An Invited Article

Social Science Research in a Positivistic Community

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ABSTRACT

The philosophy of science will be examined to define the boundaries of research in the social sciences. What are universities/governments doing to promote research about social issues? Are they looking only at the traditional model of scientific research that is familiar to them? Experimental research is highly familiar to them but social science research is unfamiliar, and this poses the threat of taking research administrators to the cusp of the unknown and into ways of knowing with which they are unfamiliar.

Key words: research philosophy, social science research, educational research

INTRODUCTION

This article will feature the concept of "knowing" and highlighted will be "knowing more through research." Ray (1987) wrote that research is not a process of proving something but a process of discovering and learning and that problem solving, thinking, learning, research and discovery can be viewed as one and the same process because each leads to knowing more either at a disciplinary or personal level.

How do research directors view social science research? What is the philosophical background of most administrators of research funds? How can social science researchers make contributions to knowledge in the research conducted in a nation? Are the administrators tending to look only at the traditional experimental paradigm, or are they willing to search in other locations, with other means, to move down that road to "knowing."

Here, Krathwohl's (1985) definition of "knowing" is used because he notes that research will not always result in the ultimate "to know," but as progressing on the roadway to "knowing." That is, research moves toward the solution of problems, but does not always entirely solve the problem. Röling (1974) wrote that Social science research is not geared to make generalizations but as decisions, a formula for action. Warmbrod (1993) called for researchers to "understand and know". Therefore, research is more a process of evolution than revolution and often seeks to understand as well as know.

Social science compared to experimental research

One assumption needs to be made clearly and that is that discipline-specific, basic research programs are needed and will continue. This article is not an attack upon the research programs in the science or technology disciplines. However, much of what is presented will not be related to discipline-specific, basic research, but relate to "subject matter research" or "problem solving" research (Johnson, 1986), as illustrated in Figure 1. Bonner (1986) related how

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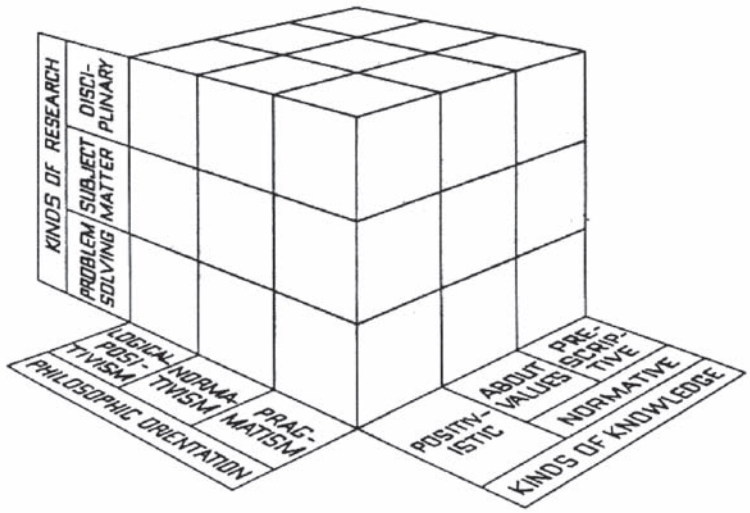

Figure 1 Interrelationships among kinds of research done, philosophies used, and kinds of knowledge generated.

U. S. research universities undervalue subject matter and problem-solving research as compared to discipline-specific research. Enarson (1989) argued that the "research university" and the traditional land grant university mission of serving people may be incompatible. Likewise, the proposition will be forwarded that, in the interests of achieving the goals of university outreach, meeting citizens' expectations, and gaining public support for the overall institutional research programs, universities must expand pragmatic inquiry (applied research, subject matter or problem solving).

Research in the social sciences will not emanate from biotechnology, "Big Science," or macroeconomics but from concerns about people, and perhaps could be termed "social good" research. Many university departments are now comprised of several social science disciplines. University and governmental research administrators do not often clearly understand or acknowledge the knowledge base of these social science disciplines. Granted, neither do social science researchers do a sufficiently adequate job of clearly communicating how their research ties closely with the problems of the real world, how the research conducted is related to national research agendas, or how their research would fit not only into the national agenda but also numerous international agencies, e.g., ILO, World Bank, FAO, WHO, UNDP, UNESCO.

