links to further material on the web. Suggestions for further reading in the wider literature are often also provided.
 - The content is also linked to other literatures. For instance the sessions on action also draw on concepts from the change management literature.
 - Where possible the different sections are linked. For example the program as a whole can be viewed as an expansion of the statement that *action research is action and research*. Some sections deal with the action (or change), some with the research (and learning), and some with their integration (the “and”).
 - There is an accompanying discussion list. List subscribers are encouraged to raise questions about material they don’t understand or accept. I respond to these as required. Usually, so do other subscribers. (There is a breadth of experience amongst subscribers. This makes good use of the talents of the more experienced subscribers.)
 - Some use is made of *strategic concepts* — concepts which give subscribers another perspective through which to experience the world. For instance
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many participants find the notion of dialectical processes opens up a new way of thinking about their interpersonal communication.

- Fine tuning of ideas occurs in the discussion on the discussion list. This happens, for example, in the responses I and others make to questions raised there. In addition there is an evaluation at the end of each program. (The results of the evaluation of AREOL 21, in early 2005, is included as Appendix 5.) In the earlier programs this was done both at the midpoint and the end of the program. More recently it has been done only at the end, as the changes have become more minor as AREOL progresses.
- I earlier described (papers 05 to 08) a fourth year class in social consultancy. As in that unit, the evaluation collects suggestions to be conveyed to the next cohort.

There is also continuous refinement during the program.

Continuous refinement

An important aspect of AREOL is the regular revision of both content and process in the light of the discussion and evaluation. For example, in recent times the most common negative theme in evaluations has been the amount of reading to be done, especially in the early weeks of each program.

My first attempt to deal with this was to notify intending subscribers of the amount of time required. I assumed that if their expectations were more realistic there would be less dissatisfaction. This helped but wasn't enough.

I then asked subscribers to send a brief biography to me. I collated the biographies and mailed them out as a single file. This reduced traffic substantially. It eliminated a lot of introductory emails; mailing list participants often introduce themselves when they join a list. It also reduced the discussion which resulted from responses to the introductions. Again this helped, but again

not sufficiently. Some dissatisfaction with the amount of early traffic on the discussion list continued.

In the second half of 2005 I've moderated the discussion list. This enabled me to intercept off-topic posts or posts intended for an individual. It also made it possible for me to change HTML posts to plain text, and reduce the amount of quoting from previous posts.

When subscribers send posts to the list in plain text and with only necessary quoting I remove them from moderation.

When I evaluate the current program I will know whether the dissatisfaction with early traffic is further reduced. If not, I will explore additional strategies.

Assessment

Some subscribers enrol in AREOL for credit at Southern Cross University. For them there is also an assessment package (see Appendix 4). This provides further opportunities for learning.

- The assessment is project based. Subscribers have a project, to which they relate each of the assignments. This encourages theory/practice integration and helps to develop relevant skills.
 - Three small assignments provide more opportunity than one or two assignments would for subscribers to apply learning from earlier assignments to later assignments. In addition, later assignments are more heavily weighted in the marks given.
 - Subscribers can negotiate a different assessment, for instance a rearrangement of the three assignments, different due dates, and so on.
 - To increase learning from assignment to assignment I provide very detailed feedback. I commend strengths and offer suggestions for improvement rather than criticism. My intention is that the feedback is a pleasant experience.
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- I encourage subscribers to exchange assignments with one another so that they can learn from each other's experience. (My feedback is included, but not the grades.)
- It is a requirement that each assignment is accompanied by the author's own evaluation of it, and by a statement of what they learned. Critical reflection is thus encouraged.

In summary, both the content and the process of the unit embody the principles of learning, change and action research.

Paper 39 is also a collection. It consists of brief papers posted semi-regularly on an email discussion list.

Paper 39 — Occasional pieces

Bob Dick (1997-2002) *Occasional pieces in action research methodology*. Occasional discussion pieces appearing on the armnet-l mailing list. Available on line at <http://www.scu.edu.au/schools/gcm/ar/arm/op000.html>

This document consists of 28 brief discussion pieces which appeared on the email list ARMNET-L for some time. They deal with methodological issues in action research or related methodologies.

As with the trigger questions in AREOL, the purpose was to stimulate personal reflection and discussion. In both instances, the discussion seemed richer when the reader experienced some dissonance (Festinger, 1957)¹ without feeling pushed towards a particular conclusion or opinion. The intended effect was similar to unfreezing (as Lewin, 1952, used the term), or in the personal change literature, reframing (for instance, Watzlawick, Weakland and Fisch, 1974).

I'm still exploring ways of achieving this. It seems dissonance can be created, for example, by

- identifying some inconsistency between beliefs and behaviour (in Argyris's terms this is the difference between espoused theory and theory-in-use)
- showing that different people pursuing similar outcomes (such as some action researchers and some evaluators) give different rationales
- as I've discussed elsewhere in the explication, the use of strategic concepts which give people an additional perspective on their experience; I pick this up in more detail later
- offering a view which at first is counter-cultural but which people may on reflection receive sympathetically
- disclosing my own experience of dissonance in a way which encourages readers to identify examples in their experience.

Some people may experience the dissonance as a personal threat. They may then be motivated to defend themselves against the threat. The result may be that the person becomes locked even more solidly into existing beliefs. If the threat can be reduced the dissonance is more likely to be constructive.

It helps that I don't have a strong wish to persuade people to my point of view. I also use certain strategies to further reduce the sense of threat people might experience. The following examples are taken from AREOL or the occasional pieces.

- I begin each occasional piece with "Speaking only for myself ...". As I say in piece 15:

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1. *Cognitive dissonance* is the feeling of discomfort which we experience when we realise that we hold two incompatible cognitions — for instance that we eat unwisely while knowing that this is harmful in the longer term. The theory of cognitive dissonance holds that when we experience dissonance we are motivated to change one or other of the cognitions so that they are more consistent.
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Speaking only for myself ... Which is to say, I'm not trying to argue for a point of view. I'm thinking aloud, so to speak. I don't much mind if you agree with me or not. I'll be delighted if you join the conversation.

- I make my own doubts and indecision apparent: "I sometimes wonder if ..."
- I acknowledge that others have come to different conclusions: "If the best of philosophers can't agree ..."
- I label my own belief a bias or prejudice: "I have some biases here".
- I explicitly encourage people to make their own decision: "I assume you will make up your own mind".

The principle is akin to opening doors which people didn't know about, leaving it entirely to them if they enter.

The topics covered in the occasional pieces are as follows.

