Action research and knowledge creation: merits and challenges

Kjell Grønhaug and Olov Olson

Introduction
The term “action research” was invented and introduced by the eminent social scientist Kurt Lewin almost 50 years ago (Lewin, 1946). Over the years, action research has become acclaimed – and criticized. At the same time as this research, tradition has been claimed to be almost the only way of producing useful knowledge by its (extreme) proponents (cf. Susman and Evered, 1978), action research has been deemed “inscientific”, and to produce research of mediocre quality with unvalidated findings (Sørensen, 1992).

There are several reasons for such controversies. For example, the label “action research” is rather broad, often left undefined, and used in different ways. This has resulted in fuzzy categorization of types of research to be subsumed under the label “action research”. But there is more to this. Different views on what constitute scientific research and knowledge prevail. Core assumptions about ontology, epistemology, methodology and human nature are often stated implicitly only, and thus add to the ambiguities associated with this research approach.

In this paper we try to clarify some of the ambiguities surrounding action research, and the merits and limitations of this research approach. To do this we first briefly discuss some aspects of research and knowledge, including some prevalent perspectives reflected in the research methodology literature. We then more closely inspect action research, how it has been defined and characterized and contrasted with traditional research. Specific challenges to do high quality action research are emphasized as well.

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Abstract
Action research is conducted by researchers from a variety of disciplines, e.g. sociology, psychology, organization theory, management, marketing and accounting. Over the years, action research has been acclaimed and criticized. This paper focuses on controversies surrounding action research, and its specific merits and requirements. Action research as reflected in the literature is briefly reviewed and characterized and contrasted with traditional research. Specific challenges to do high quality action research are emphasized as well.

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Research and knowledge

An important – if not the important – purpose of doing scientific research is to produce knowledge. The term “research” literally means search again (“re” (lat.) – “again”), indicating that research can be considered a process unfolding over time, but also that accepted truths may be questioned and re-examined. The word “science” is derived from the Latin word scire, “to know”. Throughout history, knowledge has been acquired in various ways. One way of acquiring knowledge is through what has been termed “the scientific approach”. As will be dealt with shortly, there is no common agreement on what is the proper scientific approach, nor on what constitutes scientific knowledge.

When do we know something? A traditional conception of the term knowledge has been – and partly still is – related to the truth value of the knowledge, i.e. we know something when we know that it [this knowledge] is “true”. This perspective of knowledge dates back to the old Greek philosophers. However, this conception of knowledge is not the only one. For example, it has been claimed that knowledge is socially created, and that knowledge is what society believes to be “correct” (see Berger and Luckman, 1966; Knorr-Cetina, 1981; for further discussion).

Research is often thought of as a process, where a distinction can be made between the formulation or construction of theory (explanation) and test of theory, which relates to Popper’s (1975) distinction between “the context of discovery” and “the context of justification”. Much of the traditional research literature reflects the perspective that scientific knowledge is knowledge that has passed some rigorous test, e.g. statistical testing of derived hypotheses. This point of view is explicitly argued by Calder et al. (1981, p. 136):

Scientific knowledge consists of theories that are capable of and have been subject to rigorous empirical testing. These theories should not be regarded as proven or true, rather they have scientific status because of and subject to attempts to refute them.

Viewed in this perspective, insights obtained through exploratory research without being subject to further testing are “prescientific” (cf. Calder, 1977). It should also be noted that emphasis on testing of derived hypotheses reflects acceptance of the falsification criterion[1], indicating that knowledge cannot be generated through verification, but only through falsification can one know (until conflicting evidence may show up). This perspective on scientific knowledge is, however, not shared by all members of the research community. Morgan (1983), for example, claims that knowledge based on interpretations (without rigorous testing) to be scientific, and Jones (1983, p. 151) considers theory-construction (i.e. activities related to the context of discovery), to represent the real scientific challenge, or in his own words: “... it is the researcher’s job to reconstruct the social world in terms of formalized constructs that capture the contingencies of the situation and the manners in which reality is created.

