Qualitative Approaches to Evaluating Education

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Qualitative research approaches are part of the intellectual landscape in educational evaluation. The use of qualitative approaches in evaluation has been fruitful. Classic qualitative approaches, representing accepted innovations, include ethnography, naturalistic inquiry, generic pragmatic (sociological) qualitative inquiry, and connoisseurship/criticism. Metaphors and phenomenography represent novel approaches with roots in the classics. Efforts to establish standards commensurate with the mainstream of scientific inquiry serve to further institutionalize qualitative approaches, anchoring them in the fertile soil of educational evaluation.

Qualitative educational evaluation is not a monolithic entity. A multitude of qualitative approaches exist. They may be scientifically based or artistically oriented. One approach may appear radically phenomenological, another mildly positivistic in style, tone, and formation. Epistemological and methodological pluralism is a reality in evaluation. This article explores this qualitative diversity and, in the process, dispels the myth of a homogeneous enterprise. (See also Fetterman, 1988b and Jacob, 1988). Some of the most common approaches in the field—including ethnography, naturalistic inquiry, connoisseurship and criticism, and a few completely new qualitative approaches —are briefly discussed in this presentation. These approaches are illustrated with the work of their founders or major proponents.

In some of these reviews, a specific approach is discussed; in other portions of this review, the issues that shape and distinguish one approach from another are examined. Arguments are openly aired, and hopes for reconciliation are offered. No attempt is made to exhaustively review each approach. (For a more detailed review and mild criticism of each approach see Fetterman, 1988b).

Qualitative approaches in the field of educational evaluation present a wealth of useful, practical alternatives designed to add to the evaluator's arsenal. Comparing and contrasting these approaches clarifies their relationship to one another and ensures a more appropriate and accurate appraisal of them individually. Critics often confuse one qualitative approach with another. This misperception has caused erroneous or misleading evaluations of a given approach. Typically, the wrong criteria are used to assess the utility of an approach. Criteria used to determine the validity of ethnography may be inappropriate to determine the value of connoisseurship and criticism, and the criteria for evaluating naturalistic inquiry are often similarly inappropriate.[1] In addition, some evaluators have haphazardly mixed elements of different qualitative approaches in a single study without regard for the fact that each approach has its own set of standards, thus jeopardizing the credibility of research findings. Elements of different approaches can combine in a single study if the evaluator is knowledgeable about the various approaches and is aware of the consequences of mixing and matching. The validity of one qualitative approach can be enhanced when supplemented by the techniques of another. However, an undisciplined approach to combining qualitative approaches can undermine the most interesting study.

This discussion takes place in a larger paradigmatic context: that of a silent scientific revolution in evaluation. As is the case in many fields of scientific endeavor, educational evaluation is experiencing a change in direction. A critical component of this change is a shift in the paradigms underlying the method and aim of research.[2] A marked shift is taking place in the professional allegiance of evaluators. Increasingly, they are turning away from traditional positivist approaches and toward the acceptance and use of phenomenological or qualitative concepts and techniques. As with any change in science, the shift is gradual, involving both subjective and objective considerations. Thomas Kuhn explained that the acceptance of a new paradigm depends on the phenomena of prior crisis and faith, as well as numerous hard-headed arguments. According to Kuhn "there is no single group conversion, what occurs is an increasing shift in the distribution of professional allegiances" (1962, p. 158).

The conversion experience that Kuhn speaks of does not occur overnight. It is not unusual to observe "lifelong resistance particularly from those whose productive careers have committed them to an older tradition of normal science..." (Kuhn, 1962, p. 151). Donald Campbell (1974) and Lee Cronbach (1975) stand as rare exceptions to this pattern. Prominent proponents of the dominant (positivistic) paradigm, they have both taken firm positions in favor of the use of qualitative methods. In fact, Campbell (1979) has stated that "where such (qualitative) evaluations are contrary to the quantitative results, the quantitative results should be regarded as suspect until the reasons for the discrepancy are well understood" (p. 53). Evaluators who continue to display resistance and uncertainty are usually unfamiliar with qualitative approaches. This discussion addresses this problem by presenting a set of standard qualitative approaches that have

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emerged in the course of this silent scientific revolution.