Social science research tends to be toward the "soft" on a soft-hard continuum, and toward the "applied" on an "applied-basic" continuum. Illustrating from one social science area, Warmbrod (1993), quoting from Buriak and Shinn (1989), opened his address to the Southern Agricultural Education Meeting by stating that agricultural research station directors perceived that:

> Agricultural education research is "soft," does not have clearly defined objectives or hypothesis, lacks focus and rigor, is not programmatic, and is not sufficiently funded. It is conducted by persons with weak training in research methodology who (1) cannot identify important research problems, (2) do not value research endeavors, (3) conduct research for promotion and tenure rather than for its importance and utility, and (4) have a limited amount of time assigned for research.

Given this scathing indictment for agricultural education research by agricultural research directors, one would hardly be surprised at the reactions basic

agricultural research colleagues would have. These colleagues have a definite image of what constitutes good research, and agricultural education research does not fit their model. Their definition of research is often limited by their education and experience. They believe the term research is synonymous with experimentation, and, as in positivistic research; all research "must be driven by hypotheses."

The perception that a branch of social science research have "weak training" in research methods needs to be further considered. Social science researchers have conducted good research and some have been named "Fellows" by their professional association(s), and have international reputations for excellent scholarship. The problem is not poor quality research; the problem is the lens through which discipline-specific, basic researchers view the standards for research. The lens is "positivistic," and has a discipline-specific focus.

Basic researchers perceive that they really understand research! After all, they have been doing research throughout their professional lives, they learned at the bench top with, or at the knee of, their mentors, and they are well-published discipline-specific researchers - they know how to do experimental research. They know the protocols and rubrics of experimental research. When they examine social science research, they see emerging problems, questions, and methods that do not fit with their knowledge base or practice of systematic inquiry -- experimentation.

Therefore, social scientists tend to be in a dilemma and this creates frustration for them. Many social science researchers perceive a bias against their research or discipline. As universities and other agencies move toward interdisciplinary inquiry and project teams are formed, the omission of social science researchers from these groups will not be surprising because discipline-specific, positivistic researchers do not understand what social science does or how it can contribute to the solution of national problems.

Foundations from philosophy of science

Consider these problems from the perspective of "knowing" and the philosophy of science. Oliga (1988) summarized the basic elements of Habermas' Interest Constitution Theory (Table 1) and noted that the three different knowledge types implied different methodological approaches -- namely, empirical, hermeneutic and critical methodologies. Habermas proposed that what drives research is the specific interest a researcher has in the knowledge, but that those interests take several forms. This array helps one understand the position of social scientists relative to other science disciplines populated by "empiricists" or "positivistic" researchers. The experimental researcher wants to produce "laws," the interpretive researcher wants to reach "consensus and meaning," and the critical scientist wants to achieve "emancipation" through reasoned choice. Social scientists may be predominately interested in the latter two.

Van Manen (1977) noted that each of the

Table 1 Habermas' Interest Constitution Theory Diagrammed.

Knowledge -constitutive interest	Basis of human interest	Type of interaction	Underlying paradigm	Methodo-logical Approach
Technical (control)	Labor (instrumental action)	Man -- Nature	Functionalist (Experimental)	Empiricism (Positivism)
Practical (understanding)	Communicative interaction	Man -- Man	Interpretative	Hermeneutics
Emancipatory (freedom)	Authority (power)	Man -- Self[*sic*]	Radical/ Critical	Critique

three forms of inquiry is distinctive in terms of (a) its way of looking at people and society, (b) the form of knowledge it produces, (c) its logic in use, (d) its methodologies and techniques, and (e) the use to which the knowledge can be put. Wardlow (1989) and Copa (1984) stated that most of social science research has been positivistic, but many of our problems are too complex for just one mode of inquiry. A measure sometimes employed in some government agencies to assess the quality of a research program is the number of patents generated. In the social sciences, wherein are the discoveries or patents? There are almost none! Our interests are primarily in interpretive and critical science. Yet, most of our preparation courses have been in learning to conduct empirical research. Our methods must be broadened and each paradigm represented in research teams or departments. Broader paradigm representation can be achieved by carefully selecting new researchers with prerequisite skills or through professional development of existing researchers.