Research and knowledge creation are influenced by the perspective of philosophy of science held by the researcher whether this is explicit or implicit. A philosophy of science perspective includes (among other things) core assumptions about ontology, epistemology and human nature. Such assumptions influence beliefs about how knowledge can be acquired and how research should be conducted (cf. Morgan and Smirich, 1980). Scaled according to a subjective-objective dimension, there is little doubt that very much social science research is influenced by an “objectivist” ideal. According to the (long ago dead) extreme positivistic point of view reality is conceived as a concrete structure where man is a passive responder. In such a perspective, knowledge can be generated “at distance”.

As noted above, knowledge may be acquired in several ways, and knowledge comes in many forms. For example, through observations and interactions people acquire what has been termed “everyday” or “personal” knowledge, i.e. knowledge which for the individual is valid and useful, reflecting her or his perspective of reality. It should also be noted that constructs and perspectives held by individuals, for example as reflected in their mental models (cf. Johnson-Laird, 1983), may deviate dramatically from established scientific knowledge. Parts of the individual’s knowledge may also be tacit in nature, also implying that individuals may hold knowledge they are unaware of, but which will still influence their behaviors.

Individuals, either operating alone, in groups or organizations, are usually assumed to exhibit purposeful, i.e. goal-directed
behaviors. To behave purposefully man needs causal knowledge, i.e. the individual must know the purpose of activities, what activities to perform, how the various activities relate – and how they relate to their goals. However, the most prevalent assumption in contemporary social sciences is probably the one that posits limited cognitive capacity, i.e. man has limited capacity to seek, store, handle, and make sense of data. From the assumption of limited cognitive capacity it follows that the individual’s rationality is limited or “bounded”, implying that the total set of alternatives and their associated consequences seldom or ever will be examined (cf. Simon, 1957). The assumption of limited cognitive capacity also allows for “irrational behavior”, e.g. that actions may preceed goals, and goals be detected after choice (see e.g. March and Olsen, 1976).

In order to behave purposefully, the individual needs knowledge about how to structure and solve problems, or as termed by Simon (1978) “procedural knowledge”, i.e. knowledge about procedures, rules, etc., and how to apply them. Individuals, groups and organizations do not, however, operate in a vacuum. They are context bound, embedded in ever-changing environments. To make wise decisions and initiate adequate actions, as assumed among others in the business administration literature, also knowledge about the actual context is needed, indicating that also “contextual rationality” is needed (March, 1978). For example, a business firm needs knowledge about its competitors and their customers to initiate and implement adequate competitive strategies. Much scientific produced knowledge relates to descriptions and explanations of human beings and their behaviors in general, separated from the actors’ context, while human actors primarily are preoccupied with the solving of their specific and often context-bound problems. Factors such as limited cognitive capacity of context-bound actors, and that context-free scientific knowledge often is stated in terms different than that used by the actors, may easily cause scientific knowledge to be conceived as “irrelevant”.

**Action research**

In this section we define and characterize action research. Lewin (1946) in his seminal contribution on action research, emphasized the importance of making use of (scientific) knowledge to make social improvements, indicating that a main purpose of doing (social science) research should be its usefulness to society. For example, Lewin himself conducted large-scale studies followed up by well-founded programs to improve people’s eating habits. In a similar vein, business firms conduct research to gain insights as a basis for initiating and implementing purposeful actions, e.g. to improve their competitive position, to exploit discovered opportunities and/or to handle threats. Market research, for example, is often (usually) conducted to gain insights and/or clarify alternatives as a basis for purposeful actions.

From his (Lewin’s, 1946) point of view there is no doubt that action research was meant as “scientific” research. His particular view is reflected in the following quote:

> It is important to understand clearly that social research concerns itself with two rather different types of questions, namely the study of general laws (of group life) and the diagnosis of a specific situation.

Problems of general laws deal with the relation between possible conditions and possible results. They are expressed in “if so” propositions. The knowledge of general laws can serve as guidance for the achievement of certain objectives under certain conditions. To act correctly it does not suffice (to know) the general laws ... (One) has to know, too, the specific character of the situation at hand. His character is determined by a scientific fact-finding called diagnosis (Lewin, 1946, p. 38).

