Expanding the Agricultural Education Research Toolbox: A Case for an Interpretive Perspective

Mikel Woods
Cary J. Trexler
Iowa State University

Abstract

Assumptions underlying two distinctly different paradigms – positivism and interpretivism — currently guide educational research. Although acceptance of interpretivism is increasing within education, positivism remains the dominant paradigm for both education and agricultural education. In an effort to increase the potential for naturalistic inquiry, this paper (1) provides an understanding of the philosophical foundation underlying interpretivism, (2) argues that a distinction exists between methodology (positivism, interpretivism) and method (quantitative, qualitative), with the former more critical than the latter, (3) proposes that agricultural education fits well with the interpretive paradigm and qualitative methods, and (4) outlines what this approach would look like in practice in terms of research design, data collection, data analysis, and rigor. The intent is to inform practice as well as to clarify criteria appropriate for assessing the merit of agricultural education research based upon the interpretive model.

Mark Twain once said that if the only tool one has is a hammer, then one tends to treat everything as if it were a nail. Whereas a hammer is the best choice for driving nails, it becomes less useful for a bolt or screw and basically useless for a twist tie or tape. Twain's logic especially applies to the research methods used in agricultural education. For years, agricultural education researchers have hammered with one research paradigm, positivism, as if all topics of inquiry were nails. Currently, the tools for realizing the full potential for agricultural education research remain locked in the toolbox.

A Look at the Toolbox — Differing Perspectives

For close to two decades leaders in agricultural education research have called for an examination of our beliefs, concepts, attitudes, and basic premises for research (McCracken, 1983; McCormick, 1984). More specifically Miller (1991) and Newcomb (1993) have called for recognition of creative efforts, theoretical writings and a greater connection between scholarship and teaching. To move towards the type of scholarship suggested by these seminal leaders, Wardlow (1989) argued that we should look beyond the dominant mode of inquiry that may inhibit our innovation and development of intellectual pursuits.

We contend that this concern for the inclusion of alternative forms of scholarship is manifested in the ongoing debate over the relative merits of what are generally referred to as positivist and interpretivist research paradigms. Thus this concern is clouded by two problems: (1) a lack of coherent definitions, and (2) the focusing of most discussions on methods instead of on the basic assumptions of these two stances. We argue that the second problem is at the root of the confusion, and the first is a manifestation of it.

A key issue in the paradigm debate centers on the “unity of the sciences” (Smith, 1983). Are the natural and social sciences basically the same or are the subject matters inherently different? Interpretivist challenges to contemporary positivism can be compared with earlier efforts (marked by years of conflict and debate) to applying the model of the natural sciences to the study of people. The underlying assumptions and methods of the social sciences were, in many cases, transformed as social scientists, adhering to a positivist view of modern science, sought to emulate their colleagues in the natural sciences. Smith (1983) described how “this school of thought claimed that social investigation was a neutral activity in regards to values, and accordingly, social scientists conducting research should (1) eliminate all bias and preconceptions, (2) not be emotionally involved with or have a particular attitude toward the subject, and (3) move beyond common-sense belief” (p. 7). This last decree meant that social scientists should develop a neutral scientific language and be strictly confined to discussing the “what is” (that which is objective) of the social world and avoid the “what should be” (that which is subjective).

However, shortly after the idea of using the natural science’s approach to study the human world took root, a countermovement grew. The appearance of another school of thought — interpretivism — challenged the positivist paradigm and gave impetus to employing different methods within the social sciences. Dilthey (1988) contended that the complexity of the social world changes over time and cultural differences make it impossible to discover laws as in the natural sciences. Instead he believed emphasis should be placed on understanding the individual or type. He suggested “the social sciences must be descriptive as opposed to explanatory or predictive and must concentrate on interpretive understanding” (Dilthey, 1988, p. 152).

To shed further light on the differences between these approaches to understanding, Bernstein (1976) described the distinction between the positivist and interpretivist paradigms in terms of how theorists account for "man-in-the-world," either through a "scientific image" or through a "manifest image." Bernstein stated:

> those who endorse the scientific image maintain that science will provide not a partial but a complete account, which can in principle, if not yet in fact, explain even the "indispensable core" of human concepts, by showing how they are based on more fundamental scientific principles. And those who endorse the manifest declare not just that a scientific account of man is incomplete, but that, if we "subject science itself to rigorous scrutiny," we will see in it a second-order discipline based on a more fundamental understanding of man-in-the-world (p. 120).