The quantitative research paradigm achieves added clarity by examining research according to its *purpose*. The model addressed the purposes or end-sought by the researcher in conducting quantitative inquiry and Table 2 (Selltiz et al., 1976) presents this cogent perspective. This model illustrates that quantitative research can be organized, by purpose, as studies that *explore and describe* "what is" (typically surveys), *explain and predict* phenomena (typically relational research -- correlational or *ex post facto*), and *control* (experimental research). To advance knowledge in a discipline, to explore and describe "what is" is often important. At other times, researchers may wish to explain and predict phenomena. Researchers may also wish to control - to do experimental research -- but that is not the only way of knowing as some basic scientists would propose. When dealing with people, control of the independent variable, manipulation (random assignment of experimental units - people -- to levels of the independent variable) is usually not feasible and often unethical. One purpose (or type) of research does not produce knowledge that is more important than another purpose of research. The accumulation of knowledge in a discipline necessitates that all types of research be conducted. Experiments are driven by hypothesis, as are *ex post facto* studies, but correlational and survey research are often directed by research questions or objectives. Thus, hypotheses are not sacrosanct to all research!

Basic scientists are functionalists – man attempting to examine nature [*sic*]

The methodological approaches of empiricists (those who desire to *contro*l) are used to produce objective knowledge that is independent of the researcher, and replicable in other settings. The knowledge also has value freedom in that it is ethically neutral. The knowledge or "discoveries" produced add to the knowledge base in a discipline or, as in the case of hard systems methods such as engineering, provide technology that produces increased output or more efficient systems of doing things. The philosophy underlying this purpose is positivism. The premise of positivism is that science alone represents the genuine form of human knowledge, and many researchers further believe that any other form of science is non-science and produces pseudo-knowledge or even cognitive meaninglessness or nonsense (Keat, 1981). Popper (1959) argued that while science could be distinguished from non-science, that did not imply an equivalent distinction between sense and nonsense. The second doctrine of positivism posits that knowledge is the explanation

Table 2 Types of quantitative research by purpose.

Purpose: explore and describe	Purpose: explain and predict	Purpose: control
Type:	Type:	Type:
Survey research	Correlational or *Ex Post Facto*	True and quasi-experiments

and prediction of observable phenomena through the demonstration that such phenomena constitute instances of universal laws that remain invariate in all regions of space and time (Oliga, 1988). While science-politics seeks to "scientize" ends, the doctrine of value freedom opposes this, seeking instead a sharp distinction between means and ends, fact and value, science and politics. Keat (1981) pointed out that political issues or moral judgments cannot be justified solely by means of knowledge produced by experimentation. Eisner (1992) explained positivistic believe research is that:

which separates value from fact, that embraces methodological monism, that rests on a foundationalist view of knowledge, that possesses a particular conception of meaning, that regards ethical claims as meaningless utterances, that believes science to be the sole source of knowledge, that seeks to explain "reality" through an appeal to universal laws and that regards measurement as the quintessential means through which reality, whatever it may be, can be represented.