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|----------------------------------|---------------------------------|
| ■ "Good" research | ■ Emergent methodologies |
| ■ What is action research? | ■ Participation (2) |
| ■ Critical thinking (2 sessions) | ■ Rigour (2) |
| ■ On maps and territories | ■ Qualitative and quantitative |
| ■ The ladder of inference | ■ Grounded theory (5) |
| ■ Abstraction, and theories | ■ Generalisation (3) |
| ■ Cycles within cycles | ■ Varieties of action research |
| ■ Cyclic critical reflection | ■ Grounded theory revisited (4) |

As with AREOL, the next two papers deal explicitly with the two dimensions of action research, *action* and *research*. (If you include the "and" which integrates the two there are three dimensions.)

Paper 40 — Action and research

Bob Dick (2001) Action research: action and research. In Shankar Sankaran, Bob Dick, Ron Passfield and Pam Swepson, eds., *Effective change management using action learning and action research: concepts, frameworks, processes, applications*. Lismore, NSW, Australia: Southern Cross University Press. [21-27]

This is Chapter 2 of the book, written specifically to provide an overview of action research.

Each of the editors also reviewed contributions to one section of the book and provided an overview for that section.

Paper 41 — Action and research (2)

Bob Dick (2002) Action research: action and research. A paper prepared for the seminar "Doing good action research" held at Southern Cross University, Monday February 18, 2002.

This paper is written in the style of a frequently asked questions (FAQ) file. It considers the sources of research rigour, action, and the integration of both, in the answers to the questions.

The introduction to the first of these documents says ...

Action research (AR) is true to label. It pursues both action (change) and research (understanding) outcomes. It achieves change through its participative approach, often in conjunction with other change processes. The research is achieved by being responsive to the situation and by searching strenuously for disconfirming evidence. At the heart of AR is a cycle which alternates action and critical reflection. Action and research enhance each other.

The paper then deals in turn with the three dimensions. Participation supports commitment and therefore action. A search for disconfirming evidence supports

rigour and therefore good research and understanding. Within each action research cycle and action and the research are integrated.

Paper 41 covers the same topics in the form of a “frequently asked questions” (or FAQ) file. I sometimes offer it to enquirers as an overview of action research.

Both papers were written with the likely expectations of readers in mind. People trained in experimental methods have a mental model of what good research looks like. It’s not surprising that their mental model is based on criteria for good experimental research. Such people expect to see a precise research question, quantification, random sampling, objectivity, explicitly causal hypotheses, and probably a control group. Both papers therefore explain the need for flexibility in a process which is also intended to bring about change. Both also describe the sources of rigour which fit well with a flexible change process.

In addition, paper 41 explicitly describes action research as an approach built on top of a natural process of planning, acting, and noticing what happened. There is a danger with this approach. Practitioners first encountering action research sometimes say “Oh, I already do that”. However, their reflection is seldom as critical, regular or systematic as it might be. The paper therefore also emphasises the critical reflection which is a source of rigour.

There’s an interesting discussion on this last point in Bob Williams’ interview of me (Williams, 2004). Other people who have commented on the naturalness or otherwise of action research include Ned Kock and his colleagues (Kock, McQueen and Scott, 1997), Sue Johnston (1994), and Will Allen. They also address the issue of action research rigour.

In the next section rigour is the main emphasis.

Data collection and rigour

There is a sizable literature critical of action research, partly for reasons already canvassed above. To identify the perceptions that action researchers face, I summarise some of it in the following paragraphs.

As early as 1972 Michael Foster was able to say that much action research was either research without action or action without research. In 2004 some critics still remain suspicious of it as a “theory-free zone” (McWilliam, 2004:114). Graham Room (1986) talks about the tensions between action and research. Graham Webb (1996) comments on the ideological slant to much action research literature. D.P. Dash (1998) identifies the many variations of action research as a source of confusion (and, I would add, of some sectarian jealousies.) Kock, McQueen and Scott (1997) identify and respond to some common criticisms of action research by quantitative researchers.

Davydd Greenwood (2002) laments the “sloppiness” of much action research. In his response to Greenwood, Olaf Eikeland (2003) agrees. Richard Baskerville and Trevor Wood-Harper (1996) believe that poor reporting is one of the sources of the perception of low rigour. Karin Breu and her colleagues (Breu, Hemingway and Peppard, 2004) report a study where undue influence from practitioners undermined research quality.

I agree that these criticisms are a reflection of the quality of some action research. It is against this climate of scepticism that arguments for rigour can usefully be made.

Having spent much of my academic life in psychology schools I’m accustomed to such scepticism. It served as a motivation to ensure that my own action research was defensible. It also influenced my supervision of action research theses. I gave attention to helping candidates justify their choice of action research as their research methodology.

The following monographs and papers sample my response to this situation. I begin with two monographs on convergent interviewing and other data collection methods. I follow this with a paper specifically intended for thesis candidates and then refer to two papers which specifically address issues of rigour.

Monograph — *Convergent interviewing*

Bob Dick (1990) *Convergent interviewing*. Brisbane: Interchange.

This monograph provides a rationale and description of an approach to interviewing for diagnosis and theory building. Each interview is open-ended to begin with. More detailed probe questions are developed as interviews proceed, to seek exceptions and explanations of data already provided.

Convergent interviewing combines a structured process and unstructured content. The interpretations which result are data-driven rather than determined by the questions asked. The key features are as follows.

- A maximally diverse sample is prepared. When this has been done, very small sample sizes have yielded good information.
 - Within each interview after rapport is established a very open-ended question is asked: for example “Tell me about ...”. The interviewer, without asking further questions, encourages the respondent to continue talking for perhaps 45 minutes.
 - Towards the end of the interview (though not always in very early interviews) probe questions are asked. These probe questions seek out
 - exceptions to apparent agreements from earlier interviews, and
 - explanations for apparent disagreements.
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- Ideally, the interviewing is done by pairs of interviewers, each of whom interviews different respondents. After each pair of interviews the interviewers compare results and develop probe questions. A single interviewer can instead compare adjacent interviews.

Figure 6.1 illustrates the sequence of a convergent interviewing data collection.

