A Framework for Using Action Technologies

Karen E. Watkins and Ann Brooks


This chapter summarizes this volume and suggests points of comparison among the different action technologies, discusses issues of validity among action technologies, and offers a number of implications for adult and continuing education practitioners regarding the use of action technologies.

In this volume, we have explored action technologies that enhance action and learning: action research, action-reflection learning, action science, collaborative inquiry; participatory action research, and popular education. Each of these technologies offers adult and continuing educators a unique approach to changing individuals, groups, organizations, and societies. Whether the adult educator is interested in social change or personal and professional development, action technologies may guide the process. In this chapter, we compare the different action technologies, discuss issues of validity when thinking about action technologies as research, and conclude with a discussion of the uses of action technologies in adult and continuing education.

A Comparison of the Action Technologies

All of the action technologies as described in these chapters aimed at change. In action research, people used data to inform the way work was organized. In action-reflection learning, people learned how to learn from their experience to act more effectively. In action science, people examined their experience to see patterns of learning or meta-learning, and thus, to change their behavior. The scholar practitioners using collaborative inquiry reflected critically on systematically gathered data and their own experience to examine an issue of mutual concern. Popular educators facilitated groups in naming their own problem and developing their own solutions in the context of oppression anticipatory action research is similar to popular education, though it is often more structured. In all cases, these insights led people and organizations to design action in new ways. We discuss each of the action technologies from this volume below.

Action Research. Action research, the first formalized action technology, grew out of the belief that people would take more effective
action by collecting and analyzing data together. Looking at the facts of the context would “unfreeze” people’s understanding and help them learn. People see the need for change as they collect data around a problem, feed it back to the organization, and decide on solutions. Action research as a technology typically includes:

1. Formation of groups from among those who have the problem
2. Reflection on problems in groups
3. Collection of data around the problems
4. Group analysis and group feedback
5. Group-designed interventions to attempt to solve the problem.

Action research is an iterative, cyclic process of intervening, collecting data on the effectiveness of the intervention, reflecting on results, and designing new interventions.

Max Elden and Reidar Gjersvik illustrated the evolution of action research in Chapter Three by describing changes that have taken place in Norway’s workplace democracy program. From a predominantly researcher-driven technology, action research has grown to a more collaborative, participant-driven technology. Symbolic of this shift is the current use of the word co-researchers in place of the traditional research term “subjects.” This has meant that at least in Norway, co-researchers have become collaborators not only in providing the research site and implementing the solutions suggested by the data, but in directing the research process as well. This means they define the problem, collect and analyze the data, and determine the appropriate action to take. Elden and Gjersvik pointed out that in Norway, this move to share control over the actual research process with the co-researchers is part of an explicit move to democratize work life. This means that action research in Scandinavia is part of a broader move to place control over work in the hands of those doing the work.

**Action-Reflection Learning.** Reg Revans, the father of action learning — also called action-reflection learning — suggests that people learn best when focused on real problems in their own work and lives. Through work in sets that strongly resemble action research teams, participants, who typically come from very diverse contexts, examine and work on solutions to the different problems each of the members are facing. Problems must be meaningful, which typically means that they are challenging work assignments. Success or failure is highly visible. Group reflection is again a hallmark.

People do not typically ask questions that challenge their pet assumptions. In order to challenge these assumptions, action-reflection learning teams bring the perspectives of “strangers” to the tasks of problem-setting and problem-solving in order to heighten the team’s ability to probe below their surface with penetrating questions. Teams do not include experts who tell the problem-holder what to do because this prevents discovery learning and may not lead to fresh solutions. The non-expert can ask the “dumb questions” that often lead to new insights. Teams may also work on problems for departments and organizations of which they are not a part, and of which they have little prior knowledge.

O’Neil and Marsick in Chapter Two described their work with action reflection learning and illustrated the emphasis on developing fresh insights and on reframing the original problem with work they conducted at AT&T. In this action technology, we can see the stress being placed on participant learning as a major outcome, with at least as significant a role as solving real organizational problems.