Lewin’s (1951) “general laws” can be compared to – as mentioned above – context-free scientific knowledge. In his famous field theory he emphasizes the interrelatedness of the person and the environment, i.e. an emphasis on what he termed “the total situation”. According to Lewin, knowledge is not only needed about the person (or group or organization), but also about the immediate situation in which the actor is embedded to understand her or his behaviors, which is also needed for improvement actions. This corresponds to our above quest to contextual knowledge in order to behave (intendedly) purposefully. He thus has to suggest adequate actions and make improvements, situational knowledge is needed in addition to knowledge about “general laws”. The reader may get the impression that Lewin’s perspective on action research was primarily to apply social science knowledge to change and improve (which of
course was one, if not the prime purpose), but he also considered action research as such as an important source of acquiring insights about social systems. For example, through such research one may observe unexpected reactions, and/or discover problems not previously thought of, which may initiate further theorizing and testing. In a similar vein, marketers through their field activities may acquire new insights, resulting in reconstruction of their “market realities”. (For recent and excellent discussion, see Zaltman, 1997.)

In his original contribution, Lewin (1946) also suggested a procedure for doing action research, implying cycles of analysis, fact-finding, conceptualization, planning, and evaluation to be conducted simultaneously to solve problems and generate new knowledge. His emphasis on continuous research activities is as such interesting. It conforms with the idea that problems must be sought and elaborated to really be understood, or in other words - that the problem space is gradually uncovered and that understanding is enhanced as new data are made available and interpreted. His emphasis on collecting evidence – or in his own words – “fact finding” underscores this:

The reconnaissance of fact finding has four functions. First, it should evaluate the action. It shows whether what has been achieved is above or below expectation. Secondly, it gives the planner a chance to learn, that is, to gather new general insight, ... Thirdly, this fact finding should serve as a basis for correctly planning next step. Finally, it serves as basis for modifying the “overall plan” (Lewin, 1946, p. 38).

When introduced, action research was hailed as an important innovation in social science inquiry, and subsequent investigators have built on Lewin’s ideas. In his original contribution he (Lewin, 1946) did not explicitly define the term “action research”. Rather the intended meaning was reflected through description of purpose and procedures for doing such research. Rapoport (1970, p. 449) has framed probably the most commonly used definition of such research:

Action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework.

Closer inspection of this definition (as well as the preceding comments) reveals that action research:

(1) emphasizes the importance of both scientific contributions and the solving of practical, real-life problems (even though this also often is the purpose of (much) traditional research, the research as such is frequently separated from future actions);

(2) focuses on the common values and standards of researchers and clients (the value standards of researcher and clients – even though important - are usually not explicitly taken into account in “traditional” research);

(3) represents an intensive research strategy (which also may be the case, but need not necessarily be so in “traditional” research);

(4) involves some aspects of collaboration between researcher and client (which is paid almost no attention in prototypical, “traditional” research, cf. Frankfort-Nachmias and Nachmias, 1996);

(5) is longitudinal and emphasizes gradual learning and improvements (even the learning aspect is crucial in “traditional” research, very much of the research literature focuses on the single study. In “real-life”, however, the focus is often on longitudinal knowledge creation and learning);

(6) assumes that the researcher needs contact and interaction with clients to really know their problems and influencing factors (cf. “the total situation”). As such, this represents a deviance from the “traditional”, distant and “objective” research ideal. This may also explain the strong anti-positivistic attitude reflected in very much of the action research literature. (For further discussion, see Peters and Robinson, 1984; Reason, 1994; Susman and Evered, 1978.)