The first view perceives human beings as complex physical systems differing from the rest of nature not in kind but perhaps in degree. Therefore, the products of science can provide explanations for how the system works. Inadequate explanations appear as temporary setbacks rather than failures. The alternative perspective counters that "scientific points of view are always both naive and at the same time dishonest and that failures in science indicate deep conceptual or categorical confusions" (Bernstein, 1976, p. 121).

This contrasting epistemological base allows for a range of research perspectives, or paradigms that includes both positivism and interpretivism. Each differs on basic underlying assumptions that ultimately guide choices about research methodologies and methods. The

literature offers a variety of summary charts (Guba and Lincoln, 1981; Koetting, 1986; Lincoln and Guba, 1985) and discussions (Comber, 1988; Eichelberger, 1989; Smith, 1989) that attempt to clarify the differences. Table 1 provides a comparison of these five assumptions.

Table 1

Contrasting Views Underlying Alternative Research Paradigms

Underlying assumptions and beliefs about:	Positivism	Interpretivism
Purpose(s) of research	Discover laws and generalizations that explain reality and allow to prediction and control	Understand and interpret daily occurrences and social structures as well as the meanings that people give to the phenomena
Nature of reality	Single, given, fragmentable, tangible, convergent, measurable	Multiple, constructed through human interaction, holistic, divergent
Nature of knowledge	Events are explained by knowable facts, real causes or simultaneous effects; law-like regularities exist	Events are understood through mental process of interpretation, which is influenced by and interacts with social context – mutual, simultaneously shaping
Relationship between the knower and the known	Independent, dualism	Interrelated, dialogic
Roles of value(s) in research	Value free	Value bound

Based on these assumptions, general characteristics of interpretivism become evident. These researchers seek to understand phenomena and to interpret meaning within the social and cultural context of the natural setting. Unlike positivists who believe that reality exists apart from the researcher and is knowable, interpretivists hold that reality is constructed. In fact, "inquiry is not a matter of offering interpretations of reality, but one of offering interpretations that become reality, to the extent they are agreed upon" (Smith, 1989, p. 171). In contrast with positivists, interpretivists seek subjective perceptions of individuals. Carr and Kemmis (1983) emphasized that to identify the actor's "motives and intentions correctly is to grasp the 'subjective meaning' the action has for the actor" (p. 88).

In order to uncover what people believe and then render meaning about their actions and intentions, interpretive researchers often interact dialogically with the participants. Within this

interrelationship, values cannot be sidestepped. Unlike positivists who attempt to separate values from facts and offer explanations of reality, which are empirically verifiable, interpretivists accept the inseparable bond between values and facts and attempt to understand reality, especially the actions of people, within a social context.

Selecting the Most Suitable Tool — Methodology vs. Methods

In studying Table 1, one can quickly recognize his/her preferred research paradigm. The intent here is not to assist researchers in cementing their own philosophical entrenchments but to provide philosophical lens that enlighten their view and, in turn, lead to an acceptance of the wider array of methodologies available to agricultural education researchers.

Current literature and conference sessions abound with discussions that examine different paradigms, quantitative versus qualitative research, and approaches most appropriate for educational research. Smith and Heshusius (1986), in tracing the evolution of concern, outlined three historical phases that researchers traverse on the trek to alternative epistemologies and their supporting methods of inquiry: (1) conflict where proponents so strongly recognized the fundamental differences in assumptions, procedures and attitudes that they often approached mutual disdain; (2) détente in which proponents, while accepting paradigmatic differences, decreased their concern over underlying assumptions and increased their concern over issues of procedure; and (3) compatibility and cooperation where proponents' concerns over assumptions are minimal and those related to procedure are primary. Although Smith and Heshusius suggested that the latter represents the current state of affairs in most fields of education, we contend that most in our discipline still lay somewhere between the first and second phase. Jayaratne and Martin’s (2000) finding that agricultural education researchers believe that qualitative studies are more scrutinized and harder to publish than quantitative studies support this premise.