Interpretative (practical understanding) – man understanding Man [*sic*]

The methodology of hermeneutics, or interpretative science, includes the "naturalistic," "hermeneutics as method," and "historical-hermeneutics." Oliga (1988) wrote that the naturalistic perspective includes the phenomenological symbolic interactionism that seeks to explain how social order, as phenomena, emerges from social action and interaction processes, from which shared meaning in turn emerges. Interpretative science takes several forms. Ethnomethodology seeks to explain how people employ various cognitive resources to order and make sense of their everyday activities and make some activities accountable to others. Existentialism is concerned with the central lived qualities of individual human existence and seeks to understand the individual "life-world" from the point of view of those involved, using constructs and explanations that are intelligible in terms of common-sense interpretations of everyday life. A belief of hermeneutics is that social reality is distinctive in character and contains a component missing from natural phenomena; it requires a mode of analysis different from that of mere experimentation. Lakes (1993) suggested that interpretative science would *liberalize* a discipline by presenting the field with socio-cultural understandings of human relations (Lewis, 1990).

Social scientists would certainly find a home in interpretive science as they attempt to make sense, for example, of the relationship between teaching and learning in the classroom, laboratory or workplace. Jax (1984) related that interpretive science was conducted to interpret and give meaning to a given situation and that to provide broad generalizations was not the intent. The researcher takes on the role of the people or group studied and attempts to understand the context of the situation within the framework of the participants. Van Manen (1975) stated the purpose was to understand the ways people subjectively experience life and the world, and Geertz (1973) called for "thick description" that would search for meaning and not laws. Each of these may be highly important to improving the quality of life of people. These studies often see hypotheses emerge from the investigation, but are driven by research questions or objectives, and their outcome is often "problem-fixing" (identification) instead of problem solving.

Radical/Critical (emancipatory) – man understanding Self [*sic*]

Critique, or critical hermeneutics, is an attempt to mediate the objectivity of historical processes with the motives of those acting within them; the aim being *the freeing of emancipatory potential.* The approach seeks to remove barriers to understanding that may be operative, without the individual or groups concerned being aware of them: a critique of ideology (Bleicher, 1980). The task is to render individual and social processes transparent to the actors concerned so that they can pursue their

further development with consciousness and will, rather than remaining the end product of a causal chain operative behind their backs (Oliga, 1988). Habermas (1972) noted that tradition, as a context that includes work and domination, enables as well as restricts the parameters within which people define their needs and interact in order to satisfy them. Such research interests are, thus, driven by the desire to "emancipate" people. Lakes (1992) suggested that the critical theory approach would *democratize* groups by affirming the contributions of social movements in advancing workplace justice and workforce equity. Consider, for example, how critical scientists in Women's Studies have provided new frontiers for women.

Freire (1987) stated that the clients of education are objects of persuasion that can render them more susceptible to propaganda, but this cannot happen if they have the alternative option of *liberalization* (emancipation), i.e., if they are critically aware of their situation, then they can act on it. Coomer (1984) related that critical science is conducted to address normative and value questions. She noted that such research is conducted to reduce frustrations experienced by people as they attempt to deal with technical and political controls or regulations. For example, the frustrations being felt and expressed by rural citizens about rural flight issues - young people are moving to cities. Critical scientists are needed to contribute to the understanding of these problems. Again, these researchers' potential contributions may not be valued by traditional "positivitistic/experimental" researchers who perceive all research to be driven by hypotheses and the experimental manifest.

Habermas (1973) provided a definition of "critical" as the potential people have for self-reflection and self-determination in a social structure where the institutions (family, government, education) appear to acquire an invisible compulsion of their own and become a part of the individual's view of what is real, i.e., institutions merge with nature: what is real, what exists, and what is not likely to change. New knowledge would address whether or not these institutions are appropriate and, because they are operationalized by people, they can be studied and changed. Such research really asks whether or not these existing norms are absolute, i.e., contrasts the way things are with the way things could or should be. Education researchers would quickly note that one goal has always been to prepare people to achieve self-determination, self-realization and self-integration (Broudy, 1962).