Revolutionary change occurs in many stages from innovation to acceptance. Typically, only a few innovations reach the acceptance stage. The qualitative classics in this review represent accepted innovations in the evaluation enterprise. Acceptance creates a hospitable environment for future innovations. Novel approaches reach the surface of awareness in this kind of environment—approaches that under less accepting and flexible circumstances would never see the light of day. New developments either end up in a suitably obscure place in the archives or reach the light and in turn light the way to the future. Reaching the acceptance stage generally means adapting an innovation to the mainstream, to make it more familiar to potential adopters. This process can be accomplished by modifying superficial or substantive elements of the paradigm to make it more palatable to the dominant group. During this adaptation period the brainstorming phase comes to a close, and it is time to regroup. Successful change agents are able to identify the salient elements of an innovation from the potential adopters' perspective and to promote or proselytize, focusing on the significant features of the innovation. Similarly, perceived weaknesses that threaten the validity or credibility of the innovation must be addressed if the innovation is to be fully assimilated into the superordinate group. Although the gap between them is quickly closing, positivists represent the dominant culture in educational evaluation and research, while phenomenologically oriented evaluators remain a subordinate subculture. The bottom line in any marketing strategy, however, is the product. Without a finished product, all the advertising or proselytizing in the world is meaningless. In evaluation, reports represent one of the most convincing arguments for qualitative approaches. They can stand the test of time and can be evaluated on their own terms. They are either convincing or unconvincing, useful or useless. At this stage of an innovation, the idea comes to fruition—for better or worse.

A fundamental element of the acceptance process is communication. The continuing qualitative-quantitative debate is an important part of this process (see Smith & Heshusius, 1986; also see Phillips, 1983 and Soltis, 1984). One need only scratch the surface of the qualitative-quantitative debate to understand that the terms "quantitative" and "qualitative" are in themselves misleading. 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. Certainly, adherents of the dominant quantitative paradigm are more likely to use experimental and quasi-experimental tools, while qualitative researchers are more likely to employ more descriptive techniques. Focusing on methods, however, is like focusing on the symptoms rather than on the cause of a disease. Methods are manifestations of a manifold religion we call science.

The fundamental differences between scholarly orders are based on philosophical and epistemological, not methodological, grounds. (See Fetterman 1982, in press; Goetz & Lecompte, 1984; Lincoln & Guba, 1985.) The contrast in this case centers on the philosophical positions of positivism and phenomenology. Typically, positivists search for social facts apart from the subjective perceptions of individuals. In contrast, phenomenologically oriented researchers seek to understand human behavior from the "insider's" perspective. Their most significant reality or set of realities is found in the subjective realities of human perception. Essentially, a phenomenologically oriented researcher argues that what people believe to be true is more important than any objective reality; people act on what they believe. Moreover, there are real consequences to their actions.

This basic philosophical difference, in conjunction with the social and psychological attributes of the individual researcher, sets the tone for research. These characteristics shape the research endeavor, from the methods used to the types of questions asked. These pedagogical distinctions become somewhat muddled in practice, however, because a continuum runs from reform through orthodox adherence to a paradigm. Moreover, as the research evolves, the evaluator may alter his or her vision. The work of most anthropologists is designed and conducted from a phenomenologically oriented perspective. However, some phenomenologically oriented anthropologists attempt to extrapolate from their data external social facts in a classical positivistic tradition. Similarly, most qualitative evaluators attempt to communicate their insights and research findings to positivists in the language of their host culture.[3]

However, communication between contrasting cultures often produces conflict and debate. In our disputes, we forget that we are one family in pursuit of knowledge. The current dispute at times echoes the tensions that existed in the sixteenth century between believers in the Copernican theory of the universe and the Ptolemaic established order, which preached that the earth was the center of the galaxy. Copernicus' theory was anathema to the church and a threat to the established way of thinking about the world and the people in it. Skeptical thinkers, including Galileo and Kepler, produced treatises that helped build a case for an alternative way of viewing the solar system.[4]

It was a gradual shift in professional allegiances, in practice not much different from the current shift in allegiance in educational evaluation. No promises can be made for the powers of a new paradigm. All that can be said is that a qualitative paradigm offers a new set of explanations of our educational system. It also enables researchers to ask new questions, answer different kinds of questions, and readdress old questions. In essence, it has worked in a number of areas where the dominant paradigm has failed or is inappropriate. (See also Burtonwood, 1986 for an excellent discussion of competing paradigms.)