This concern has also emerged in the broader educational milieu. Miles and Huberman (1988) argued that researchers should pursue their work, be open to a blend of epistemologies and procedures, and leave the grand debate to those who care most about it. They support this position on the grounds that the debate is unlikely to be resolved at any time soon and that epistemological purity does not generate new knowledge. In contrast to Miles and Huberman, Fetterman (1988) addressed the misleading nature of the terms "quantitative" and "qualitative" when he wrote, "they are commonly accepted handles for both the contrasting paradigms and the methods associated with them. However, each paradigm employs both quantitative and qualitative methods. Focusing on methods, however, is like focusing on the symptoms rather than the disease" (p. 18).

An Interpretive Toolbox for Agricultural Education Research

Whereas the positivist paradigm remains dominant in education, the interpretive perspective has gained much wider acceptance over the past decade (Fetterman, 1988; Firestone and Dawson, 1988; Lincoln and Guba, 1985; Smith, 1987). Likewise, agricultural education’s complex nature — entangled in interrelationships, replete with social and natural science context, and laden with values — demands that an alternative paradigm drive research. Based on the previously discussed underlying assumptions, the use of interpretive epistemologies and

subsequent methods appears not only appropriate, but also long overdue.

Although the momentum for change exists for other social sciences, agricultural education seems to lag behind in the acceptance of the interpretivist paradigm. This results, in large part, perhaps, from its connection to the natural sciences. This alliance with disciplines such as agronomy, animal science and horticulture may initially seem reasonable, but with its emphasis on people, agricultural education subject matter and research encompasses more of the social sciences than the natural sciences. Although much of the following discussion is relevant to positivist and interpretivist paradigms, the primary focus is on interpretivism.

How the Interpretive Inquirer Uses the Agricultural Education Research Toolbox

The appearance of the interpretive paradigm in education signals more than another novel academic paradigm (Guba & Lincoln, 1981). Rather, "a radically new and different cultural movement is coalescing in a broad-gauged re-conceptualization of how we experience and explain the world around us" (Rosenau, 1992). In its most extreme formulation, interpretivism is revolutionary; it goes to the very core of what constitutes social science and radically dismisses it (Smith & Heshusius, 1986). In its more moderate proclamations, the interpretive paradigm encourages substantive re-defining and innovation (LeCompte & Goetz, 1982). Taken together, both the extreme and moderate approaches constitute one of the greatest intellectual challenges toward the selection of methodologies that provide the means to find and construct knowledge that actually helps people.

As discussed previously, one's epistemology (e.g., the interpretivist paradigm) guides choices concerning the selection of research methods. An understanding of the appropriateness of qualitative inquiry depends on an understanding of the assumptions underlying the interpretivist paradigm. Although interpretive studies are not limited solely to the use of qualitative methods, they are recognized as the methods most typically used (Guba and Lincoln, 1981; Patton, 1990).

Generally, qualitative research can be characterized as the attempt to obtain an in-depth understanding of the meanings and definitions of human situations. The term "qualitative research" is used synonymously for a number of research approaches associated with the interpretivist perspective. These include, for example, naturalistic, ethnographic, phenomenological, hermenuetics, case study, action research, participatory, and emancipatory (Jacob, 1987; Lincoln and Guba, 1985; Patton, 1990; Peshkin, 1988).

A major reason these methods have not seemed appropriate for agricultural education is because they are viewed through a positivist lens. Maykut and Morehouse (1994) recognized that the adoption of qualitative methods might invite hostility from those ingrained with positivistic beliefs. This is because they often view the objectivity of quantitative research as "synonymous with good research," and the subjectivity inherent in qualitative research as "synonymous with "sloppy" and "unscientific" research (p. 19). Arguments over "quality" or the perceived lack of quality in a study hinge upon the inherent philosophical differences discussed throughout this paper.

Linking Theory to Practice through an Interpretive Perspective

To move discussion from theory to practice, the remainder of this paper provides a brief overview of: (1) research design, (2) data collection, (3) data analysis, and (4) rigor with an emphasis on the underlying assumptions of interpretivism and the use of qualitative methods. The purposes are twofold: (a) to translate the theoretical discussion into practice and (b) to provide a lens to view and assess the merit of research based on an interpretivist paradigm.

Research Design

The design of an interpretive (qualitative) study differs substantively from that of a positivist (quantitative) study. However, the degree to which it differs reflects the aforementioned lack of consensus regarding the blending of methodologies and method. The following highlights the range of possibilities and hopes to clarify differences in an effort to explain current practice. The discussion addresses three topics related to design: (1) degree of structure, (2) focus and research questions, and (3) sampling.