Kinds of research knowledge sought

Johnson (1986) presented, Figure 1, a view of research that has an integrative perspective (Miller, 1989). His discussions of the interrelationships among the kinds of research conducted, the philosophies used, and the kinds of knowledge generated helps one understand the differences in the orientation of researchers. The kinds of research were classified as disciplinary, subject matter and problems solving. The kinds of underlying philosophical orientations were logical positivistic (reductionism), normative, and pragmatic. The kinds of knowledge produced were described as positivistic, normative (about values) and normative prescriptive (about right/wrong). Expanding on his terminology and borrowing from the Greeks, the impulses behind science could be described as *scientia, techni, and praxis* (see Table 3). *Scientia* is the drive to know and find out how and why the world is as it is, and has led to the reductionism idea that to understand things we break the problems down into small bits, i.e., Descartes' second theorem: to divide each of the difficulties into as many parts as might be possible and necessary in order to solve it (Pritchard, 1968). This is the principle of analytical reduction that has characterized the Western research tradition (Checkland, 1981); thus, evolved the way we think about conducting science and some would say should be the most celebrated proposition in the history of humankind. The *techni* component is our drive to do things better; to achieve practical ends. This is the basis of research in areas like engineering, management,

Table 3 Some distinctions among research and educational traditions.

	Scientia	*Techni*	*Praxis*
1. Focus	Learning for Knowing	Learning for Doing	Learning for Being
2. Knowledge produced	Propositional	Practical	Experiential
3. Structure	Disciplines	Crafts	Issues
4. Teaching style	Exposition	Demonstration	Facilitation
5. Teacher role	Expert on subject	Master of craft	Co-learning collaborator
6. Teaching Strategy	Lectures on propositions	Demonstrations & "Hands-on"	Practicum & internship
7. Basic philosophy	Positivism	Utilitarian (pragmatic)	Constructivism
8. Research style	Basic (Experimental)	Applied (developmental)	Action (participative)
9. Research goal	Abstract general knowledge	Solutions to work place problems	Local theory and action for change
10. Researcher role	Producer of knowledge	Solver of technical problems	Co-creator of situation improvements

systems analysis, economics, and the process-product research in education as described by Gage (1989). Mathematical formula (models or paradigms), as explanations, may be the end sought.

The *praxis* component is our desire to transform the direct experiences of people, places, events and things, and is essentially experiential in nature. This component is based on certain issues and situations that cannot be unequivocally described, is unstructured and subject to continuous change and dependent on the perceptions of the individuals or groups. Much of social science research has evolved as a result of this impetus. Reductionism (*scientia*) is often non-productive in addressing these problems.

Burkhardt (2001) and Burkhardt & Schoenfeld (2003) relabeled these in more modern terms as the *scientia* being science research, the *techni* being engineering research and the *praxis* being humanities research. They note that science research is done to understand how the world works, engineering research is done to help the world work better, and humanities research is done to add new insights without empirical tests. Note the similarities to the interest areas of Habermas.

Disciplinary research (Johnson, 1986) is that research designed to improve a discipline and may be of known or unknown relevance for immediate practical problems. The researcher is often very much a positivist in philosophy and is most often seeking positivistic knowledge, i.e., *scientia*: reductionism or science research. The quest of many social science researchers has been to conduct disciplinary research. After all, if the physicists at the university can do it, should not our discipline look just as good? Academic researchers in the social sciences will experience unbridled pressure to be discipline-specific researchers as most journals are built around disciplines. The "top rated" journals are discipline-specific. Academic researchers are rewarded for publishing in top rated journals.

Subject matter research is multidisciplinary research on a subject of interest to a *set* of decision makers facing a *set* of practical problems (Johnson, 1986). Rural health research might fall into this category and involve persons from education,

nursing, sociology, anthropology, medicine, economics, etc. The task of finding journals in which to publish subject matter research is daunting and those found are not often "top rated" journals.

Problem solving research, according to Johnson (1986), is designed to solve a specific problem for a specific decision maker. Again, finding journals or conferences devoted to contextually driven problems is a difficult for researchers.

The kinds of knowledge sought by the researcher presents another perspective on research. The reductionists most often seek *positivistic knowledge*: discovery, fact, principle or law. This is synthetic knowledge that deals with characteristics of conditions, situations or things in the real world (Johnson, 1986). When researchers want to know about the goodness/badness of conditions, situations or things; they pursue *knowledge of values. Prescriptive knowledge* deals with rightness/wrongness -- what ought to be or what ought to be done, in the future tense; or what should not have been done in the past tense.