**Action Science.** Action science adds to each of the above the idea that we can have a science of interpersonal action. Action research focuses on solving a problem; action
In the case of both groups, a problem or phenomenon of interest common to the research group is identified, and then in a process of reflecting on experience and action, they attempt to understand more deeply its structure or meaning. This differs from some other action technologies in this book in that the object of reflection is not necessarily intentional action, but the every-day lives and experiences of the participants. The results of these inquiries are then used both to bring a greater understanding to the immediate practice of group members, as well as a more insightful understanding to contribute to formal theory. Thus, unlike other action technologies, these groups struggle to formalize their understandings into articles, chapters, and professional presentations. Their experiences as presented in Chapter Five form a template against which others might test their own knowledge construction.

Participatory Action Research. This variant emphasizes egalitarian participation by a community of individuals who "participate" in a system which is experiencing a problem. The group identifies the problem and develops strategies to overcome it. Many times the group will take as its task the development of critical reflection skills of group members. Each person will select an action problem, collect data to learn more about the nature of the problem, reformulate the nature of the problem, and develop and implement solutions. The role of the group is to offer suggestions, critique, and support to the individual members as they explore their own issues. For example, groups of teachers may come together to help each other improve their practice by conducting action research experiments.

In Chapter Six, Nod Miller describes her unique use of action research which blends T-group technology with action research's focus on action and change. Miller's approach is, like many forms of action research, an idio-
syncratic approach adapted to her adult education aims. It is less typical than many approaches to participatory action research because of its more psychological understanding of what it means to be participant-led. Often in participatory action research, participants guide the research, name the problems and learn, with help from an outside facilitator, to solve them. In Miller's approach, participants learn what their problem is in the context of an enactment, and then collectively learn how to solve it.

**Popular Education.** This approach, based on the work of Paulo Freire, works from the premise that social change is essential to solving the problems that plague members of oppressed groups. In this approach, action is undertaken concurrently with an emerging consciousness of systemic social, class, gender, and ethnic barriers to problem solving.

Carlos Torres and Gustavo Fischman in Chapter Seven describe how critical control over the process by the participants is to the successful use of popular education. They also illustrate how the imposition of any ideology on the process inevitably aborts the liberating potential of popular education. Of particular importance in this chapter are the cases, which show popular education used in the Latin American setting with which it is often associated, as well as in a large industrialized and fragmented city in the United States. This popular education approach is of particular importance as we come to grips with the multiplicity that is increasingly present in both urban and rural life in the United States.

**Contrasting Action Technologies**

What, then, do these approaches have in common? In an analysis of the work of eleven action researchers, Peters and Robinson (1984) identified five characteristics that appeared most often: action research was problem-focused, collaboratively conducted and participatory, action-oriented, an organic and cyclical process, and scientific. In these pages, we see that these characteristics persist, though with an evolving understanding of the nature of science. Less frequently cited characteristics Peters and Robinson identified were that action technology is normative, ethically based, experimental, reductive, emancipator, stresses group dynamics, and is naturalistic. These additional characteristics appear to have increasing importance among those action researchers whose work is reflected in this volume.

The action technologies described here also vary along a number of dimensions. Each depends to a greater or lesser degree on the skilled interventions of a facilitator trained in guiding critical reflection, collecting data, and implementing change; and each emphasizes action over reflection, or vice versa. Placed on a continuum of these dimensions, the various approaches might look like Figure 9.1. In Table 9.1, we present a comparison of these approaches.