Degree of Structure

In the classic sense, the research design for an interpretive study often times begins as a broad outline of contingency-plans that are open to change throughout the course of study. An emphasis on emergent design and researcher flexibility characterizes this approach. Plans, research questions, theories, data collection strategies, and analysis evolve from the beginning standpoints as the researcher learns more about the study's people, places, events and processes. Based on the underlying assumptions, Lincoln and Guba (1985) have suggested that "design of a naturalistic inquiry cannot be given in advance; it must emerge, develop, unfold" (p.225). In determining the appropriate degree of structure, the researcher needs to consider what is being studied, the purpose, and underlying assumptions.

Focus and Research Questions

Although the researcher needs an initial focus, it often times changes over time. Viewed positively, these changes "signal movement to a more sophisticated and insightful level of inquiry (Lincoln and Guba, 1985, p. 229). The focus establishes the boundaries of the study (what will be studied) as well as inclusion-exclusion criteria (based on the relevancy of new information). From a similar stance, Patton (1990) pointed to the vague nature of inquiry and to real world constraints in stating, "there is no rule of thumb that tells a researcher how to focus a study. The extent to which a research question is broad or narrow depends on purpose, the resources available, the time available and the interests of those involved" (p. 166).

Sampling

Issues surrounding sampling as well as the logic that guide sampling decisions highlight a major difference between qualitative and quantitative methods. The quantitative approach involves representative samples selected randomly to allow for generalization from a population.

The qualitative approach uses small, information-rich samples selected to purposefully focus on issues. For quantitative methods, the same sample is used for the duration of the study. Whereas in qualitative inquiry, samples sometimes change in order to extend, test and fill in information (Lincoln and Guba, 1985, p. 201).

The Human As Instrument for Data Collection

With a malleable design as a guide, the researcher enters the field to begin data collection. The type of data, the role of the researcher in data gathering, as well as the specific methods for collecting data further define the nature of qualitative methods. In general, qualitative data consists primarily of words in the form of interview transcripts, field notes and documents. This data comes from fieldwork in which the investigator spends time in a natural setting gathering data first hand, typically through interviews, observations and document collection. Although these three forms are typically accepted as the primary modes for collection, Lincoln and Guba (1985) specify two other types of data: nonverbal cues, which pertain to nonverbal communications, and unobtrusive information residues. These involve physical traces that can be collected in the absence of the respondents who provided them. In this discussion, both of these are subsumed under the other three categories.

In this type of inquiry the researcher is the primary instrument of data collection. As with sampling issues, this distinction between quantitative and qualitative methods raises concerns within the minds of positivists. Based on paradigm assumptions, Lincoln and Guba (1985) summarize why the human instrument is crucial. In contrast to paper-and-pencil instruments, the qualitative inquirer gathers data him/herself:

> ...because it would be virtually impossible to devise a prior non-human instrument with sufficient adaptability to encompass and adjust to the variety of realities that will be encountered; because of the understanding that all instruments interact with respondents and objects but that only the human instrument is capable of grasping and evaluating the meaning of that differential interaction; because the intrusion of instruments intervenes in the mutual shaping of other elements and that shaping can be appreciated and evaluated only by a human; and because all instruments are value-based and interact with local values but only the human is in a position to identify and take into account (to some extent) those resulting biases (pp. 39-40)

Because the human instrument (1) is responsive, (2) is flexible, (3) sees social organization as holistic entities, (4) relies on tacit knowledge, and (5) sees the unusual, Guba and Lincoln (1981) believe that its strengths outweigh its weaknesses. Although the weaknesses cannot be ignored, they can be abated. People do have selective perceptions, which must be taken into account during observation and interviewing. Individuals can, however, learn how to observe and interview as well as learn how to improve specific skills related to these tasks through education, preparation, and practice (Lincoln and Guba, 1985).

Patton (1990) has argued "to become a skilled observer is a no less rigorous process than the training necessary to become a skilled statistician. People don't 'naturally' know statistics--and people do not 'naturally' know how to do systematic research observations" (p. 201). This

parallels Barrick's (1993) assertion that a course on qualitative inquiry be included in preparation of agricultural education researchers. Through education and practice, inquirers can learn how to observe and interview as well as learn what to look for and what to ask.

