December 1999

Action Research For Information Systems

Richard Baskerville
Georgia State University

Action Research For Information Systems

Richard Baskerville, Georgia State University, baskerville@acm.org

This tutorial provides an introduction and "how-to" overview of the action research methodology within the context of information technology and qualitative information systems research. The introductory material will deal with conflicting definitions of action research and the appropriate application of this technique in particular information technology settings. The how-to overview will focus on the participatory and clinical forms of action research. The practical overview will conclude with a discussion of criteria for evaluating the effectiveness of action research and the relationship between action research and consulting.

Action research is a method that solves immediate practical problems while expanding scientific knowledge. It is strongly oriented toward collaboration and change involving researchers and subjects. Typically it is an iterative research process that capitalizes on learning in both researchers and subjects in the context of the subjects' social system. Information systems (IS) is an appropriate field for the use of action research methods because it is a highly applied field. Action research methods are rather clinical in nature, and place IS researchers in a "helping-role" within the organizations that are being studied. To some, action research is the "touchstone of most good organizational development practice" and "remains the primary methodology for the practice of organizational development" (Van Eynde and Bledsoe 1990, p. 27). Action research is also closely associated with systems methods, and is tightly embedded in soft systems methodology (Checkland and Scholes 1990).

The use of the action research method in IS is rising. While action research represented only a tiny fraction of major IS research articles in the mid-1980's, a longitudinal study extending across the 1970's, 1980's and 1990's reveals a steadily rising number of significant IS action research articles (Lau 1997). Of the 30 IS action research journal articles published between 1971 and 1995, nearly half of these were published in the 1991-1995 time period. Although the successful use of the technique attracting increasing journal attention, this is a minor technique. Action research is not founded on a positivist model of science and cannot be evaluated on the basis of positivist criteria. (Susman and Evered 1978). Action research assumptions promote subjective over objective observations, understanding over universal laws, and contextual realism over laboratory reductionism.

Forms Of IS Action Research

It may appear that there are conflicting definitions of action research. This is because action research is no longer a single method, but has become general class of approaches that take a variety of contrasting forms. This can be confusing because the oldest forms of action research (*e.g.,* the Lewin model and the Susman model) were considered to be rather similar in their approach and are still referred to as "the" action research method. However, other forms have since evolved including participatory action research, action science, clinical field work, *etc.*

Action research, in all its various forms, is characterized by (1) its multivariate social setting, (2) its highly interpretive assumptions about observation, (3) intervention by the researcher, (4) participatory observation and (5) the study of change in the social setting. Action research is also characterized by intervention experiments that operate on problems or questions perceived by practitioners within a particular context (Argyris and Schön 1991). Although the various forms of action research may distinguish themselves by imposing other additional characteristics, each form shares these five characteristics (Baskerville and Wood-Harper 1998). For example, participatory action research is distinguished by the additional characteristic involvement of the practitioners as both subjects and co-researchers. "It is based on the Lewinian proposition that causal inferences about the behavior of human beings are more likely to be valid and enactable when the human beings in question participate in building and testing them" (Argyris and Schön 1991, p. 86).

Participatory Action Research

In its origins, the essence of action research was a simple two stage process. First, the *diagnostic stage* involves a collaborative analysis of the social situation by the researcher and the subjects of the research. Theories are formulated concerning the nature of the research domain. Second, the *therapeutic stage* involves collaborative change experiments. In this stage changes are introduced and the effects are studied (Blum 1955).

Lewin's original model of action research included iteration of six phased stages (Lewin 1947). However, these were revised by Susman (1983) as the stages: Establish and maintain a *client-system infrastructure*, a phase in which an agreement is specified that constitutes the research environment. It provides the authority, or sanctions, under which the researchers and host practitioners will collaborate and specify actions that should benefit the client and contribute to science.

Diagnosing corresponds to the identification of the primary problems that are the underlying causes of the organization's desire for change. This involves a self-interpretation of the complex organizational problem, not through reduction and simplification, but rather in a holistic fashion. This diagnosis will develop certain theoretical assumptions (*i.e.,* a set of working hypotheses) about the nature of the organization and its problem domain.

Researchers and practitioners then collaborate in *action planning*. This activity specifies organizational actions that should relieve or improve these primary problems. The discovery of the planned actions is guided by the theoretical framework, which indicates both some desired future state for the organization, and the changes that would achieve such a state. The plan establishes the target for change and the approach to change.

Action taking then implements the planned action through intervention into the client organization by researchers and practitioners. Forms of intervention strategy include directive, in which the research "directs" the change, or non-directive, in which the change is sought indirectly. Intervention tactics include the recruiting of intelligent laypersons as change catalysts and pacemakers. The process can also draw its steps from social psychology, *e.g.,* engagement, unfreezing, learning and reframing. Following the actions the collaborative team *evaluates* the outcomes. They determine whether the theoretical effects of the action were realized and whether these effects relieved the problems. This evaluation prepares a framework for the next iteration of the action research cycle (including the adjustment of the hypotheses).