The philosophical orientation of researchers dictates, to a large extent, how they view a problem. Much has been written about *positivism* in the social sciences because of the research paradigm debate about quantitative versus qualitative research. Lewis (1990) noted that *normativism* is a collection of philosophies addressing value, goodness/badness and rightness and wrongness and generally result in prescriptive knowledge about what would be the best thing to do. *Pragmatic* philosophy's test for knowledge is "workability." Positivists might describe pragmatic researchers as "storytellers" describing particular situations that do not result in the "value free," reductionist knowledge they seek. Runes (1961) noted that pragmatism is always a doctrine of meaning. Copa (1984) reaffirmed this contention about "meaning" when he stated that the three categories of questions to be addressed by researchers are those of (1) meaning, (2) ends, and (3) ways and means. Pragmatists believe that the hypothesis that "works" is the "true" one (Runes, 1961). William James [1907 (1955)] noted that pragmatic philosophy implies the attitude of looking away from first things, principles, "categories," and supposed necessities; and to looking toward last things: fruits, consequences, facts.

Since the seventeenth century, a bias has predominated research in favor of the scientific method of reductionism as being able to explain everything in the world -- a method to derive events occurring at one level of organization from those occurring at another level, e.g., physics was derived from chemistry. Indeed, the contributions that basic science has made to fields such as medicine, agriculture, technology, etc., in the past century is simply astounding. However, when the complexity of the problems increased as one went from restricted sciences to unrestricted sciences, positivism was found inadequate. The approach completely failed when applied to the social and behavioral sciences. A complementary paradigm must emerge that looks at the "wholes," much as organismic biology emerged from among the more positivistic biologists. Thus, evolves the concept of "holism" or "systems thinking."

Conflicts

With this backdrop from philosophy, ascertaining why some social science researchers have difficulty in communicating with other researchers about their research, perceiving conflict, and are limited in their participation in the research of positivists is, hopefully, clearer. Our traditions, our philosophies, and our learning related to research methods are couched in the quantitative method but the philosophical issue about the kinds of knowledge to be produced and the kinds of research to conduct remains. Further, social science researchers seek knowledge that results in practical, pragmatic understanding and the research interest is most often in communicative interaction or emancipation. Social science researchers are seldom trying to investigate the Man-nature dialectic, but focus on the Man-Man and/or Man-Self [*sic*]. Regarding the purpose of the research and the type of inquiry, researchers seldom

Table 4 Research by type of purpose.

Purpose	Predict	Understand	Emancipate	Deconstruct
Research type:	Positivism	Interpretative	Critical	Poststructural
		Naturalistic	Neo-marxist	Postmodern
		Constructivist	Feminist	Post-
		Phenomenological	Praxis-oriented	paradigmatic
		Hermeneutic	Educative	diaspora
			Freirean	
			participatory	
			action research	

are conducting experiments, but surveys, correlational and *ex post facto* research predominate.

For educators, positivistic research (Lakes, 1993) upholds rationalistic premises upon which historic industrial practices and labor-management relationships are conducted (Garrison, 1989; Wirth, 1983). Critical theories of feminism, Freirean pedagogy, and neo-Marxism, for instance, attempt to illuminate ideologically-frozen assumptions embedded in normative cultural practices that promote racism, classism, and sexism in work and labor (Lakes, 1993). The critical theory paradigm is openly ideological and advocacy-based research (Lather, 1991).

Swanson (1991) observed that thinking in the social sciences tends to be for one way of doing things and implied that it is time that other ways of knowing be considered, and others have noted similar concerns (Lewis, 1990; Oakes, 1986; Matthews and Campbell, 1983; Copa and Smith, 1983; Pratzner, 1985; Ertel and Neveu, 1987). Lather (1991), in describing post-positivistic (qualitative) inquiry, also adds a perspective which might prove helpful in clarifying these ideas.