Methods of Data Collection

The following sections present an overview of the three major methods of data collection--observation, interviews and document collection. In this overview we underscore both the strengths as well as the weaknesses of these methods. It must again be emphasized that by using a combination of data collection tools (e.g., triangulation), the researcher capitalizes on the strengths of each and minimizes weaknesses inherent in a single strategy.

Observation

As a data gathering tool, observation offers both advantages and disadvantages. In terms of advantages, observation (1) provides the context for the study, (2) allows for an inductive approach, (3) gives the researcher direct, first-hand experience with events while they occur, (4) serves as a check against bias, prejudice and selective perceptions, (5) builds on the researcher's knowledge and/or enhances understanding, and (6) allows the inquirer to see the "whole" in a way that members cannot. In terms of disadvantages, observation may (1) alter the setting and the behaviors through the presence of the researcher, (2) not clearly differentiate between objective and subjective information, (3) become very time consuming and produce volumes of data, (4) result in too much involvement by the researcher, (5) not adequately address the researcher's perceptions and biases, and (6) not sufficiently capture the setting because it is impossible to observe everything or have access to everything (Bogdan and Biklen, 1982; Guba and Lincoln, 1981; Patton, 1990).

Interviews

As with observation, interviewing as a method has several strengths. The researcher can (1) move back and forth in time to construct the past, understand the present and predict the future, (2) access the otherwise inaccessible, (3) check observational information, reflections and emerging theories with members of the setting, (4) gather information somewhat systematically, and (5) gain new insights and perceptions. Weaknesses also exist, because information and responses from interviews (1) are highly reflective of the interviewee's perceptions and biases, (2) depend on the respondent's ability to recall, (3) can be affected by the interviewee's physical and emotional state, (4) can be affected by reactions to and interaction with the interviewee, and (5) depend in large part on the interviewing skills of the researcher (Lincoln and Guba, 1985; Patton, 1990).

Documentation

The use of documentation also holds strengths and weaknesses. On the one hand, documents (1) can provide a wealth of information, some of which is not accessible through observation or interviewing, (2) provide highly reliable information if records are legal or

official in nature, (3) are easy and cost effective to duplicate, (4) are often readily accessible, (5) confirm information from other sources, (6) provide different perspectives on similar information, and (7) retain the context of the setting. On the other hand, they (1) may be of poor or variable quality (inaccurate, incomplete) and (2) can still reflect perceptions and biases of participants (Bogdan and Biklen, 1982; Guba and Lincoln; 1981; Patton, 1990).

Data Analysis

As with data collection, the procedures for analysis are unique and specific to qualitative methods. Bogdan and Biklen (1982) have suggested "analysis involves working with data, organizing it, breaking it down, synthesizing it, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others" (p. 154). The human inquirer serves not only as the instrument of data collection but also as the tool for data analysis. The two remain intertwined because data analysis begins during data collection. The following provides a brief synopsis of strategies used for analysis during and after data collection.

Analysis during Data Collection

Analysis of the data begins during data collection to let "the field worker cycle back and forth between thinking about the existing data and generating strategies for collecting new--often better quality--data" (Miles and Huberman, 1984 p. 49). The inquirer, as if in pursuit of a suspect, seeks out new information, checks leads and tests fledgling hypotheses. The evidence begins to build a preliminary rationale for the emergent theory and the researcher plays both the prosecutor and the defense.

Analysis of Data after Collection

With few rules of thumb, several approaches to analysis exist in practice and are supported by the field. Perhaps the most typical and widely used method is the development of a coding through content analysis — identifying categories or themes based upon patterns and ideas that emerge from the data. The researcher reads through the data looking for primary patterns (e.g., words, phrases, behaviors, thoughts, and events) that are repeated and stand out. After assigning initial labels to these patterns, the researcher begins to apply these labels to the different kinds of data. Through sorting, comparing and contrasting, a system for classification emerges (Patton, 1990). Although these codes remain data specific, Bogdan and Biklen (1982) have suggested the following list of families of codes as examples of some of the coding possibilities: (a) setting/context codes, (b) definitions of the situation codes, (c) perspectives held by subjects, (d) process codes, (e) event codes, (f) strategy codes, (g) relationship and social structure codes, (h) methods codes, and (i) pre-assigned codes.