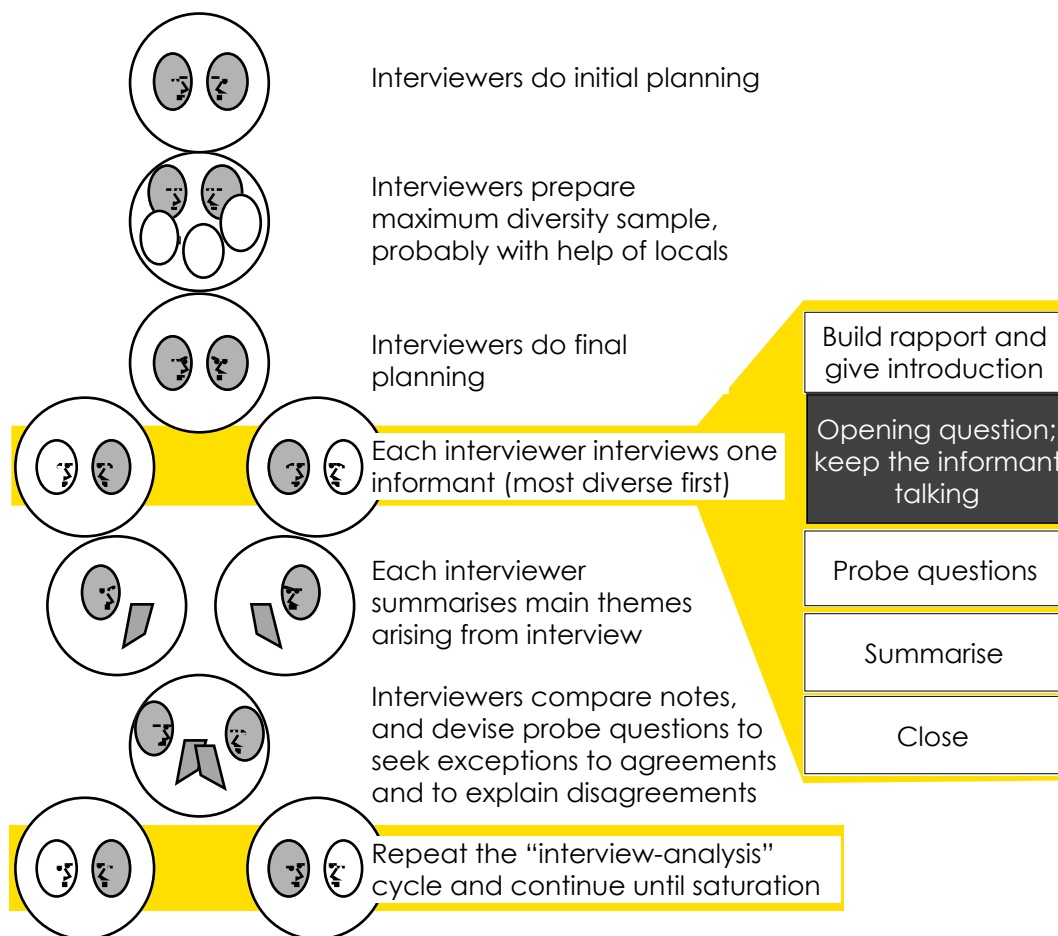


Fig. 6.1 Convergent interviewing

Of the processes I've designed, convergent interviewing has been the most used in published literature. This has increased recently, especially in the management literature; perhaps this is due to the favourable mention in the

textbook *Qualitative market research* (Carson, Gilmore, Perry, and Grønhaug, 2001).

I have been able to identify three studies which researched convergent interviewing as a research methodology. These are briefly described below.

The earliest was by Chris McDowell and his colleagues (McDowell, Hine and Bakker, 1996). They conclude that there are advantages in the “speed of data gathering and the great confidence that researchers can have in the quality and relevance of the data. Any theory or proposition which evolves out of a process such as this is bound to be relevant and easily understood by the people to whom it applies” [p 13]

Sally Rao and Chad Perry (2003) used it for what was essentially pilot research in an area where theory is sparse. They concluded that it is “more appropriate than some other qualitative methods to investigate under-researched areas” and that it “provides a way of quickly converging on key issues in the area, an efficient mechanism for data analysis after each interview, and a way of deciding when to stop collecting data” [p236].

Andreas Riege and Godwin Nair (2004) acknowledged the diversity of convergent interviewing and the varied applications to which it is suited. After collecting data from 40 users of convergent interviewing they describe it as “relatively uncomplicated but rigorous” [p 73]. They also offer some useful variations which are consistent with the original purpose.

I had in fact hoped that some critiques might allow me to refine my descriptions of the technique when I next revise the monograph. The most negative critique was in a thesis by Scott Weaven (2004).² He reported that convergent interviewing:

- requires prior theory. This is plainly incorrect, as Wendy Attwater (2004a) recognised when she used convergent interviewing for theory building. The

2. I should also mention that despite these apparent misgivings he used convergent interviewing for data collection in his thesis.

technique *can* be used to test theory as well as develop it. That doesn't prevent it being used to develop theory, which is one of the uses for which I developed it.

- is expensive of time. This is true (of all interviewing) compared, for instance, to mail surveys. My own experience is that, compared to other interviewing methods convergent interviewing can yield good data from smaller samples if those samples are well prepared.
- requires skilled interviewing. This may be Scott Weaven's experience. On the other hand, on occasions I've used novice interviewers effectively after half a day's practice. In one unreported community survey I carried out, older-year primary school students interviewed other students using convergent interviewing.

Other studies have used it as the data collection method for soft systems methodology (Falk,2001) and for grounded theory (Attwater, 2004b).

In partial summary, convergent interviewing can be said to combine rigour with flexibility. The rigour arises specifically from a structured means of developing probe questions. Convergent interviewing also has access to other sources of rigour (for instance those described in Creswell, 2002) available to qualitative data collection methods generally. The flexibility is to be found partly in the way those probe questions allow responsiveness to the data. The continuous refinement of process and content as the interviewing proceeds is also helpful.

The probe questions are developed through a dialectical process. Researchers compare either one interview to another or one interview to the emerging theory. Where apparent agreement is found, exceptions are sought. When those exceptions are unearthed, explanations for them are requested.

Other important features are ...

- that informants are involved in interpreting the data
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- that data are interpreted as they are collected, rather than being accumulated until later
- that the refinement of both process and content is driven by the data collected; this is the source of a flexible responsiveness to the research situation.

Some of these features of convergent interviewing are also to be found in other processes which I've reported. The following three papers explore the nature of rigour in action research.

Paper 42 — Rigour in data collection

Bob Dick (1999) Rigour in data collection. An unpublished paper prepared as a resource for thesis candidates using interviewing for data collection.

Common threats to rigour during interviews are identified. For each threat, several ways are described of reducing or eliminating the threat.

The paper describes part of the chain of data collection and analysis, from the event being reported to the eventual interpretation and reporting. At each of the identified steps, threats to validity are identified. For each threat several ways of reducing the threat are briefly recounted. The analysis isn't intended to be encyclopaedic. It is instead offered as a model which researchers can use to analyse other forms of data collection.

Paper 43 addresses the issue of validity by comparing action research to other research paradigms.

Paper 43 — Appropriate validity

Bob Dick and Pam Swepson (1994) Appropriate validity and its attainment within action research: an illustration using soft systems methodology. Paper presented at World Congress Three on Action Learning, Action Research and Process Management, University of Bath.