What is perhaps most striking in these displays is the amount of similarity among the approaches, particularly at the ideological level. While their key strategies and arena of interest vary considerably, fundamental purposes align many of these action technologies. Each is directed at change and empowerment. While some variants remain rooted in scientific rationalism, most lean toward anti-positivist theoretical foundations. Given the variety among these technologies, it is difficult and probably undesirable to seek a common standard of effectiveness. Yet, how then do we move from practicing action technologies to evaluating their effectiveness? In the section which follows, we explore one of the fundamental dilemmas present in action technologies as a form of research how to establish validity with so much variance in approach, context, and outcome.
Figure 9.1. Continua of Action Technologies

<table>
<thead>
<tr>
<th>Focus on action</th>
<th>Facilitator Directed</th>
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<tbody>
<tr>
<td>Popular Education</td>
<td>Action Science</td>
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<tr>
<td>Participatory Action Research</td>
<td>Action Research</td>
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<tr>
<td>Action Learning</td>
<td>Action Learning</td>
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<td>Action Research</td>
<td>Participatory Action Research</td>
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<tr>
<td>Action Science</td>
<td>Collaborative Inquiry</td>
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<tr>
<td>Collaborative Inquiry</td>
<td>Popular Education</td>
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<td>↓ Focus on Reflection</td>
<td>↓ Participant Led</td>
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</table>

Table 9.1. A Comparison of Action Technologies

<table>
<thead>
<tr>
<th>Action Learning</th>
<th>Action Research</th>
<th>Action Science</th>
<th>Popular Education</th>
<th>Participatory Action Research</th>
<th>Collaborative Inquiry</th>
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<tbody>
<tr>
<td>Purpose</td>
<td>Management development</td>
<td>Organizational, social change</td>
<td>Individual, organizational change</td>
<td>Individual, community empowerment</td>
<td>Individual empowerment</td>
</tr>
<tr>
<td>Primary Level of Focus</td>
<td>Individual</td>
<td>Organization, society</td>
<td>Individual, organization</td>
<td>Society</td>
<td>Individual, society</td>
</tr>
<tr>
<td>Theoretical Foundations</td>
<td>Reflective and experiential learning theory</td>
<td>Scientific rationalism</td>
<td>Social psychology/organizational development</td>
<td>Dialectics</td>
<td>Critical theory</td>
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<td></td>
<td>Experimental learning theory</td>
<td></td>
<td>Experiential learning theory</td>
<td>Phenomenology</td>
<td>Feminism</td>
</tr>
<tr>
<td>Ideological Focus</td>
<td>Depends on the set facilitator</td>
<td>Efficiency, effectiveness</td>
<td>Model II</td>
<td>Liberation</td>
<td>Liberation</td>
</tr>
<tr>
<td>Key Strategies</td>
<td>Group reflection</td>
<td>Group reflection</td>
<td>Group critical reflection</td>
<td>Group critical reflection</td>
<td>Group critical reflection</td>
</tr>
<tr>
<td></td>
<td>“On demand” management training</td>
<td>Diagnostics research</td>
<td>Directly observable data (cases) on the problems of interest</td>
<td>Consciousness-raising strategies</td>
<td>Focus on participant concerns</td>
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<tr>
<td></td>
<td>Focus on solving real problems</td>
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<td></td>
<td></td>
<td>Integration of data external to group and personal data</td>
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</tbody>
</table>
Assessing Validity in Action Inquiry

Those who use action technologies as a methodology of inquiry are often depicted more as interventionists or change agents than as researchers. However, this presents a dilemma if we are to use definitions of validity that have been developed for types of inquiry that have as their goal the description or explanation of reality. Thus, criteria developed to determine validity for other types of research are inappropriate for assessing the quality of action inquiry.

Because of the focus in action technologies on catalyzing change, we propose here change-focused criteria for judging validity in action inquiry: It is useful to compare these criteria to an established set of criteria from a more conventional research paradigm such as Lincoln and Cuba's (1985) validity criteria for naturalistic inquiry. Table 9.2 presents these contrasts.