Following this overview of verification tactics, we discuss the fourth and final topic related to the application of the interpretivist paradigm for agricultural education research.

Assuring the Rigor and Trustworthiness of the Findings

Qualitative researchers strive for rigorous and trustworthy results, however the criteria for assessing these qualities for a qualitative study differ from those used in quantitative studies (Lincoln, 1999). During this phase it is perhaps most critical that consumers of research wear the appropriate lens — an interpretive lens for interpretive studies and a positivist lens for positivist studies. Wearing a positivist lens to assess the rigor of an interpretive study may blind one from seeing its relative merit. Questions pertaining to the concerns of positivists such as: (a) sample size, (b) generalizability and (c) objectivity must be reevaluated through a qualitative lens.

Positivists typically speak of validity, reliability and objectivity when assessing the worth of a study. Based on the underlying assumptions, these concepts do not transfer directly to interpretive inquiry. Some authors retain the terms of validity and reliability while proposing conceptually different means for judging merit (LeCompte and Goetz, 1982; Patton, 1990). Others use different terminology to convey the requisite criteria (Phillips, 1987; Zelditch, 1962). Lincoln and Guba (1985) have offered parallel terms, which may be more applicable. They suggest that interpretivist researchers are concerned with: (a) the credibility (internal validity) of their findings, (b) the transferability or how well their working hypotheses would "fit" in another context (external validity), (c) the dependability (reliability) or testing for consistency by a second evaluator, and (d) the confirmability of the data (objectivity). Although researchers vary in the terms they use, they agree that adequate procedures exist to assure the quality of the research and the findings. The following briefly summarizes some of the strategies, that can assure rigor, worth and trustworthiness in interpretive studies (Borman, LeCompte and Goetz, 1986; Lincoln and Guba, 1985; Miles and Huberman, 1984; Patton, 1990).

Although researchers vary in the terms they use, they agree that adequate procedures exist to assure the quality of the research and the findings. The following briefly discusses some of the strategies that can help assure the rigor, worth, and trustworthiness of interpretive studies (Borman, LeCompte and Goetz, 1986; Eisner, 1981; Lincoln and Guba, 1985; Miles and Huberman, 1984; Patton, 1990). Triangulation involves crosschecking data and interpretations by drawing upon different data sources, methods, and perspectives. Prolonged and repeated observations reduce researcher effect and identify typical as well as atypical characteristics. This goes along with representativeness, in which the researcher strives to investigate the widest range and diversity of events and people possible within the study. Member checks and peer debriefing are two methods that entail asking others if the data are accurate and if the interpretations are plausible. Testing rival explanations and seeking negative cases places the researcher in somewhat of a devil's advocate role, trying in essence to disprove working hypotheses. Intersubjective understanding makes explicit the subjective aspects of interaction with participants. Thick description depicts in detail and depth all elements of the context in a way that allows a reader to then determine the "fit" with another context. A clear description of the design and procedures enables others to reconstruct and corroborate the study.

Finally, Patton (1990) has argued that the issue of credibility centers on three interrelated elements: (1) rigorous techniques and methods, (2) the credibility of the researcher, and (3) the philosophical belief in the interpretive paradigm and qualitative methods. He has suggested that Miles and Huberman emphasize the first and Guba and Lincoln the third, but asserts that all three are critical. As long as myopic lenses cloud the view, interpretive studies will not be seen

as credible. Techniques and methods must be clearly described and delineated to enable others to envision the study and judge its worth. Perceptions of the researcher's qualifications and experience lie at the heart of credibility because this individual serves as both the instrument of data collection and the tool for data analysis. This necessitates, then, that qualitative researchers describes their biases, qualifications and experiences to help the reader judge credibility.

Everything Is Not a Nail — Final Remarks

Agricultural education, in general, has been limited by the positivist paradigm in two ways. First, it chips away at the edges by inadequately addressing highly complex, interactive, holistic natures of the settings and issues we study. While the interpretive paradigm strives to investigate the pieces as well as the whole with an emphasis on understanding and interpreting the complex interrelations, it too is perhaps only chipping away, but its product may be more appropriate for understanding agricultural education issues and trends. Secondly, positivism as the dominant research paradigm, has served as a research gatekeeper (Jayaratne and Martin, 2000). Thus, effectively screening out what is perceived to be "sloppy and subjective" methods. Interpretive research is criticized "for not being something it never intended to be, and is not given credit for its strengths" (Borman, LeCompte, and Goetz, 1986, p. 42).