This shift in allegiance is not a simple linear development. Qualitative evaluation has manifested itself in a variety of forms, and entirely new paradigmatic transformations have occurred. Some new approaches are the result of a Hegelian synthesis of paradigms; others—such as phenomenography, (which focuses on perception itself by looking at "the relations between human beings and the world around them")—appear to have emerged more independently. Some of the most effective of these approaches have been selected for this review to document the development of this gradual shift in professional allegiances among education evaluators. The reasons for this realignment vary. Many individuals have been convinced of the utility of this new paradigm "through some mystical aesthetic" (Kuhn, 1962,

p. 158). Increasingly, however, individuals seriously dissatisfied with the results of their old tools are making the case for other qualitative approaches in education "to a point where hard headed arguments can be produced and multiplied" (Kuhn, p. 158).

One of the first formal collections dealing with the paradigmatic debate was presented by T. S. Cook and C. S. Reichardt (1979) in *Qualitative and Quantitative Methods in Evaluation Research*.[5] It presents an excellent introduction to the issues surrounding these contrasting paradigms and discusses some of the strengths and weaknesses of each approach. In addition, the authors have provided a forum for the debate and have established some boundaries for the discussion. They have, however, been criticized for "making explicit many of the misunderstandings that have emerged as a result of writings on alternative paradigms" (Patton, 1988). The real problem critics have with their book may be a result not of scholarly misunderstanding but of the book's positivist perspectives on a phenomenological endeavor.

One of the first anthropological and phenomenologically oriented presentations of this debate within the context of evaluation was by Fetterman (1984) in *Ethnography in Educational Evaluation*. The contributors were cultural brokers, agents of change attempting to diffuse a paradigm. They demonstrated the utility and centrality of ethnography in educational evaluation. *Ethnography in Educational Evaluation* presented a continuum of practices within one qualitatively oriented tradition: ethnography. It captured what doing ethnographic educational evaluation means from the "emic" or "insider's" perspective.

Fetterman and Pitman's *Educational Evaluation: Ethnography in Theory, Practice, and Politics* (1986) was designed to build on the foundation laid by the previous work. It presents the latest developments in the emerging field of ethnographic educational evaluation from an anthropological perspective. This book demonstrates various degrees of assimilation, acculturation, and deacculturation to the dominant context of evaluation. The emphasis on the explicit use of anthropological theory calls for a return to the basic elements of native anthropological culture. The practice and politics chapters demonstrate how to integrate qualitative and quantitative data within a single study. Consequently, some chapters sound more sociological than others; some, more positivistic than phenomenological. The aim, however, is to present a continuum of what is happening in practice during this stage of the cultural exchange.

This discussion attempts to paint on the same canvas with much broader strokes—painting a portrait of paradigmatic change. Instead of presenting a continuum of practices in monochrome, this sketch continues the debate by presenting an insight into the rainbow of colorful issues and approaches within a qualitative dimension. The approaches selected for presentation stand as useful alternatives to the dominant paradigm. Moreover, this collection is presented because, as Kuhn pointed out, "no single argument...can or should persuade them all."

Structurally, this review is divided into four sections: Qualitative Classics,[6] New Developments, Regrouping, and Conclusion. The heart of this review lies in the Qualitative Classics section. Here the dominant qualitative forms of evaluation are displayed, including ethnography, naturalistic inquiry, generic pragmatic (sociological) qualitative inquiry, and connoisseurship/criticism. Approaches are distinguished from one another, basic issues are addressed, and unresolved disputes are discussed.