Action research presumes, as emphasized above, collaboration between researcher(s) and clients. The roles played by researchers and clients may, however, vary tremendously. For example, it seems reasonable to assume that a highly competent client will be more actively involved compared to when this is not the case. Or stated differently, action research, i.e. research aiming at change and improvements can – in principle – be conducted with highly varying degrees of involvement of clients. At the extreme, action research can be conducted on behalf of the totally helpless. The more recent term “participatory action
research” thus (implicitly) assumes competent clients, as reflected in the following quote:

In participatory action research, some of the people in the organization or community under study participate actively with the professional researcher throughout the research process ... (Whyte et al., 1991, p. 20).

Some authors make a distinction between action research and participatory research. One of the distinguishing factors is exactly the degree of client participation (Brown and Tandon, 1983, p. 279)[2].

In a recent review of participative inquiry, Reason (1994) distinguishes between co-operative inquiry, participatory action research and action inquiry. All three research traditions emphasize change and improvements, and that individuals are contextually bound. It is also assumed – as emphasized above (cf. discussion of contextual knowledge and mental models) that people (try to) make sense of their context, and that they hold (private) theories, that guide and direct their behaviors. A key aspect of all the three above-mentioned approaches (traditions) is to understand individuals (or groups) and their understanding of the actual situation, and on this basis to arrive at directions for change and improvements. (Re)education of the target group may be required, which may include systematic training. The three approaches (traditions) differ, however, somewhat with regard to data collection methods, the importance placed on reflection as part of the research process, degree of involvement of target groups, as well as underlying guiding theories. It should also be noted that Reason (1994) in his review completely neglects the discussion of whether participative inquiry may contribute to “scientific” knowledge as emphasized in Lewin’s (1946) seminal contribution. From the above discussion follows that what to subsume under and what to exclude from action research is not self-evident, and that the domain of the concept is rather fuzzy.

From the preceding discussion follows, however, that action research represents an intensive approach, involving cycles of actions and reflections, emphasizing understanding and learning. The underlying perspective (assumption) is seemingly that it takes time for the actors to acquire new knowledge, or more precisely, to change their cognitive structures in such a way that their reality constructions change. The emphasis in action research on what Argyris and Schön (1974) have termed “double-looped learning” exactly relates to this point, i.e. the actor’s cognitive structure or “world view” must be altered if she/he is going to initiate change for improvements.

Another important point, but treated implicitly only in most of the action research literature, relates to the roles played by clients and researchers, respectively. Why make use of researchers, and why should researcher(s) and client interact? A key point is that researcher(s) and clients differ in knowledge. Clients are the “problem owners”. They have experience-based knowledge from their actual context. The true virtue of the researcher is her or his theory-based knowledge. Such knowledge can be – and is often assumed crucial to more precisely identify actual problems, clarify implicit assumptions, and through interaction and training change clients perspective of importance to undertake actions for improvements (cf. Argyris, 1983). This also corresponds to the situation in business life where firms contract outside researchers to complement their knowledge basis.

Action research and traditional research approaches contrasted

“Traditional research” is associated with “objectivity” and emphasizes validity of research findings. In traditional research the (classical) experiment serves as an “ideal”, a research design often used as a baseline for evaluating other research designs (cf. Frankfort-Nachmias and Nachmias, 1996). The (classical) experiment is assumed to be a “strong” research design. Manipulation of treatment, before and after measurement, and randomization make it possible to identify covariation between and time order of cause and effect. The (classical and more advanced) experiments allow for taking many (but not all) of the validity threats into account (for detailed discussion, see Cook and Campbell, 1978)[3].

In order to compare and contrast action research we will derive a set of dimensions from traditional research (experiments) as well as from intensive research approaches, e.g. action research discussed above. Valid knowledge is emphasized in traditional research, in particular valid
(context-free) knowledge of (causal) relationships between variables. To determine cause-effect relationships, the following requirements should be met:

• concomitant variation, i.e. covariation between cause and effect;
• cause should precede effect;
• alternative causal explanations should be ruled out.

From the experimental research literature, we may thus derive dimensions allowing for the testing of causal explanations, such as:

• whether the researcher can control/has control over treatment (cause);
• covariation between cause and effect;
• time order of cause and effect;
• access to control groups; and
• randomization[4].