As researchers and teachers, it's our contention that interpretive research has much to offer agricultural education. At the same time we are saddened that the full potential of the discipline has so seldom been realized. Yet we believe that agricultural education is always in the process of evolving. Therefore, it would be a grievous error not to more fully explore an interpretivist paradigm that can contribute to the overall usefulness of agricultural education research. The interpretivist paradigm and its supporting methods provide much promise.

References

Barrick, K. (1993). A conceptula model for a program of agricultural educaiton in colleges and universtities. Journal of Agricultural Education, 34(3), 1-10.

Bernstein, R. J. (1976). The restructuring of social and political theory. Philadelphia: University of Pennsylvania Press.

Bogdan, R. C., & Biklen, S. K. (1982). Qualitative research for education: An introduction to theory and methods . Boston: Allyn and Bacon.

Borman, K. M., LeCompte, M. D., & Goetz, J. P. (1986). Ethnographic and qualitative research design and why it doesn't work. American Behavioral Scientist, 30, 43-57.

Carr, W., & Kemmis, S. (1983). Becoming Critical: Knowing through action research . Victoria, British Columbia, Canada: Deakin University.

Comber, B. (1988). The continuing conversation: choices in educational research. Language Arts, 65, 776-786.

Dilthey, W. (1988). Introduction to the human sciences: an attempt to lay a foundation for the study of society and history. Translated by Roman J. Betanzos. Detroit, MI: Wayne State University Press.

Eichelberger, T. (1989). Disciplined inquiry: Understanding and doing social research . NY: Longman.

Fetterman, D. M. (1988). Qualitative approaches to evaluating education. Educational Researcher , 17, 17-23.

Firestone, W. A., & Dawson, J. A. (1988). Approaches to qualitative data analysis: Intuitive, procedural, and intersubjective. In D. M. Fetterman (Ed.), Qualitative approaches to evaluation in education: The silent scientific revolution (pp. 88-115). NY: Praeger.

Glesne, C. & Peshkin, A. (1992). Becoming Qualitative Researchers: An Introduction. White Plains, NY: Longman.

Guba, E. G., & Lincoln Y. S. (1981). Effective evaluation . San Francisco: Jossey-Bass Publishers.

Guba, E. G., & Lincoln, Y. S. (1988). Do inquiry paradigms imply inquiry methodologies? In D. M. Fetterman (Ed.), Qualitative approaches to evaluation in education: The silent scientific revolution (pp. 88-115). NY: Praeger.

Husen, T. (1988). Research Paradigms in education. Interchange, 19, 2-13.

Jacob, E. (1987). Qualitative research traditions: A review. Review of Educational Research, 57, 1-50.

Jayaratne, K. S. U. & Martin, R. (2000). Agricultural Education Professionals' Perceptions of the Journal of Agricultural Education. Unpublished manuscript, Iowa State University.

Koetting, J. R. (1986). Foundations of naturalistic inquiry: Developing a theory base for understanding individual interpretations of reality . (ERIC Document Reproduction Service No. ED 263 426)

LeCompte, M. D., & Goetz, J. P. (1982). Problems of reliability and validity in ethnographic research. Review of Educational Research, 52, 31-60.

Lincoln, Y. S. (1999, December). Some thoughts for Agricultural Education about Qualitative Research. Presentation at AAAE General Session, Orlando, FL.

Lincoln, Y. S., & Guba, E. G. (1985). Naturalistic inquiry . Newbury Park, CA: Sage Publications.

Maykut, P., & Morehouse, R. (1994). Beginning qualitative research: A philosophic and practical guide. London: Falmer Press.

McCormick, F. (1984). A profession at risk. Journal of the American Association of Teacher Educators in Agriculture, 26(1), 3-14.

McCracken, J. D. (1983). A profession in need of academicians. Journal of the American Association of Teacher Educators in Agriculture, 24(1), 2-12.

Miles, M. B., & Huberman, A. M. (1984). Qualitative data analysis: A sourcebook of new methods . Beverly Hills, CA: Sage Publications.

Miles, M. B., & Huberman, A. M. (1988). Drawing valid meaning from qualitative data: Toward a shared craft. In D. M. Fetterman (Ed.), Qualitative approaches to evaluation in education: The silent scientific revolution (pp. 222-244). NY: Praeger.