Action research is compared to experimental and ethnographic approaches. Similarities and differences between action research and experimental research are identified. A version of soft systems methodology is used as a vehicle for discussing ways in which validity in change-oriented research can be achieved.

The comparison of action research to experimental research was largely written by Pam Swepson. It was based partly on her early PhD research (Swepson, 1999). The section of the paper on the variant of soft systems methodology was largely written by me.

Pam's argument is that often insufficient attention is given to the research context and purpose. Good research is designed to fit the situation. I agree.

I use a variant of soft systems methodology (Checkland, 1981, 1999) to demonstrate the use of dialectic as a source of rigour. By adopting two different perspectives and reconciling the tensions between them, a researcher can develop a deeper understanding. In this SSM variant³ I set up four dialectics in turn, alternating between both poles of the dialectic until satisfied:

- between an actual situation and a description of its key features
- between that description and alternative ways of achieving the same outcomes as the description

3. This SSM variant has been used in practical situations by Tay Boon Hou and his colleagues. For instance see Sankaran, Tay and Cheah (2004).

- between those alternatives and the actual situation, to identify changes that are feasible improvements
- during implementation, between the planned changes and the reality of the situation.

Dialectic is the principle which underpins delphi and some conflict resolution as described above in paper 22. I return to it in paper 59 and in chapter 7.

In paper 44 I address the theme of a conference: trustworthiness and rigour. I explain to an audience of qualitative researchers how these are achievable in action research.

Paper 44 — Trustworthiness and credibility

Bob Dick (1999) Sources of rigour in action research: addressing the issues of trustworthiness and credibility. A paper presented at the Association for Qualitative Research Conference "Issues of rigour in qualitative research" at the Duxton Hotel, Melbourne, Victoria, 6-10 July 1999.

Action research is conceptualised as nested cycles, in each of which action informs understanding, which in turn informs action.

In this paper action research is identified as an *emergent* methodology, taking its final shape slowly as it is applied. In this respect it shares some characteristics with grounded theory, especially in Barney Glaser's hands and particularly in Glaser's 1992 response to Anselm Strauss and Juliet Corbin (1990).

The purpose of action research is defined in paper 44 as "to research action, and to action (that is, act on) research" (p 44-4). It does this within a cyclic process in

which action informs understanding, which in turn informs action. Importantly, the cycles operate over many different time periods. There are nested cycles: cycles within cycles within cycles. Within each of these many cycles, assumptions and theories and plans can be tested by being put into action.

Rigour is also an emphasis of the monograph *Rigour without numbers*. As with some earlier papers, the monograph emphasises the use of dialectic processes for data interpretation. It also addresses some of the ways in which theory and practice can be integrated.

Monograph — *Rigour without numbers*

Bob Dick (1999) *Rigour without numbers: the potential of dialectical processes as qualitative research tools*, third edition. Brisbane: Interchange

The early part of the monograph builds an argument that quantitative and qualitative methods have different strengths. They are appropriate for different purposes. Sometimes qualitative methods fit the complexity of reality better. Sometimes they sacrifice rigour to achieve this.

Dialectical methods are then offered as a way of increasing the rigour of qualitative methods. Their use is illustrated by delphi, convergent interviewing and conflict resolution processes.

The final section of the monograph shows how theory and practice, rigour and relevance, can be better integrated. Redesigned processes for focus groups and group feedback analysis demonstrate how this may be done.

I've already discussed dialectic, especially in paper 24 on the delphi process. I also return to it later. Here I wish to draw attention to another feature of this monograph — a description of some of the ways in which theory and practice can be integrated. In the chapter "Integrating theory and practice" [p 59] the monograph examines two processes. The processes are Frank Heller's group

feedback analysis, GFA (Heller, 1969), and focus groups (for instance Morgan, 1988). The processes are modified to improve the integration of theory and practice.

Heller describes GFA primarily as a research tool. A group of people respond to a survey questionnaire. The results are then fed back to them immediately (or more usually after a lunch break) for interpretation. I describe a variation in which the questions are asked as well as answered by the group. This increases involvement and relevance. I then capitalise on participants' increased involvement by also facilitating action planning by them.

A common organisation development technique is survey feedback (French and Bell, 1999). It was more common in the 1980s but is still in use; for instance see Sharkey and Sorenson (2002). In survey feedback a written survey is completed by all organisation members (or by a sample which taps all levels and parts of the organisation). After analysis by the researcher, results are fed back to everyone who took part. Action planning then follows.

There are several advantages to using GFA instead of survey feedback, including the following:

- there is almost no time delay between answering the questions and seeing the results
 - participants can discuss the reasons for the answers they gave while those answers are still fresh in their mind
 - team-specific issues are not lost in overall results, but can be acted on by the team
 - the results can be collated by the participants, a group at a time, increasing transparency
 - participants are directly involved in asking the questions, as well as answering them and interpreting the answers
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- in action planning, participants can identify which actions they can take, and which actions they would like to see others take; this increases participant involvement in the changes which result.

The first three advantages apply to conventional GFA as well as the variation I've described. The final three advantages apply only to the variation.

Participant involvement need not compromise the research outcomes of the process. The researcher may also include questions to be answered. The analysis can consist (as with Heller's version) of identifying measures of central tendency and spread in the distribution of responses. This allows the results to be compared and collated across teams.

Focus groups are a form of group interview. Most used in marketing research they can also gather attitudinal information on other topics. A facilitator guides a discussion of some nominated topic. The discussion is recorded (often on video) and analysed in depth. Some skill is required of the facilitator, as Krueger and Casey (2000) explain. It's usual for a homogeneous group of between 8 and 12 participants to take part (Edmunds, 1999). The homogeneity reduces conflict.

The variation I describe is more structured. Participants are given thinking time before the discussion begins. Each participant then provides her or his answer to the opening question, while others listen for themes. After the themes are collected the participants interpret them. If action is a desired outcome, the interpretations then guide action plans which the participants develop.

The structure allows facilitation by novices. It also allows larger and more diverse groups. For instance in a recent change program, some colleagues and I⁴ coached organisational members who ran focus groups to define organisational needs. The group size was between 20 and 24. Each group was selected to be a maximally diverse sample: the organisation in microcosm.

4. The colleagues were Kerry Cronan, Ira Smith and Dick Hicks.

My colleagues and I tested the results of the focus group against interviews which we conducted. We also invited comment to us from individuals in the organisation and from a reference group (itself a maximum diversity sample). There was good agreement.

GFA and focus groups are explained in more detail in the two papers which follow. Paper 45 describes a modified GFA process. Paper 46 does the same for focus groups.

