MIS Quarterly

SPECIAL ISSUE

SPECIAL ISSUE ON ACTION RESEARCH IN INFORMATION SYSTEMS: MAKING IS RESEARCH RELEVANT TO PRACTICE— FOREWORD

By: **Richard Baskerville**
    Senior Editor, Special Issue

    Michael D. Myers
    Senior Editor, Special Issue

This special issue of *MIS Quarterly* is devoted to the subject of action research in information systems. The senior editors of this Special Issue were Richard Baskerville and Michael D. Myers. The deadline for submission was September 30, 2002.

A total of 29 manuscripts were submitted. Of these, six made it though two or ·more review cycles. These six are presented in this issue. Another two manuscripts are still in the review process, but the disposition of these had not been determined by the publication deadline for this issue. If one or both of these manuscripts are accepted, they will appear in a future issue of *MIS Quarterly.*

Before we describe the articles in this issue, we will first explain our rationale for publishing a special issue on action research in information systems.

Why Action Research and Information Systems?

There have been frequent calls for IS researchers to make their research more relevant to practice (Zmud 1998), yet it seems IS researchers continue to struggle to make excellent research practically relevant. We believe action research methods provide one potential avenue to improve the practical relevance of IS research. Action research has been accepted as a valid research method in other applied fields such as organization development and education. (e.g., Carr and Kemmis 1986; Elden and Chisholm 1993; Van Eynde and Bledsoe 1990). It has been described as "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). We see no reason why action research should not be accepted in the field of information systems.

Action research aims to solve current practical problems while expanding scientific knowledge. Unlike other research methods, where the researcher seeks to study organizational phenomena but not to change them, the action researcher is concerned to create organizational change and

simultaneously to study the process (Baburoglu and Ravn 1992). It is strongly oriented toward collaboration and change involving both researchers and subjects. Typically it is an iterative research process that capitalizes on learning by both researchers and subjects within the context of the subjects' social system. It is a *clinical method* that puts IS researchers in a *helping role* with practitioners.

The essence of action research is 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. In this stage, changes are introduced and the effects are studied (Blum 1955). Action research became highly participatory in the 1990s, with closer collaboration and synergy between the researcher and subject. Theorizing is shared between researchers and client participants because each brings their distinctive sets of knowledge into the action research process. Action researchers bring knowledge of action research and general theories, while clients bring situated, practical knowledge.

Why a Special Issue of MIS Quarterly? ▬▬▬

In the call for papers we stated that "the aim of the special issue is to promote action research by publishing empirical studies that can serve as models ("exemplars") of how to do action research." We wanted to publish exemplars because very few such exemplars are currently available in information systems. Our intention was to engage in a constructive dialogue with authors so that the final product would reflect the highest standards for work in the action research tradition. Also, we stated that we would make every effort to ensure that manuscripts received both knowledgeable and respectful reviews. At the same time, however, we wanted to ensure that only work of the highest standard is published.

There were three requirements for the acceptance of articles for the special issue. First, the authors must demonstrate a contribution or potential contribution to practice (the *action*). Second, the authors must demonstrate a clear contribution to research (the *theory*). Third, the authors must identify in the methods section of the manuscript the criteria by which to judge the research and show explicitly how the research in their manuscript meets those criteria. It was this tripartite goal that made the review process for this special issue particularly challenging. The papers were subject to the normal high standards of review at *MIS Quarterly*.

We believe we have managed to put together an excellent set of action research articles. It is our hope that the articles that follow will be referenced as much for their substantive findings as for their methodological contributions.

Where Did Action Research Originate? ▬▬▬

Action research originated in the social sciences out of the massive social changes of World War II. Kurt Lewin (1947) developed the method at the Research Center for Group Dynamics (University of Michigan) in order to study social psychology within the framework of field theory. Independently the Tavistock Clinic (later the Tavistock Institute) developed a similar method as a sort of psycho-social equivalent of operational research (see Trist 1976; Warmington 1980). Scientists sought to understand the complex causes of widely variant "social illnesses" and the idea of social action arose. Scientists intervened in each experimental case by changing some aspect of the patient's being or surroundings. Since scientist and therapist were locked together in this search, the scientists were participants in their own research. The effects of the actions were recorded and studied. In this manner, a body of knowledge was developed about successful therapy for social illnesses.

Lewin's work sought a general theory of how such social change could be facilitated. His original model of action research included iteration of six phased stages: (1) analysis, (2) fact finding, (3) conceptualization, (4) planning, (5) implementation of action, and (6) evaluation. It has been much adapted in later years. Scholars researching socio-technical systems have been using forms of action research for many years. Enid Mumford drew on her experience in the Tavistock Institute to develop an action research style of participatory design called ETHICS (Mumford and Weir 1979) and Trevor Wood-Harper was an advocate for the use of the method for IS research in the early 1980s (Wood-Harper 1985).