The first criterion we have proposed is that of "skillfulness." In action inquiry, the skill of the interventionist or researcher is a key determinant in the quality of the results. Since the participants in action inquiry must produce the phenomenon they wish to study, the action inquirer who facilitates the inquiry must have a high level of interpersonal competence. This is true whether or not the facilitator is highly directive. Since the researcher and participants are the instruments in action inquiry, data on their practice must be obtained. The facilitator must typically do this while simultaneously observing, teaching, and helping others. This is because the facilitator is usually more concerned with the use of the technology as a form of research, while the participants are frequently more concerned with the practical results of the technology.
The facilitator must also be able to teach the participants new research and action skills. They must learn the tools of research appropriate to their chosen problem and also learn how to act differently in order to produce new results. Few action researchers appear to acknowledge the degree to which this action-taking is dependent on the ability of the participants to learn and apply new skills (Argyris and Schön, 1991). Action inquirers will not produce usable results without a facilitator who is skilled in teaching the new skills to organizational participants—or in creating a process through which participants can learn and teach each other new skills. Whether actively facilitated or internally driven, the action technology depends on the acquisition of new skills for knowledge creation and utilization.

### Table 9.2. Emerging Criteria for Validity in Action Research Compared with Guba and Lincoln’s Validity Criteria for Naturalistic Inquiry

<table>
<thead>
<tr>
<th><strong>Guba and Lincoln (1985)</strong></th>
<th><strong>Action Research</strong></th>
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<tbody>
<tr>
<td><strong>Trustworthiness/credibility</strong>&lt;br&gt;How can we establish confidence in the truth of the findings for both the context and the respondents?</td>
<td><strong>Skillfulness</strong>&lt;br&gt;How can we develop both action and research skills among ourselves and participants to ensure that the solution works in context?</td>
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<tr>
<td><strong>Transferability/applicability</strong>&lt;br&gt;How do we determine the extent to which the findings have applicability with other contexts or subjects</td>
<td><strong>Relevancy/usability</strong>&lt;br&gt;How do we determine the relevance of findings to the needs of the problem context?</td>
</tr>
<tr>
<td><strong>Dependability/consistency</strong>&lt;br&gt;How do we determine whether the findings would be repeated with the same or similar subjects or contexts?</td>
<td><strong>System Competency</strong>&lt;br&gt;To what extent are we able to determine the systemic fit if solutions so that problems are solved in a manner that permits ongoing system learning?</td>
</tr>
<tr>
<td><strong>Conformability/neutrality</strong>&lt;br&gt;To what extent are the findings determined by the subjects and the conditions of the inquiry and not by the biases of the researcher?</td>
<td><strong>Normative consistency</strong>&lt;br&gt;How consistent are procedures and outcomes with the normative theory guiding the research? Do participants learn? Are situations transformed as predicted by the action technology model?</td>
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Finally, facilitators of action technologies, at least in the newer more participative forms, must often face their own needs to control the process. A theme that emerges again and again in these chapters is that expert control over the production of knowledge is fundamentally at odds with the action inquiry process. This often means that facilitators must examine their own intentions to impose an ideology, reap ego-related or professional rewards, or achieve a “successful” outcome. This can be a painful process and is not one...
that many undertake willingly: Again, this form of internal critique is a new skill for many.

The second and third criteria, “usability” and “system competency,” look beyond the participants in the process to ask whether or not the results of the process are usable or useful by the system of which they are a part and, beyond this, to whether or not the system as a whole is better off as a result of the actions taken (Cunningham, 1993; Argyris, 1970). System competency here is defined as an ability to continue to learn, to continue to cycle from idea to detection of new problems, to action and back again, iteratively improving the system’s effectiveness. The system is bounded by the participants in the action research process, by their perceptions of what is inside and what is outside of the problem. One of the most interesting aspects of the popular education examples in this volume is the scope of the system they define. Yet, it is equally interesting in the participatory action research and collaborative inquiry chapters to see that a more internal system state, with very narrow boundaries, produces a deeper interior probing and ultimately enhanced system state.