In real life, which is the context of action research, it is often difficult to conduct true experiments. For example, randomization usually becomes impossible, manipulation of treatment is often difficult, and true control groups are seldom available. Manipulations can also be unethical. It should also be noted that true experiments are most appropriate when studying stimulus-response relationships, i.e. situations where treatment can be manipulated (or varies in a natural setting), and when the time interval between stimulus and response is rather short. Often, however, the time interval between the presumed cause and effect is rather long, e.g. between gender and carrier pattern. Effects of such properties, e.g. gender, are often general, lacking the specificity of the experimental stimulus. Such factors, in addition to lack of access to control group(s) and impossibility of randomization, often make experimentation in real life less relevant as research approach. In traditional research a key challenge is to compensate for such deviations from the experiment to arrive at valid findings (see Cook and Campbell, 1978, for thorough discussions). A comparison along the dimensions given above shows striking dissimilarities between classical experimentation and action research. This is shown in Table I.

In Table I, key characteristics of the experiment were used as points of departure for our comparison. By using key characteristics of action research as basis for comparisons, the following emerges (see Table II).

Inspection of Table II reveals some striking differences between the two research approaches. For example, it is seen that even though experiments focus on change, they are (usually) detached from real-life problems. Findings from experimental research (in the social sciences) can be used for improvement. This is, however, often a secondary purpose. In experimental research, clients are treated as “objects” in contrast to what is the case in action research, where the constructed reality of clients is brought directly into account, and thus makes clients the “subjects”. In action research, changes and improvements are constructed and implemented on behalf of, and often in close cooperation with, the client. This will often also be the case in business research. For example, for marketers it is often a prerequisite to bring in and understand customers needs and wants to keep them loyal.

Research practices and underlying philosophy of science perspectives are (often) intertwined. No wonder. Doing research implies

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Table I Comparison between classical experiments and action research (I)

<table>
<thead>
<tr>
<th>Research approach</th>
<th>Experiments</th>
<th>Action research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control over treatment</td>
<td>Yes</td>
<td>Partly</td>
</tr>
<tr>
<td>Focus on covariation between cause and effect</td>
<td>Yes</td>
<td>Partly</td>
</tr>
<tr>
<td>Focus on time order of cause and effect</td>
<td>Yes</td>
<td>Partly</td>
</tr>
<tr>
<td>Access to control group</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Randomization</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

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Table II Comparison between classical experiments and action research (II)

<table>
<thead>
<tr>
<th>Research approach</th>
<th>Experiments</th>
<th>Action research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on real-life problems</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Collaboration between researcher(s) and the client</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Focuses on change</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Longitudinal</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Multiple research activities</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
beliefs about how knowledge can be acquired, assumptions about epistemology and ontology, and human nature (cf. Covalewski and Dirsmith, 1990; Morgan and Smirich, 1980). As noted above, a strong anti-positivistic attitude is often reflected in the action research literature (see Peters and Robinson, 1984; Reason, 1994; Susman and Evered, 1978). Action research assumes – among others – insights into clients’ world views, and underscores that knowledge is acquired gradually. It (action research) also presumes perceptions, and that “reality” (at least to some degree) is socially constructed, which partly deviates from more “traditional” research. It has been argued, however, that action research as such can be conducted within the perspective of more “traditional” research with emphasis on valid knowledge, and documentation of action outcomes (cf. Sørensen, 1992).

**Action research – challenges and requirements**

When introduced, action research was considered an innovation in social science research with its emphasis on usefulness, change and improvements. Even though few, if any, will question the legitimacy of the intended purposes of action research, it has been questioned whether action research really produces valid knowledge. This questioning partially relates: to the type of knowledge produced; and whether the knowledge produced is valid (in the traditional sense). The objections partly relate to the perspective on scientific knowledge discussed above (i.e. to be claimed scientific the knowledge should have passed some rigorous test of falsification).