What Are the Essential Premises of Action Research? ■■■■■■

We suggest the underlying philosophy shared by most forms of action research is *pragmatism*. As a philosophy, pragmatism concentrates on asking the right questions, and getting empirical answers to those questions. On its own it does not explain very much, but provides a method to help explain why things work (or why they do not work).

There are four key action research premises that arise from pragmatist philosophy. The first premise is Peirce's tenet that all human concepts are defined by their consequences. The second is James' tenet that truth is embodied in practical outcome. The third is Dewey's logic of controlled inquiry, in which rational thought is interspersed with action. The fourth premise is Mead's tenet that human action is contextualized socially, and human conceptualization is also a social reflection. We will briefly expand on each of these premises.

Consequences Define Human Concepts

Charles S. Peirce (1839-1914), a chemist by training, argued that all human concepts are defined by their consequences:

In order to ascertain the meaning of an intellectual conception, one should consider what practical consequences might conceivably result by necessity from the truth of that conception; and the sum of these consequences will constitute the entire meaning of the conception. (Peirce c 1905, p. 6)

In order to bring any concept into clear focus, human beings need only determine the human purpose and consequences of the thought. Rational cognition and rational purpose are inseparably connected. Importantly for understanding the essential idea of pragmatism, Peirce's position assumes human volition. In order to experiment, or to even determine purpose, people must have independence of will to decide what actions they could choose to undertake.

Practical Outcome Embodies Truth

While Peirce emphasized ideas and concepts, William James emphasized truth. James (1842-1909) was trained as a physician and psychologist. For James, truth is embodied in practical outcome. From an action research perspective, the central contribution of James' pragmatism is the shift from Peirce's presumption of realism to one of nominalism. Peirce clarified the meaning of concepts by their consequences. James, the psychologist, expanded this as a description of the actual process of human reason: a theory of thought and action. But further, James suggests that pragmatism provides a theory of truth:

> Mind engenders truth upon reality....In point of fact, the use of most of our thinking is to help us change the world. We must for this know definitely what we have to change; and thus theoretic truth must at all times come before practical application. (William James quoted in Bjorkman 1907)

James extended pragmatism to encompass the innumerable ways people could make their

thoughts agree with reality. He was pluralist in recognizing this multiplicity of human truth. He used pragmatist assumptions as a functional approach to human psychology. Psychology could be partly understood by a never-ending human search for truth. The search for truth, and the continuous reinforcement of truth, was centralized in the mind. The process for this search and reinforcement was, for James, the *pragmatic method*. Human thought can only be revealed in human action. Practice is central in discovering and revealing this truth. "The pursuance of future ends and the choice of means for their attainment are thus the mark and criterion of the presence of mentality in a phenomenon" (James 1890, p. 8).

Logic of Controlled Inquiry

A third key notion of pragmatism found in action research is Dewey's logic of controlled inquiry, in which operations of rational thought are interspersed with action. John Dewey (1859-1952) was focused on learning and education. Pragmatism, for Dewey, becomes a theory of inquiry. Dewey's purposes included the search for a better understanding of how people created structure as they learned. Ideas take on logical forms in a process Dewey called controlled inquiry, a process Dewey found to be common to both rigorous science and everyday common sense. Dewey defines inquiry as

> the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole. (Dewey 1938, p. 104)

Dewey discovered a common five-element pattern to all forms of human inquiry: (1) An indeterminate situation, (2) formulation of a problem, (3) determination of a solution, (4) reasoning, (5) operationalization of facts. For Dewey, inquiry is the directed or controlled transformation of an indeterminate situation into a determinately unified one. The transformation involves two kinds of

operations. One kind is conceptual: ideation of possible ways and ends of resolution that instigate new observations. The other kind is practical: observational activities that include experimental operations that change existing conditions. The pattern of inquiry requires action. Reasoning can provide the means for change, but cannot effect the change. Only action, directed by reasoning, can reorder the setting and produce a settled and unified situation.