The fourth criterion, “normative consistency,” asks whether or not the procedures for changing individuals and systems were ethical, at least within the normative philosophy of the action researchers. This is fairly complex in practice since both the outside action technology facilitator and the inside participants undoubtedly have varying views about what is ethical in the service of change. Positions as disparate as "use whatever works" to "use only that which does no harm and obtain informed consent" are common in a group of action researchers. Argyris (1970) has consistently called for standards of openness, experimentation, and mutual free and informed consent. Freire (1982) stated: “We have to be very clear about the objective of this work. It is the people themselves, not the advancement of science. If, however, the people are silent, then we have to provoke them, because we are not neutral” (Kermis and McTaggart, 1988, p. 272). In this criterion, internal consistency between ethic and action and consensus among participants are suggested. In effect, this lends support to Argyris’ ideas that there must be openness and informed consent since these are requisite to achieving consensus. At a minimum, the action researchers, philosophy of change should be publicly disclosed and discussed.

Threats to Validity in Action Research.
As we have both practiced action research and observed the examples given in these chapters, we have noted a number of problems in implementing action research effectively we identify these as potential threats to validity in action research. In this section we describe issues of validity of process over outcome, issues of skill, and theory to practice gaps.

Does validity of process or diagnosis necessarily produce validity of outcome? On the one hand, because diagnosis is easier to set up as a more "controlled" research process, the researcher often expends more time and energy in this area, leaving the actual implementation of the action recommendations to the participants who may or may not have acquired the skills to implement them. Whether or not the outcomes developed actually solve the presented problem, as in normal science research, is the most difficult criterion. Action inquirers have difficulty communicating the extent to which the interventions they implement are skillful, other than in terms of their outcomes. This probably accounts for the plethora of “success stories” among action research reports. Yet most action inquiry projects are long-term, cyclical processes of successive approximations. Where are the critical reports of the more problematic fits and starts of such efforts? The skill of diagnosis and
analysis in real time is difficult to communicate, but perhaps greater detail about the early stages of an action research project would help those who wish to use action technologies become acquainted with what is involved. However, in the end, skills using action technologies are highly personal. As Moustakas (1990) notes in paraphrasing Polanyi: “The synthesis of essences and meanings inherent in any human experience is a reflection and outcome of the researcher’s pursuit of knowledge” (p. 33).

Is it a question of validity or of gaps in skill? As we reflect on our own practice, we are struck by what seems like a minimizing of the extraordinary difficulty in developing both one’s own and participants’ skill in enacting new behaviors suggested by the notions of validity presented here. Watkins recalls the supervisor who came in to one group session with his equivalent of a "Eureka!" He reported that he had tried to use the new skills he was learning to discipline an employee. He stopped himself from lapping into one of his frequent temper flare-ups and remembered to listen to the employee and. While sharing his initial judgment about her behavior, to inquire into her reasoning about the incident, he found that his new skills made her much more receptive to his advice. In effect, he had learned a new way to control others. Rather than a new paradigm for empowering others, He had a tool, but not the underlying values behind the tool. Despite his learning progress, there was still a significant gap between his intentions and his actions.

The extraordinary number of minute-to-minute judgment calls between action and inquiry imperatives may also lead to compromises of either or both agendas. In types of action inquiry such as action science, where the goal is to teach people new behaviors that are themselves difficult or highly threatening, the interventionist must continually respond to the evolving ability and willingness of the participant to change. Similarly, in action research, the highly revealing information about attitudes and perceptions in a work organization, which is often turned up in the process of data collection, can be extremely disruptive to the organization's status quo, upsetting formal and informal power relationships. Conducting research that might add to knowledge under these conditions is difficult and requires enormous skill.