There is little doubt that action research can be useful for clients involved. Such research may enlighten their problems, and through interactions, actions and reflections change clients’ reality construction, and thus their knowledge base, which in turn might be useful for changing the system in which they are embedded. But is the knowledge produced “scientific” as assumed in the traditional research literature? “Holistic” research in context usually includes a great multitude of potential explanatory factors. A key challenge is to determine whether the observed or assumed relationships are true, which seemingly more or less has been neglected in many reported studies based on action research (cf. Sørensen, 1992).

Action research also implies close cooperation and interaction between researcher(s) and subjects, and thus the threat of reactivity is prevalent. How this threat has been handled, and whether the reactivity problem has been solved seem partly neglected in most action research studies.

Longitudinal research in context, with cycles of observations, interpretations, actions and reflections allows, in principle, for understanding, construction and test of explanations, as well as modifications and learning. For the expert researcher action research also allows for (partially) the coding and communication of previously uncodified knowledge. Thus there is little doubt that action research has the potential of producing important and useful knowledge of people in context. It is probably also possible to examine the generalizability of such findings by systematic comparisons of findings generated in other settings, and/or by conducting more extensive research to examine the robustness and generalizability of findings acquired through such research. Action research involves multiple research activities, and the action researcher is in principle confronted with more challenges than the traditional researcher.

Figure 1 gives a crude characterization of activities the researcher must cope with in action research. Even though the list of activities involved is not complete, the figure serves the purpose of demonstrating some of the challenges to be handled by the action researcher: She/he must:

- be able to make adequate observations (and select and make use of other available data) (1);
- interpret and make sense of the observations, which requires conceptualization and theory (model) building skills (2);
- plan (and execute) (adequate) actions (3);
- plan, collect, analyze and interpret data to examine the outcome of the action (4 and 5), etc.

This shows that action research presumes important skills regarding observing and interviewing (and other data collection techniques), adequate theoretical knowledge that allows for observation and interpretation, creativity and ability to construct explanations (theory), methodological skills to examine outcomes of proposed action. Inspection of
conducted studies, indicates, however, that action researchers “have forgotten to” report in detail their research activities and how they “step-by-step” have arrived to their interpretations and actions, which actually means that the knowledge creation of action research is partially neglected in the literature. This has certainly contributed to the negative image of action research within the traditional research community (cf. Sørensen, 1992).

In order to legitimate action research detailed recording of observations and events to allow for detailed re-examination of reported findings is needed (cf. Kirk and Miller, 1986). To do so is, however, a rather demanding task. There is actually only a few action researchers which have made major contributions to the scientific community. These contributions relate primarily to different perspectives on learning, and are to a substantial degree related to the researchers’ own experiences, (see, e.g. Argyris (1983) and Revans (1982)).

Another possibility for action research to contribute to present insights is by criticizing theory. There is little doubt that the action researcher becomes a part of the system she/he studies, and where most of the researcher’s time and attention is devoted to activities and changes in which she/he is involved. The research approach may imply that the researcher is becoming a practitioner, and may acquire the characteristics of a practitioner as well. For example, the researcher’s knowledge may increasingly become more tacit in nature, and the understanding of the real world may become more deviant from theories previously acquired. An intuitively useful and probably efficient way of using knowledge from action research is thus to criticize theory from the perspective of practice, which may definitely deviate from the “world view” reflected in context-free theories as discussed above. Perhaps this is the real challenge for action research?

Notes
1. For recent critique of the falsification criterion, see Meehl (1990).
2. There are also other differences between action research and participatory research related to level of analysis and guiding theory (for detailed discussion, see Brown and Tandon, 1983).
3. Comparisons can equally well be done with traditional, cross-sectional surveys, probably the most frequently used in business research. The reason for not doing so is that – from a research design point of view – cross-sectional surveys represent a weaker design than the experiment to arrive at causal knowledge, i.e. a prime purpose in “traditional” research.
4. Randomization is not the same as “control”, but allows for the impact of outside variables to be randomly distributed between control and test group(s). “Control” in contrast is exercised by explicitly taking the impact of outside variables into account (for detailed discussion, see Cook and Campbell, 1978).

References