Paper 45 — Small group decision making

Bob Dick (1990) *Small group decision-making: a robust version of Heller's group feedback analysis*. Chapel Hill: Interchange. Revised from an earlier drafts written in 1988. There have been minor corrections since 1990.

The paper provides a rationale for small group decision making, and describes in some detail how it might be done.

Paper 46 — Structured focus groups

Bob Dick (1999) *Structured focus groups*. Chapel Hill: Interchange (mimeo). An unpublished paper first written in 1993 and revised in 1994 and 1999.

This paper was written as a resource document for helping people learn to facilitate focus groups. It describes the process for a structured form of focus group.

As I've already dealt with these processes above I won't give them further attention here. Instead I'll move on to considering three papers which discuss certain characteristics of action research.

Characteristics of action research

These papers discuss in turn the nature of action research as meta-research, emergent research, and a source of empowerment. First, here is the paper on action research as meta-research (paper 47).

Paper 47 — AR as meta-research

Bob Dick (2002) Action research as meta-research. A paper prepared for the International Sociological Association Conference, Brisbane, 7-13 July 2002.

After a brief description of action research the paper explains that researchers can use action research to improve their research practice.

Intended for an audience unfamiliar with action research, the paper first presents an overview of the methodology. It then explains that practitioners learn from experience using an informal process which resembles action research. Researchers can therefore also use action research to improve their practice as researchers — that is, action research can be meta-research. With regular and critical reflection it can be expected that learning from experience would be more rapid and more effective.

It's a puzzle to me that this isn't a more common topic in the action research literature. I would have assumed that people who use action research would also use it to research their action research. Presumably they do; but few have written about it until recently. Some examples ... Sally Ebest (2001) talks about action research on action research. There are elements of action research as meta-methodology in Bill Torbert's (2001) "first person research", as I mention in paper 47. (See also Chandler and Torbert, 2003). Nick Wright (2004:81) sees action learning "as an overarching approach rather than a specific

methodology". Dennis List (2004) reports plans to use action research as a meta-methodology to refine his futures methodology.

This may be partly a matter of terminology. The term "meta-methodology" isn't in wide use. Nor is the word "emergent" often used to describe action research methodology, though it clearly is.

Paper 48 — Emergent methodologies

Bob Dick (2001) Making the most of emergent methodologies: a critical choice in qualitative research design. A paper prepared for the Association for Qualitative Research conference, Melbourne, 5-7 July.

Characteristics of grounded theory and action research are identified. Ways are then described of combining the best features of each.

Barney Glaser (1998, 2001, and especially 1992) vigorously defends a form of grounded theory that is emergent. He contrasts it with what he calls hypothesis-testing research, by which he means research which tests hypotheses derived from prior literature.⁵ In this paper I use a comparison with grounded theory to identify some of the ways in which action research is emergent. Based on this I also suggest aspects of action research which might repay more attention.

(Papers 51, 60 and 61, below, include material on grounded theory and are also relevant here.)

Unlike the topics of meta-research and emergence, emancipation is well covered in the action research literature. A well-cited example is Wilfred Carr and Stephen Kemmis's 1983 book *Becoming critical*. In the next paper Gerry Roberts

5. Most research is in a sense hypothesis testing. The question is where the hypotheses come from, theory or data. For this reason I prefer the labels "theory driven" and "data driven".

and I add to this literature. We identify six choices which a researcher faces and which impact on the experience of emancipation by participants.

Paper 49 — Emancipatory choices in AR

Gerry Roberts and Bob Dick (2003) Emancipatory design choices for action research practitioners. *Journal of Community and Applied Social Psychology*, 13(6), 486-495.

Six choices which can influence the emancipation experienced are identified. For each choice we discuss ways in which emancipation can be achieved without unnecessary sacrifice of other research qualities.

In writing the paper we drafted three choices each and then refined each others' work.

We identify six important choices which can influence whether participants experience a process as emancipatory:

- whether the process is data or theory driven,
- the level of skill of practitioners in using emancipatory processes,
- an action emphasis versus a research emphasis,
- the level of sophistication of the methodology in use,
- the style and extent of participation, and
- differing epistemic beliefs especially between participants and practitioners.

Many of these choices relate to the “robust processes” theme of this explication. The more robust the processes, the easier it is for participants to be engaged fully in them. These are choices which action researchers inevitably face, explicitly or implicitly. When they are explicit a more informed choice can be made. As well [p 49-3]:

Choices can often be made which both expand participant emancipation and at the same time achieve other advantages appropriate to the research context. At other times the emancipatory choice may be made, but disadvantages of that choice may be minimised in some way.

The point I wish to make here is that explicit choices are also more emancipatory for the researcher than are prescriptions. Prescriptions may generate either blind observance or a reaction against them. Choice encourages reflection.

Such design choices also face thesis candidates.

Action research theses

The target readership for the five papers in this section consists of thesis candidates and to some extent their supervisors. Some of these papers, and especially the paper which immediately follows, were intended as guides for candidates who may be more familiar with other approaches. A further purpose of the document was to help candidates justify their thesis to examiners who might not be familiar with action research.

Paper 50 — Action research theses

Bob Dick (1993) *You want to do an action research thesis? — How to conduct and report action research.* (Including a beginner's guide to the literature). Chapel Hill, Qld.: Interchange. [Also Buckingham: IMC Courseware]
Available on the web at <http://www.scu.edu.au/schools/gcm/ar/arp/arthesis.html>

After describing action research, the document addresses in turn:

- the advantages and disadvantages of action research
 - choosing an approach from the many varieties of action research
 - carrying out the research project and
 - writing the thesis.
-

A substantial bibliography, partly annotated, is then included. An afterword concludes the thesis with some personal reflection.

I intended the document to be pluralistic. There are several research paradigms. Action research is only one of them. Within action research there are many varieties. (When I revise the document I'll add several more). Within these varieties there are many ways of operationalising the collection and analysis of data and the involvement of participants. Each of these represents choices. Any of those choices may be valid depending on the circumstances.

I also tried to encourage making choices suited to the purpose and research situation. To this end I suggested as one possibility that the thesis might be structured around the contribution to knowledge.

Choice is even more explicit in the next paper.

Paper 51 — Theses and dissertations

Bob Dick (2002) Action research for theses and dissertations. *The Learning Organization*, 9(4), 159-170. This invited paper first appeared in O. Zuber-Skerritt, ed. (2000) *Action learning, action research and process management: theory, practice, praxis*. Brisbane: Action Research Unit, Faculty of Education, Griffith University.

The paper is structured around eight design choices which a thesis candidate can usefully consider.

Final sections identify some traps in doing action research. Ways of escaping the traps are suggested.

Implicitly or explicitly the choices identified are made when a research candidate settles on a research design. Some of the choices are covered in the literature. Some are not. I suspect some of the latter are not usually recognised as choices. I think almost all of these choices could usefully be given more attention than they usually are.