Miller, L. (1991). Checking the pulse of the discipline. Journal of Agricultural Education, 32(1), 2-6.

Newcomb, L. H. (1993). Transforming university programs of agricultural education. Journal of Agricultural Education, 34(2), 1-10.

Patton, M. (1987). How to use qualitative methods in evaluation. London: Sage Publications.

Patton, M. Q. (1988). Paradigms and pragmatism. In D. M. Fetterman (Ed.), Qualitative approaches to evaluation in education: The silent scientific revolution . (pp. 116-137). NY: Praeger.

Patton, M. Q. (1990). Qualitative evaluation and research methods (2nd ed.). Newbury Park, CA: Sage Publications.

Peshkin, A. (1988). Understanding Complexity: A gift of qualitative inquiry. Anthropology and Educational Quarterly, 19, 416-424.

Phillips, D. C. (1987). Validity in qualitative research: Why the worry about warrant will not wane. Education and Urban Society, 20, 9-24.

Rosenau, P. M. (1992). Post-Modernism and the Social Sciences: Insights, Inroads, and Intrusions. Princeton, NJ: Princeton University Press.

Smith, J. K. (1983). Quantitative Versus Qualitative Research: An Attempt to Clarify the Issue. Educational Researcher, 12, 6-13.

Smith, J. K. (1989). The nature of social and educational inquiry: Empiricism versus interpretation . Norwood, NJ: Ablex Publishing Corporation.

Smith, J. K., & Heshusius, L. (1986). Closing down the conversation: The end of the quantitative-qualitative debate among educational inquirers. Educational Researcher, 15, 4-12.

Zelditch, M., Jr. (1962). Some methodological problems of field studies. The American Journal of Sociology, 67, 566-576.

Wardlow, G. (1989). Alternative modes of inquiry for agricultural education. Journal od Agricultural Education, 32 (4), 2-7.

Expanding the Agricultural Education Research Toolbox:
A Case for an Interpretive Perspective

A Critique

Glen C. Shinn
Texas A&M University

Contribution and Significance of Research

Woods and Trexler have given us cause to reconsider the meaning of scholarship and to consider positivism and interpretivism as suitable tools for scholarly inquiry. They have summarized the work of principal authors with the intent to "inform practice" and to "clarify criteria." Clearly, few would argue with the proposition that qualitative research is a field of inquiry in its own right (Denzin & Lincoln, 1994). At the same time, few would argue that every research paradigm has limitations and delimitations. Woods and Trexler encouraged us to examine our philosophical foundations and have effectively argued that the interpretive paradigm and qualitative methods fit within our contextual settings.

Procedural Considerations

Contrasting views of positivism and interpretivism were provided by the authors. Table 1 is a useful contrast of the two schools that Lincoln and Guba (1985) label as a positivist paradigm and a naturalist paradigm (Table 1.1, p. 37). Woods and Trexler are convincing that the discipline of Agricultural Education is highly complex, interactive, holistic, and that people assign meaning to phenomena based on their view of reality and truth. These axioms undergrid the need for multiple research paradigms. Consequently, the authors are to be commended for the way in which they have examined the question.

Questions for Consideration

As we expand our research toolbox, should we ask the following questions:

Is the fundamental limitation of scholarship in agricultural education the research paradigm that we choose, or is it the significance of the question that we ask? Perhaps the metaphor of selecting the hammer is a second–order decision (hammer–nail). If so, should the first–order decision be one of purpose (design specification–fastener)? What is the nature of problem? Does our evaluand–the thing to be evaluated–have merit and worth? When this first–order decision is confirmed, we should be led to the appropriate research paradigm.

The skill and training necessary to use a particular tool, even a hammer, is well understood. What requisite training is critical for the qualitative researcher?

How can the researcher better develop interpretive perspectives and research strategies?

How can the inquiry give voice to those with whom we propose to understand?

The case for the human as an instrument for data collection is clear. What techniques are useful to transfer this rich understanding to the research consumer and stakeholder?

What are examples of appropriate methods of collecting and analyzing empirical materials that assure rigor, worth, and trustworthiness?

Denzin, N. K. and Lincoln, Y. S. 1994. Handbook of qualitative research. Thousand Oaks, CA: Sage Publications.