A natural tendency of any radical change is the emergence of splinter groups, new factions, and entirely new developments. New Developments presents two of these marginal but potentially significant evolutionary changes: metaphors and phenomenography. Finally, regrouping demonstrates a natural tendency in any process of change: to assess where we are and to identify the next steps necessary to routinize the movement within the context of mainstream traditions.

Qualitative Classics

Although a young science[7] in comparison with the physical sciences, anthropology has the distinction of being one of the oldest qualitative traditions in academia. It has a multitude of built-in quality controls, with an emphasis on ensuring validity, and thus has become one of the most widely accepted qualitative approaches among positivists. Ethnography, a subskill in anthropology, has become firmly rooted in educational evaluation. In "Ethnography in Educational Research: The Dynamics of Diffusion" (Fetterman, 1982) and "Ethnographic Educational Evaluation," (Fetterman, 1987), Fetterman discusses the origins of this field, key elements of this approach (including techniques and a cultural interpretation), and required adaptations. He focuses on a national ethnographic evaluation of a program for dropouts that helped legitimize this source of inquiry in evaluation circles.

The study was multilevel and multidimensional. The evaluation examined classrooms, administrative structures, community environments, local and national program affiliates, and government agencies. In addition, the roles of federal involvement evaluation design, and reinforcing world views were examined. This exploration also contributed to the study of cultural transmission, focusing on such mechanisms as program ethos, rites of solidarity, and rites of passage. In addition, it demonstrated the significance of contextualizing data on program, evaluation, and federal levels. An attempt was made to demythologize the qualitative-quantitative dichotomy in research. Ethnography requires a good mixture of qualitative and quantitative data to discern attitudinal changes and to understand typical quantitative criteria such as attendance, turnover, graduation, and placement figures. Moreover, this study demonstrated how integrating qualitative and quantitative data is possible. Finally, it suggested the policy relevance of the qualitative approach. Sensitivity to policy language and government time lines, and a demonstrated ability to make significant programmatic and policy recommendations, have helped ethnographic educational evaluation find fertile ground. (See also Fetterman, 1988a for a series of similar examples as applied to gifted and talented education.)

Within academic disciplines are various cultures and subcultures with their own languages, customs, and rituals. However, these cultures are not homogeneous entities. There are many differences within a culture. Intracultural diversity is also characteristic of an evolutionary development in any discipline. Philosophical and methodological arguments abound within the qualitative community. These arguments help refine the direction of the field. Miles and Huberman argue about

methods and canons for analysis required to translate qualitative findings for mainstream educational researchers in a credible fashion. Guba and Lincoln argue about the theoretical and epistemological issues and, like Wolcott in educational anthropology, play the spoiler role to maintain the integrity of their approach. They represent a conservative force, preventing excessive adaptation and modification. In *Naturalistic Inquiry* (Lincoln & Guba, 1985) and in "Do Inquiry Paradigms Imply Inquiry Methodologies?" (Guba & Lincoln, 1988), they contrast the scientific, positivistic paradigm with a naturalistic methodology. According to the authors, the alternative paradigm "represents a rival ontological, epistemological, and axiological posture" for adherents of the conventional paradigm. They argue with positions held by Miles and Huberman, Cook and Reichardt, and Patton, all of whom attempt an ecumenical blending of methods and/or a shifting of paradigms.

Guba and Lincoln suggest that these positions confuse methodology (paradigms) with methods (tools and techniques). They explain that nothing is intrinsically naturalistic or positivistic about methods. The classification of an approach depends on the researchers' intent or purpose and how they use their tools. Moreover, the authors argue that elements of the conventional and the alternative paradigms cannot be mixed without resulting in complete ruin. Guba and Lincoln present the axiomatic differences between positivistic and naturalistic paradigms, the differences in contexts of discovery and verification, and the negotiated or collaborative nature of naturalistic inquiry in comparison with exclusively exogenous or endogenous (locus of inquiry) approaches. They also briefly contrast the linear, rational, and closed methodology of the conventional paradigm with the circular, interactive, hermeneutic, and intuitive character of the naturalistic paradigm. Guba and Lincoln comment on bounding and the trustworthiness of naturalistic inquiry in their work, focusing on internal and external validity, reliability and objectivity or credibility, transferability, and dependability and confirmability. They maintain a strong position concerning the nonmiscibility of the methodologies "in any proportion."