The paper also suggests that a candidate may use an action learning approach as a useful complement to action research. The next paper enlarges on that topic as it applies to supervision at a distance.

Paper 52 — Email thesis supervision

Bob Dick and Alan Davies (1995) Thesis supervision at a distance: the potential of email. A paper presented at the Open Learning Conference, Ballina, 4-6 September 1995.

Based on experience supervising theses at a distance by email, the paper identifies the major advantage of overcoming limitations of time and space. Disadvantages of email supervision are also described, and some ameliorating strategies offered.

I co-authored the paper with Alan Davies, with whom I also co-supervised by email a number of theses. We planned the paper together. We exchanged drafts as we revised them until both of us were happy with the final product.

The paper illustrates two strategies which (I will argue) increase the robustness of a process.

- Where there are unavoidable constraints, look for ways of capitalising on them. Try to make assets of them rather than liabilities.
 - Where disadvantages remain, look for ways of reducing or removing them or (where this isn't possible) ameliorating their effects.
-

Paper 53 — Action research theses

Bob Dick (1995) Action research theses. A resource paper accompanying AREOL, the on line course in action research. Available on line at <http://www.scu.edu.au/schools/gcm/ar/arp/phd.html>

The paper describes some of the reasons for choosing an action research methodology in thesis research. It asks a series of questions which address both action and research outcomes.

The paper illustrates two ways in which a novice can be guided without being unduly constrained. The questions scattered through the paper serve as a checklist of topics which warrant attention. They don't prescribe an answer.⁶ Examples are provided of some of the ways questions might be answered, without presuming this is the only way.

In the paper I mention Paul Ledington's statement that a thesis is a large work with one new sentence in it. This serves as a strategic concept⁷ by emphasising that the purpose of most of the thesis is to justify the contribution to knowledge.

The next paper directly addresses the fear that action research is too risky a methodology for a thesis.

Paper 54 — Is action research too risky?

Bob Dick (1994) Action research: is it too risky for theses? Address to Social Psychology Study Group, School of Behavioural Science, Griffith University, May.

6. As I reflect on this paper I now recognise places where a reader might interpret a statement as prescriptive. If I were to revise it I would try to make clear that this is not my intention.
 7. As discussed earlier this is a concept which introduces a new way of perceiving a situation.
-

This is a transcript of an unscripted talk. In it, I describe action research as it applies to theses and dissertations. I do so in ways which are intended to make sense to an audience of experimental and quantitative researchers.

Much of the audience was expected to be sceptical. They seemed likely to view action research as poor research, or at least risky for thesis purposes. The paper illustrates a number of ways of increasing robustness in the face of scepticism. In particular it

- immediately surfaces the scepticism so that it becomes discussable. For example the topic raises the question of possible risk in using action research for thesis purposes.
- identifies common ground. For example it shows that experimental and action research theses both seek to make a contribution to knowledge.
- uses strategic concepts to open up possibilities not previously thought about. For instance it defines a thesis as a large piece of work with one original sentence in it.
- uses anecdotes to make a point. For instance it relates how I found experimental research a poor fit to consultancy situations though I use it in laboratory situations.
- adopts a superordinate view such that apparently contradictory approaches can be reconciled. For instance, different sorts of research questions require different methodologies to answer them.

In the next section I very briefly present some reviews I have written.

Reviews

There are four papers here. The first two are book reviews. These are followed by a review of recent action research literature. Finally there is a response to a

discussion paper in an action research journal. All four of these papers were invited. They are included for the background they provide on the action research literature and for some of the themes to be found there.

Paper 55 — Utopia made practical

Bob Dick (2001, October). Utopia made practical? Action research comes of age. Review Essay: Peter Reason & Hilary Bradbury (Eds.) (2001). *Handbook of action research: participative inquiry and practice* [32 paragraphs]. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research* [On-line Journal], 3(1). Available at: <http://www.qualitative-research.net/fqs-texte/1-02/1-02review-dicke.htm>.

An invited book review of the first edition of the *Handbook of action research*.

Reviews inevitably say as much about the reviewer as about the reviewed. Here, though, my interest is in what the authors of the 45 chapters of the *Handbook* had to say.

What is evident is the great variety of methods now subsumed under the “action research” banner. I would like to think that this represents a greater self-assurance on the part of action researchers. They now have less need to compete against one another.

Paper 56 — Review: The essential U&I

Bob Dick (2002) The essential U&I. Review of Wadsworth, Yoland, ed. (2001) The essential U&I. Melbourne: Victoria Health Promotion Foundation. ISBN 0-9579990-0-3. [pp 225 + xi] Au\$27.50. *ALAR: Action learning and action research journal*, 7(2), 106-112.

An invited review of a report into a highly participative study in the mental health field.

Yoland Wadsworth is a highly skilled researcher and practitioner. The culture — and as I suggest, the archetypes — in the field of mental health nevertheless made it difficult to achieve good outcomes. Yoland's report demonstrates the high level of flexibility and responsiveness that was required. In re-reading the report it occurs to me that initial unfreezing is often required in such strong cultures.

Paper 57 — Action research literature

Bob Dick (2004) Action research literature: themes and trends. *Action Research*, 2(4), 425-444.

An invited review of recent action research literature.

As I note in this review, the most prominent feature of recent action research literature is the growth of strength oriented approaches such as appreciative inquiry. Such approaches can increase robustness of interventions by reducing the need for defensiveness.

In contrast, high reliability organisations pay a lot of attention to error and failure, though not in a defensive way. Karl Weick and Kathleen Sutcliffe (2001) found that organisations which can least afford error pay constant attention to the errors which occur. They reward people who admit to error rather than punishing them for the error.

It appears that the problem may not be the “deficit oriented approach” that appreciative inquirers such as Jim Ludema, David Cooperrider and Frank Barrett (2001) criticise. It may be the defensiveness which appreciative inquiry sidesteps with its positive approach. As Weick and Sutcliffe demonstrate there are other ways of avoiding defensiveness. In some settings it can be dangerous to ignore problems and issues.

Paper 58 — Rehabilitating action research

Bob Dick (2003) Rehabilitating action research: response to Davydd Greenwood's and Björn Gustavsen's papers on AR research perspectives in *Concepts and Transformation*, 7(2), 2002, and 8(1), 2003. *Concepts and transformation*, 8(3), 255-263.

An invited response to a paper lamenting the state of action research.

Paper 48 largely endorses the views that Davydd Greenwood voiced in his critique of action research. In the final section of the paper I summarise many of the features of action research. As I've already mentioned many of them previously I won't address them again here.