Social Context of Action

The fourth pragmatist assumption that underlies most forms of action research is Mead's tenet that all human action is socially reflective. George Herbert Mead (1862-1931) was trained in philosophy and psychology, and recognized that any human behavior that elicits a response from another individual constitutes a *social act*. We become aware of these responses to our action, and adapt socially to these responses. In other words, any acting individual will respond to his or her own acts to some degree as other individuals respond. Our social consciousness is a reflection of ourselves mirrored in the reactions of others. A social act makes one a *social self*, a self-observer and responder. As a pragmatist consequence, Mead realized that human social interaction shapes human action, and if the key to pragmatism is action leading to practical consequences, then the social setting will shape concepts, truth, rationality, and practical action itself. These actions, with reference to the others, will call out

> responses in the individual himself— there is then another "me" criticizing, approving, and suggesting, and consciously planning, i.e., the reflective self. (Mead 1913, p. 377)

Mead completes the most common pragmatist assumptions underlying action research by adding the social dimension. Action is socially relative, and this makes the action researcher a participant observer. Further, it explains why collaborative

teams are essential. In order for action to be formulated in the social setting, the formulators must be socially situated in that setting. A collaborative team is necessary to provide the "others" who will invoke the responses in the reflective self. Otherwise, action is not rationalized or operationalized in the reality of the social world.

It also means that there must be a collaborative team involved in reasoning, action formulation, and action taking. The social setting is necessary to provide the social reflection necessary for formulating action as a social act. This situates reasoning and action in the social reality of the human problem setting.

How Is Action Research Conducted? ■■■■■■■■

The four pragmatist premises form the major set of assumptions underlying the action research methods of Lewin, the Tavistock Institute's researchers, and others. While a great deal of other important philosophy has been written about pragmatism and action research, we believe these four premises are still the most essential.

First, it is necessary to establish beforehand the purpose of any action. This necessity is at the roots of Peirce's pragmatism. To clarify our concepts, the action research must explicate the theoretical purpose underlying the action. This also means that the theory must be explicit before the action is taken, otherwise there is a risk that the action is purposeless, and therefore meaningless.

Second, there must be practical action in the problem setting. James tells us that this is necessary to reveal the relative truth-value of the theoretical concepts underlying the action.

Third, the practical action must inform the theory. The theory must be adjusted according to the practical outcome of the action. This necessity arises from James, whose method claims the theory must be validated by its practical outcome. It also arises from Dewey's logic of inquiry, which states that practical action and rational operations must be interspersed in order for learning to take place.

Fourth, the reasoning and action must be socially situated. This social situation means that the action researchers must be participant observers.

How Do All of the Articles Use Action Research? ■■■■■■■■

All of the six articles in this special issue use action research, but they illustrate the considerable variety in the forms of action research: the forms of action research used here include canonical action research, collaborative practice research, participatory action research, and dialogical action research. In addition to describing the research method and findings, we asked the authors to explicate the criteria by which readers might recognize the validity of their findings. Our purpose in asking for this additional commentary was to help provide a set of emergent standards by which we may be able to measure the validity of future action research articles that follow these forms.

The first article, by Jørn Braa, Eric Monteiro, and Sundeep Sahay, is entitled "Networks of Action: Sustainable Health Information Systems Across Developing Countries." This article looks at the pivotal importance of networks in ensuring the sustainability of action research interventions. They base their analysis on an ongoing, large-scale action research project within the health care sector in a number of developing countries.

The second article is entitled "Informating the Clan: Controlling Physicians' Costs and Outcomes." Written by Rajiv Kohli and William J. Kettinger, the article reports on a successful attempt of a hospital's management to "informate the clan" of physicians to reduce clinical procedural costs and adopt better practices. This paper contributes to a better understanding of how to informate autonomous professionals.

The third article, by Jakob H. Iversen, Lars Mathiassen, and Peter Axel Nielsen, is entitled "Managing Risks in Software Process Improvement: An Action Research Approach." The authors used a particular form of action research, called *collaborative practice research*, to study software process improvement initiatives in four Danish software organizations. The authors propose an approach to understand and manage risks in software process improvement teams.

The fourth article, by Rikard Lindgren, Ola Henfridsson, and Ulrike Schultze, is entitled "Design Principles for Competence Management Systems: A Synthesis of an Action Research Study." Using *canonical action research*, the authors developed and tested design principles for competence management systems.

The fifth article is entitled "Small Business Growth and Internal Transparency: The Role of Information Systems." The authors, Christopher T. Street and Darren B. Meister, used *participatory action research* to study the ways in which a small business management team developed an IS-enabled solution to address their growth needs. They propose the concept of *internal transparency* as an important outcome of organizational effectiveness.

The sixth article, by Pär Mårtensson and Allen S. Lee, is entitled "Dialogical Action Research at Omega Corporation." In this paper, the authors propose the use of *dialogical action research*. In dialogical action research, the intervention takes the form of one-on-one dialogues between the researcher and practitioner.

Acknowledgements

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