**Theory to Practice Gaps.** Individuals seeking to solve problems in complex, real-time settings find that the problems change under their feet, often before the more in-depth iterative search for solutions suggested by action inquiry has achieved meaningful results. Gaps occur between theory or idea and action. For example, in a study of empowerment, Watkins and her colleague Bonnie Turner included in their initial contracting a requirement that all participants be volunteers. Midway in the process, a few individuals alluded to the process by which they "volunteered." Managers had called them into their offices or sent them a memo asking them to "volunteer" for this project. In other areas, a memo was sent to all supervisors asking that those interested contact personnel to sign up for the program. It became clear that leaving it up to the organization to determine how to solicit voluntary participation left room for many conceptions of the idea. In addition, pan of the group structuring included a mixing of shifts and divisions; hence many groups included individuals from the areas that had mandated participation. This led to a number of discussions about the directly observable differences in empowerment from area to area in the organization, and feelings of injustice seemed to increase within those areas that had mandated participation. This is evidenced in comments like, “Well you can try that in your area, but in our area. ...” While this situation creates a laboratory for learning about the impact of these differences within one organization, unless the learning leads to action to ad-
dress the issue, system competence is not enhanced. The obvious contradictions between empowerment and mandatory participation had the potential to undermine the goals of this action research project.

Generalizability. Argyris and Lewin contend that the findings from action inquiry can add to the body of action knowledge, or in other words, the knowledge of action—outcome relationships. However, the facts that action inquiry is heavily bounded by time and space, dependent on the skills of the facilitator and participants, and has increasingly moved away from the methodology of experimental and natural science suggest that the notion of generalizability cannot be understood in the conventional way. Traditionally, generalizability depends upon the ability of the researcher to control the research setting in terms of who will participate in the study and what factors will be allowed to influence the results. In action inquiry, the purpose is to make change in dynamic and complex systems. Thus, such excessive control on the part of the researcher oversimplifies the system rather than assists in addressing it in all its complexity. A study's generalizability must then rest in the hands of those who participate in or read about the study, rather than in the study itself. The most we can say about these studies is that we have learned something about our own situations from reading about the situation of others. The attempt to use research to uncover universal truths that can be told as though they apply to all people for all time is naive in a quickly changing and highly diverse world.

Implications
Participants in action research programs expect to be treated not as objects or even subjects, but as co-researchers engaged in "empowering participation" and in "co-generative dialogue" between "insiders and outsiders" (Elden and Levin, 1991). In action research, truth is in the process of inquiry itself. Was it reflexive and dialectical? Was it ethical and collaborative? Did participants team new research skills, attain greater self-understanding, or achieve greater self-determination? Did the research solve significant practice problems or did it contribute to our knowledge about what will not solve these problems? Were problems solved in a manner that enhanced the overall learning capacity of the individuals or system? These are the types of questions that must guide action research (Argyris, 1980). In 1947, Lewin wrote: “The research needed for social practice can best be characterized as a comparative search on the conditions and effects of various forms of social action, and research leading to social action, ...This by no means implies that the research needed is in any respect less scientific or lower than what would be required for pure science in the field of social events. I am inclined to hold the opposite to be true” (pp. 150-151). We agree.

Using Action Technologies in Adult and Continuing Education
Whether working to develop new skills among adult learners, solving societal or organizational problems, or working to transform cultures, action technologies are an important tool for adult and continuing educators. Issues of literacy, empowerment, and change are ably addressed using these tools. Action technologies are particularly consistent with the philosophical orientation of many adult and continuing educators. The emphasis on group reflection and empowerment, and the aim of social action, which are hallmarks of these action technologies, are also issues that permeate adult education literature. In this book, we have offered a number of cases of adult education at work to show how these action technologies have been used. It remains in the hands of those who read this volume to explore the many additional ways these action technologies might yet be used.
References


Notes

KAREN E. WATKINS is associate professor of adult education, University of Georgia, and former director of the graduate program in human resource development, University of Texas at Austin.

ANN BROOKS is assistant professor in the Adult Education and Human Resource Development Program, University of Texas at Austin, and a member of the Group for Collaborative Inquiry.

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