The remaining papers in this chapter deal with the interface between action research and other approaches: first grounded theory, and then evaluation. My understanding of action research has been deepened by my reading and my consultancy experience in both areas.

Grounded theory

There are only two papers here. One is an overview of grounded theory, suggesting some ways of improving its efficiency by incorporating processes from action research. The other reverses adopts the reverse strategy. It asks what action researchers can learn from grounded theorists.

Paper 59 — Grounded theory

Bob Dick (2000) Grounded theory: a thumbnail sketch. A paper written as a resource document for thesis candidates using grounded theory for data analysis. It is available on the web at <http://www.scu.edu.au/schools/gcm/ar/arp/grounded.html>

This paper guides novice grounded theory researchers through the grounded theory processes of coding, memoing and sorting. In addition it suggests how data collection and interpretation can be more easily done if dialectic processes are incorporated for data collection and analysis.

I suspect that if I had a counter on the web pages I maintain at the Southern Cross University action research site

<http://www.scu.edu.au/var/www/scu/schools/gcm/ar/arp/grounded.html>

this would be the single page which would record the most hits.⁸ It's certainly the single page for which I receive the most unsolicited "thank you" notes. I assume these notes reflect the enthusiasm with which novices welcome simple and practical instructions supported by a rationale.⁹

-
8. I base this judgment on the number of comments I receive. The index pages for the action research site would probably receive more hits. I don't receive a lot of correspondence, however, about any individual action research web page.
 9. I've been in email contact with Barney Glaser, who expresses no problems with my description of grounded theory.
-

As I mentioned above in paper 48, grounded theory is an explicitly emergent methodology. This is truer of Barney Glaser's approach (especially Glaser, 1992) than of Strauss and Corbin's (especially their 1990 first edition). My own appreciation of the potential flexibility of action research was enhanced by my reflection on this superficially very different but (in some respects) surprisingly analogous process.

This paper also contains a clear description of a theory-building approach that I think is both efficient and rigorous. It's summarised in Figure 6.2.

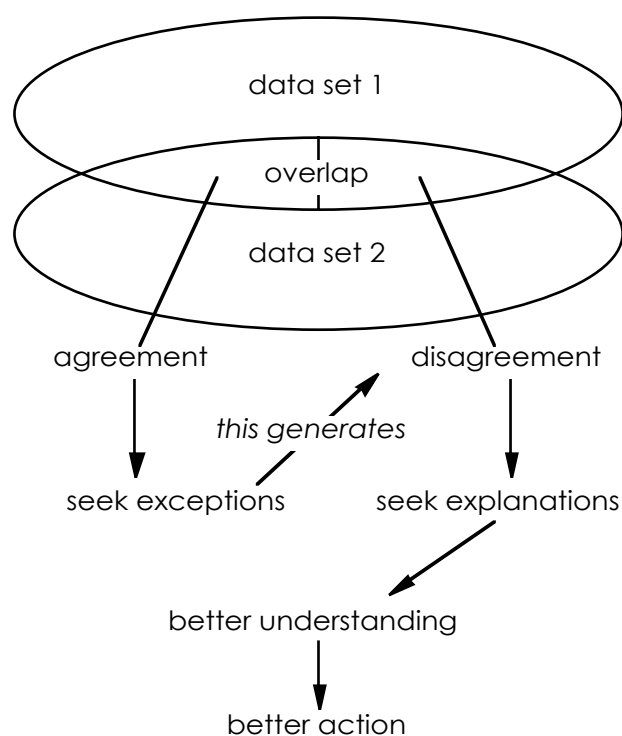


Fig. 6.2 A dialectic engine for data interpretation

I offer this process as a robust element of a data collection and interpretation process. It evolved through experience as I used convergent interviewing in practice (see the monograph *Convergent interviewing*) though it was only later that I thought of it in terms of a dialectic between data and emerging theory. The

grounded theory literature sharpened this realisation. This data collection engine is simple enough for people to carry around in their heads. At the same time it is adequate to the task of collecting and interpreting good data. It is at a sufficient level of abstraction that it doesn't unduly constrain the researcher.

Similar ground is covered in paper 60. In addition, the process for generating theory is made more explicit.

Paper 60 — AR and grounded theory

Bob Dick (2003) What can action researchers learn from grounded theorists. Paper prepared for the research symposium at the Australian and New Zealand ALARPM/SCIAR conference, Gold Coast, 4-5 May 2003. A refereed paper.

Action research and grounded theory are described, and each is identified as an emergent process: one which develops gradually as the study proceeds. Lessons from grounded theory which can be applied to action research are then identified.

In addition, I supplement the dialectic engine with two suggestions which help theory development and theory-practice integration. These are as follows.

- The use of a “theory of action” format (Argyris and Schön, 1974) as a template for theories. A theory of action specifies situation, actions, outcomes, and the assumptions made in identifying these. See chapter 3 of this explication.
 - A set of questions used during the planning phase, to help the researcher make explicit her or his intention, and the underlying assumptions. Paper 04 in chapter 3 described the questions.
-

My intention was to provide practical guidance without being excessively constraining.

The on line action research program Areol (included in this explication as paper 38) discusses the overlap between action research and evaluation. The section immediately below expands further on the overlap.

Action research and evaluation

Each action research cycle contains an element of critical reflection which might alternatively be labelled “evaluation”. Indeed, that was how one of the elements in Kurt Lewin’s (1946) description of the cycle was named.

The two papers which follow are built around an evaluation process. Like most action research the process is participative and is intended to lead to change.

Paper 61 — Snyder evaluation process

Bob Dick (2003) The Snyder evaluation process. A resource file to support the on-line program AREOL: action research and evaluation on line. Slightly revised in 2003 from earlier editions in 1990, 1997 and 1999. The 1999 version is available on line at http://www.uq.net.au/action_research/arp/snyder.html

A fairly detailed description is given of the Snyder evaluation process, a process which combines process evaluation for understanding, outcome evaluation for improvement, short-cycle evaluation for ongoing improvement, and meta-evaluation.

Paper 62 — Qualitative evaluation

Bob Dick (2001) Qualitative evaluation for program improvement. A document prepared for and distributed at the IIR conference on evaluation, Brisbane, 7-8

September. Initially prepared as a resource document for an invited paper in 1992. Revised 1998, 2001.

The Snyder evaluation process serves as a vehicle for exploring the nature of qualitative evaluation techniques.

Before I comment on links between the Snyder process and action research there are two aspects of the Snyder process I can usefully describe. First, unlike most evaluation models, it incorporates four separate types of evaluation:

| | | | |
|--|---|---|--|
| 1 | 2 | 3 | 4 |
| process evaluation analyses the process | outcome evaluation develops indicators | short-cycle evaluation develops a self- improving system | meta- evaluation evaluates the evaluation process |

Second, it assumes that relevant data are to be found in five linked categories, as shown in Figure 6.3.