Patton presents "a paradigm of choices," in *Qualitative Evaluation Methods* (1980) and in "Paradigms and Pragmatism" (1988). He agrees with Guba and Lincoln that paradigm distinctions are real and useful. However, in marked contrast with their stand, he argues that "one can usefully mix methods" without uniformly adhering to a specific paradigmatic party line. Patton reviews the paradigm debate, exploring assumptions about the connection between paradigms and methods. He briefly presents his early lament about the dominance of the positivistic over the phenomenological paradigm, Reichardt and Cook's (1979) attack on the untenable conceptualization of two mutually exclusive approaches, and Guba and Lincoln's advocacy of naturalistic inquiry over the conventional positivistic paradigm.

He proceeds to clarify the difference between competing and incompatible paradigms, explaining that paradigms do compete for resources, but they are not necessarily incompatible in a single study. Patton also takes a step beyond logical dichotomies erected to distinguish the two paradigms. He presents a revised version of Reichardt and Cook's logical but oversimplified paradigmatic contrast. For Patton, the link between methods and paradigms is one of habit and training, which place blinders on evaluation practice.

Patton recognizes the logic behind Guba and Lincoln's position that the paradigms are incompatible but argues that pragmatism can overcome logical contradictions. He advocates the use of "mind shifts back-and-forth between paradigms within a single evaluation setting" (1988). Moreover, he has found that if a commitment to an empirical perspective exists—basic pragmatism and a sensitivity to client needs—the other differences can be negotiated.

Patton recognizes that his call for flexibility is an ideal fraught with difficulties. A multitude of method and measurement choices exist in any study. Paradigmatic contrasts are useful pedagogical devices to highlight the different values of each approach. But in practice, methods choices are made along a continuum. Obtrusiveness and manipulation may be considered taboo in qualitative approaches, but they do exist. The issue is one of intent and degree.

Patton reflects on recent tendencies in evaluation practice. Significant proponents of the experimental design have endorsed qualitative methods and apparently have less resistance to the phenomenological paradigm. However, quantitative approaches are still dominant. Merging qualitative and quantitative approaches has been problematic, but Patton notes that many efforts have been successful. In essence, he sees the debate from a pragmatic, empirical perspective, viewing what researchers do in practice in comparison with a strictly logical or theoretical perspective. Fundamentally, Patton attempts to lift the blinders of methodological habit from evaluators and to increase the options available to them.

Eisner presents the role of educational connoisseurship and criticism in educational evaluation in "Educational Connoisseurship and Criticism: Their Form and Functions in Educational Evaluation" (Eisner, 1976) and in his article "On the Differences Between Scientific and Artistic Approaches to Qualitative Research" (Eisner, 1981). Connoisseurship and criticism together represent an important alternative in educational research. This option is distinct from other qualitative approaches in being epistemologically rooted in the arts rather than in science.[8] Eisner recommends this alternative to change conventional positivistic forms of evaluation. He rejects the concept that classroom life is controlled by behavioral laws. Instead, he believes evaluation should seek to improve the individual artistry demonstrated by individual teachers in unique classroom settings. Eisner explains that "connoisseurship is the art of appreciation, [and] criticism is the art of disclosure" (1976, p. 141). Connoisseurship requires an awareness and an understanding of the phenomena observed and/or experienced. Educational criticism involves description, interpretation, and evaluation. Description is thick and detailed, capturing the subtleties and the spirit of the moment. Interpretation is informed by "social sciences and the practical wisdom born of experience in schools" (p. 145). Evaluation requires a value judgment about the educational significance of the observation or research finding.

Eisner discusses two procedures to determine the validity of this approach: structural corroboration and referential adequacy. Structural corroboration refers to the extent to which pieces of the puzzle fit together and validate each

other. It is similar to the process of determining whether the threads of a murder mystery are woven into a recognizable (or credible) pattern. Referential adequacy involves comparing the critical disclosure with the phenomenon. It represents a form of interjudge or intersubjective agreement. Eisner uses art education to illustrate the utility of educational connoisseurship and criticism in his discussion. However, the application of this approach goes beyond any single discipline. The product of this venture is the reeducation of perception for the teacher, the student, the administrator, and the scholar.