The activity of *specifying learning* is an ongoing process throughout the cycle. This activity directs the knowledge from the research to three audiences. First, organizational norms may be restructured as a reflection of the learning. Second, the collaborative team needs foundations for diagnosing in preparation for further action research intervention. Third, the scientific community should know of the success or failure of the theoretical framework underlying the intervention.

Participatory action research extends this model with more closely collaborative and synergistic roles for the researcher and subject. Instead of placing responsibility for theorizing on the shoulders of the researcher, this activity is shared with client participants as co-researchers. Researchers and client professionals each bring their distinctive sets of theoretical knowledge into the action research process. Action researchers bring their knowledge of action research and general social theories. Client participants are expected to introduce situated, practical theory into each stage of the action research process. As a result, the social setting will more likely undergo a self-reorganizing process rather than one which has been externally determined by researchers.

In participatory action research, it is not necessary for researchers to extensively research client theory in anticipation of action planning. Such research may even be futile to a degree, since the researcher cannot acquire the depth of understanding that client professionals achieve through years of living within the social context under study.

Clinical field work

Edgar Schein (1987) contrasts the clinical perspective in field work from other ethnographic techniques. This clinical perspective regards very highly trained professionals who get involved in a helping role with individuals, groups, communities or organizations. This highly trained "helping" role implies that the typical involvement of the researcher is more facilitative than collaborative.

The study subjects typically initiate and drive a clinical enquiry, seeking help with an immediate problem. The client expects to pay fees. An action-change study model then operates that is more conceptually normative (improve the problem situation) than participatory action research and narrowly focused on certain detailed data regarding a particular problem rather than a general theory area. The study is validated by an improvement in the problem situation as a result of the actions. The achievement of this validity means that the study is primarily motivated by organizational development and the scientific knowledge is more of a by-product.

Schein contrasts this type of study with ethnography, which is typically initiated and driven by the researcher without fees. An ethnographic study model typically seeks to understand the client system without perturbing it, and achieve a completeness of description such that the total situation can be understood by the reader. Validation in ethnography rests on replicability and internal consistency in the data. This contrast is important because the roles of clinician and ethnographer may become intertwined in settings where the situation demands the researcher switch roles. For example, an ethnographer may become drawn into action (thus becoming a clinician) or the clinician may be unable to effect action (thus becoming an ethnographer).

Unlike participatory action research, a clinical method of inquiry is highly situational, and a concrete set of steps or stages cannot be easily prescribed. The research structures have to be very fluid. The ideal process model is typically viewed as linear rather than iterative possibly following the engage-unfreeze-move-freeze-disengage model of process consultation (Schein 1969). The researcher also has as stronger ethical obligation only to suggest actions that improve the client's problem situation and not to consume resources for scientific goals. There may be a need for considerable advance study of theory and principles related to the clinical setting on the part of the researcher. Researcher

training, skills and sense of responsibility are of increased importance, along with a focus on the ethical and legal responsibility to avoid malpractice.

Criteria for Evaluating Action Research

An analysis of the action research literature regarding evaluation criteria reveals four key process sets necessary for participatory action research . These include (1) processes that assure that theory that has been informed by action, (2) processes that assure adequate client participation in determining action, (3) processes that assure appropriate researcher involvement, and (4) processes that achieve an adequate understanding of the goals of the action.   It should be possible for evaluators to reconstruct these processes in order to determine the quality of an action research project.

References

Argyris, C., and Schön, D. (1991) "Participatory action research and action science compared." in *Participatory Action Research*, (W. F. Whyte, ed.), Sage, Newbury Park, N.J., 85-96.

Baskerville, R., and Wood-Harper, A. T. (1998) "Diversity in Information Systems Action Research Methods." *European Journal of Information Systems*, 7 (2), 90-107.

Blum, F. (1955) "Action research--A scientific approach?" *Philosophy of Science*, 22 (1), 1-7.

Checkland, P., and Scholes, J. (1990) *Soft Systems Methodology in Practice*, J. Wiley, Chichester.

Lau, F. (1997) "A review on the use of action research in information systems studies." in *Information Systems and Qualitative Research*, (A. Lee, J. Liebenau, and J. DeGross, eds.), Chapman & Hall, London, 31-68.

Lewin, K. (1947) "Frontiers in group dynamics II." *Human Relations*, 1 (2), 143-153.

Schein, E. (1969) *Process Consultation: Its Role in Organizational Development*, Addison-Wesley, Reading, Mass.

Schein, E. (1987) *The Clinical Perspective in Fieldwork*, Sage, Newbury Park, Calf.

Susman, G. (1983) "Action research: a sociotechnical systems perspective." in *Beyond Method: Strategies for Social Research*, (G. Morgan, ed.), Sage, Newbury Park, 95-113.

Susman, G., and Evered, R. (1978) "An assessment of the scientific merits of action research." *Administrative Science Quarterly*, 23 (4), 582-603.

Van Eynde, D., and Bledsoe, J. (1990) "The changing practice of organization development." *Leadership & Organization Development Journal*, 11 (2), 25-30.