From this qualitative perspective, the reader can see that when researchers wish to understand what is occurring in rural schools or in the workplace, and then to communicate such knowledge to research administrators, much difficulty will arise when they are knowledgeable of only the positivistic traditions and methods. What drives good research are important questions and not the method or paradigm.

Should the standards for research quality, and/or promotion and tenure for the academic researcher, be determined only from data-based, quantitative research publications? Schön (1983) stated that in the United States, more than any other country except Germany, the very heart of the university was given over to the scientific enterprise, to the ethos of the technological program and to positivism. To what extent is this true in Thailand?

Research in the social sciences might meet all the standards of scholarship as specified by professional societies, but be seen to be of little merit by positivistic researchers because of the problems of philosophical orientation, the kinds of research conducted and the kinds of knowledge produced. Standards for high quality research must be maintained in the social sciences, as noted by Thompson (2007), to maintain the integrity of our discipline-specific journals/conferences.

The administrators of research

Research funds are often administered by those from the positivistic paradigm. Habermas (1981) discusses two fundamental aspects of professional practice as being (1) work and (2) interaction. Work implies an expansion of technical control over objectified processes (such as the way we do things - pragmatically). Interaction implies an expansion of argumentative means for resolving

conflicts of interests and needs through mutual understanding which amounts to the extension of control of the domination of man by man -- power [*sic*]. Administrators have often mastered their work within basic research and can deal with the interaction in the experimental arena, but are often insecure in dealing with interpretive or critical science. They are at the cusp of the unknown. Are project funding competitions affected by the philosophy of the reviewers and administrators? Yes! Administrators do not understand the work in the social science areas and have limited ability in interacting related to other means of inquiry.

A Perspective on a future agenda

Churchman (1968) pointed out that the change in paradigm from linear to systemic thinking is now gaining ground in all fields of knowledge. Such ideas have emerged slowly in the social sciences. He noted that the social dimension of a truly rational, pragmatic systems theory is not yet adequately captured. Further study and commentary is needed for social scientists to be able to describe how they can participate in systems approaches to the messy research problems that operate in nations.

The nature of the outcomes of a research program in the social sciences may be problem setting instead of problem solving. Problem setting is a process in which, interactively, researchers name the things to which they will attend, and frame the context in which they will attend to them (Schön, 1983). Positivism and technical rationality depends upon agreements about ends, but when ends are confused and conflicting, there is, as of yet, no problem to solve, because one has to make sense of situations that initially make no sense: messy problems. Positivists tend to see science, after the fact, as a body of established propositions derived from research (ends/products), but when the products have limited utility in practice then a dilemma of rigor or relevance is experienced. One option, Debertin (1992) noted, was to focus upon the well-being of people. He called for a genuine focus on people to broaden the support base for research.

Social scientists have much that they can contribute to the resolution of many of the messy problems in each nation. Although one would not be so naive as to think that the road to being a participant in research programs in education will not be strewn with roadblocks. Schuh (1986) stated that publishing is too often done "for peers" in a discipline to the disadvantage of applied work to help people and consulting for the highest paying firm has emerged as a desired end of the researcher. The social good of the research is not a high priority.

Implications for curricula and professional development

Considerations of other approaches to inquiry beyond the traditional positivistic approach are not often included in the graduate programs preparing future researchers. Should future researchers be educated so that they have an appreciation for and understanding of other ways of knowing? One could purport the answer is "yes" as their future research may be interdisciplinary and employ multiple-methods. Students receiving graduate degrees and wishing to engage in research should have a broader view of the ways of knowing that just discipline-specific, quantitative positivistic inquiry. They will be well served when working in future interdisciplinary programs or projects; they will not find either their philosophy or understanding lacking as may be the case with current researchers. Further, research administrators should broaden their perspectives of research paradigms by participating in training programs to enhance their world view, increase their appreciation for the contributions that interpretive and critical science can make. Change is not an event, but a process. Social science researchers and research administrators must be amenable to change for systemic change to begin to occur.

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