During process evaluation the stakeholders learn how their process or program works. The outcome evaluation component can be used for a typical summative evaluation.¹⁰ Its recommended use, however, is to develop performance indicators which allow a plan to be monitored as it is implemented. Short cycle evaluation sets up feedback loops that are used for monitoring. Meta-evaluation is an evaluation of the evaluation and is ongoing throughout an evaluation.

In effect, the Snyder process is a process-oriented evaluation. Short cycle evaluation uses an action research approach to evaluate the program or plan that is being evaluated. Meta-evaluation uses an action research approach to evaluate the evaluation.

10. A summative evaluation is one which seeks to evaluate if certain planned outcomes or objectives have been achieved.

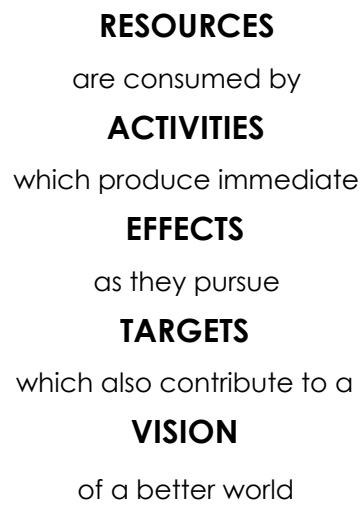


Figure 6.3 The systems model of the
Snyder evaluation process

Both papers address the integration of theory and practice, though in different ways. In the first paper a rationale is provided for most of the steps in the process. The second paper provides a model to serve as a framework. The Snyder process then becomes an example to illustrate the framework and some principles of evaluation.

That concludes the documents on action research and related processes. As in the previous two chapters, some themes related to process effectiveness can now be identified.

Effective action research processes

Action research, as I've said, includes elements of learning and change. It is to be expected then that previous themes will be again present. They are. Theory-practice integration, present in earlier chapters, is again prominent.

Action research is usually intended to bring about change. Learning and research are related, as both involve an increase in understanding. In research however the learning is expected to be more explicit and more rigorously determined. It is not surprising then that rigour is a greater emphasis in this chapter.

Legitimacy and engagement continue to be evident, as does monitoring.

Theory-practice integration

Theory-practice integration is built into action research's dual nature of action (practice) and theory. Alternating between action and theorising in each cycle allows theory and practice to inform each other. It could even be said that theory and practice are a dialectic: theory~practice. They are two different ways of looking at the same phenomena especially in brief cycles. This dual nature of action research is an emphasis of many of the papers and monographs addressed in this chapter.

Theory~practice integration is further enhanced if the theoretical and practical ways of experiencing action research can be translated easily in both directions. I've argued that a "theory of action" form of theory supports this. The action researcher wants to know what actions will lead to what outcomes in the research situation. Theories can be framed in a statement structured as a theory of action:

"In this situation **S** when I carried out actions **A** outcomes **O** resulted".

The statement can also be expanded to include an explanation of why the actions resulted in the outcomes. The theory is then further strengthened. As I argued in chapter 3 an extended theory (that is, with explanations) allows theories of action to be more readily related to other forms of theory.

The theory is most useful when it is based on data collection and analysis which are rigorous.

Rigour

Action research is sometimes criticised for its lack of rigour. I believe that the papers addressed in this chapter have shown that in fact action research can be rigorous and often is. Three important sources of rigour identified have been mentioned.

- Within each action research cycle the theoretical assumptions can be tested immediately in action.
- An open-ended and responsive approach to the data can give some protection against being unduly influenced by prior theory.
- A dialectic approach can test theoretical assumptions continuously against the incoming data.

Each of these can be further strengthened by an ongoing and vigorous search for disconfirming evidence. This is most important for the open-ended approach to be effective. The use of nested cycles further increases the opportunities for testing assumptions and theories.

Legitimacy and engagement

Very often the commitment of stakeholders (or its absence) will determine how much planned action is carried out. In addition more committed stakeholders are more likely to persist with a plan until it works. A complex reality may bring

any plan undone. Committed and persistent stakeholders are more likely to modify actions until they do work.

A lack of stakeholder commitment is often viewed as “resistance”. This locates the problem with the stakeholder. It is more productive to assume that an effective process is one which does engage stakeholders effectively. It is the process that requires modification, not the stakeholders.

Ways of improving commitment have been identified:

- ensuring that the outcomes are relevant for all the stakeholders and providing an adequate rationale for what is to be done
- offering choice rather than prescription
- relating new processes to what is already known
- using strength-oriented processes in the style of appreciative inquiry, or alternatively creating a climate in which errors can be admitted without defensiveness, and then analysed to reduce their reoccurrence
- appealing to a superordinate view within which different opinions are no longer seen as incompatible.

On occasion some initial unfreezing may be required. Strategic concepts offer one way of doing this.

Some prior themes (not pursued further here) have also continued to be evident, including the following:

- taking the *context* adequately into account and
- giving attention to ongoing monitoring of content and process.

Using the above material, I now summarise the contributions to robustness evident in this chapter.

Contributions to robustness

In this chapter the AREOL program is used as a vehicle for exploring ways in which robustness of processes can be achieved. I've chosen it because it is explicitly about both learning and change. Because it has been revised each time it has been offered, it is also a program which is now well developed.

Features which contribute to robustness include the following.

- The information is tiered. The top level tier is the easily-remembered “action research is action and research”. For those who like formulae, $AR = A + R$. Most of the sessions examine the action and the research implications of the session material, and their integration.
 - To assist theory-practice integration participants are encouraged to have an actual project.
 - In addition, each of the weekly sessions includes activities which allow participants to experiment with concepts and processes in practice.
 - To further assist theory-practice integration sessions contain both concepts and practices linked to each other.
 - To maximise participant choice, in several places I explain that the processes I describe are merely examples chosen from a larger array of possibilities.
 - Reflection is encouraged in several different ways, especially for those studying AREOL for credit:
 - there is a discussion list where participants may ask questions and offer comments, and may answer other participants' questions
 - each week a trigger question is posted on the discussion list; the question is usually chosen to open up a new perspective (for instance through the use of a strategic concept) or to relate material to the participants' experience
 - assignments are based on an actual project
-

- the assignments are accompanied by the author's statement of what was learned and the author's evaluation of the project
 - on line learning groups are provided where participants can help each other relate the material in each session to their projects
 - in addition, participants are encouraged to set up face to face learning groups.
- There is monitoring, ongoing through the discussion list and at the end of each program.

That concludes the presentation of the accompanying documents. The next chapters summarise what has been demonstrated about the design and facilitation of robust processes.