New Developments

Social conditions must be ripe for change. Smith's (1981, 1988) exploration of alternative research and evaluation methods is rooted in the same social order that gave rise to the interest in qualitative methods in this review. An increased interest in qualitative approaches, together with a disillusionment with traditional experimental and quasi-experimental approaches, facilitated the development of new qualitative methods: metaphors. Smith reports the findings of an exploratory National Institute of Education project that used other fields as metaphors for educational research and evaluation in "Mining Metaphors for Methods of Practice" (Smith, 1988). He defines a metaphor as a device to use "one object to create a new perspective on another" (p. 4). In essence, the project attempted to view educational research from the perspectives of a number of other fields. In addition, metaphors provided an insight into alternative techniques, new conceptual distinctions, and professional roles that might improve educational research and evaluation.

Smith reviews nine metaphors to illustrate the range of methods investigated in the study: law, journalism, management consulting, economics, operations research, geography, photography, music, and art. For example, law as a metaphor offers education such valuable tools as legislative histories, the appeals process, and case histories. It also provides the concept of levels of confidence and adversary hearings, which can be applied to various evaluation settings. Art, in the forms of photography, music and visual art, and film criticism, were difficult to adapt to educational research and evaluation, but some results were fruitful. The useful tools adapted from photography include sampling techniques, photo-interviewing, and theory testing. Smith concludes his discussion with a statement about the yield of this exploration and the conditions for success in this project.

During paradigmatic transitions, many alternatives emerge. One of the newest developments is phenomenography. Marton presents this new qualitative approach in "Phenomenography: Exploring Different Conceptions of Reality" (1988). This approach emerges from the qualitative roots of the 1970s, but stands between the alternative approaches and the mainstream paradigm. Phenomenography is used to study learning and thinking, mapping the qualitatively different ways in which people experience or think about various phenomena, such as numbers, reading, and thinking. Marton presents examples of results using this approach and discusses the methodological principles underlying phenomenography. Phenomenography looks at "the relations between human beings and the world around them," focusing on the perception itself. For Marton, perception falls between human beings and the world around them. Marton recognizes that other established traditions have dealt with this domain. However, he is calling for "a specialization in its own right" (p. 7). Categories of description are viewed as the outcome of phenomenographic research. Marton discusses the concept of replicability for this new qualitative approach, separating discovery from identified categories requiring some form of intersubjective agreement. He also discusses how phenomenography evolved from reflections of mainstream research, measuring and improving language proficiency to its present and varied directions. Marton refines our understanding of phenomenography by carefully comparing and contrasting it with other qualitative approaches to educational research, phenomenology and ethnography. He concludes with a discussion of some of the methodological facets of phenomenography, focusing on interviews; educational applications of phenomenography, including documenting the effects and noneffects of educational treatments; and some implications for an epistemological policy that questions the existing scientific base for teacher education.

Regrouping

Firestone and Dawson's "Approaches to Qualitative Data Analysis: Intuitive, Procedural, and Intersubjective," (1988) marks a transition in the acceptance of the qualitative paradigm. They believe qualitative methods have "become an accepted tool in educational research." They recognize, however, that their continued acceptance and full promise require methodological refinement. They explore intuitive, procedural, and intersubjective approaches that aim at disciplining "qualitative inquiry without sacrificing subjective understanding." Like the other authors in this review, they are cultural brokers. They speak the language of evaluation to convince evaluators and other educational researchers that perceived weaknesses in the "new" paradigm have an easy remedy. Simultaneously, they are adept code switchers, speaking the languages of fieldworker and of evaluator in the same breath. Their aim is to encourage qualitative researchers to refine their own approach while working in the field of evaluation. (See also Firestone, 1988.)

Many stages mark the evolutionary development of a discipline (Fetterman, 1986b). A classic stage involves pulling back and regrouping to establish standards commensurate with the mainstream rules and regulations of scientific inquiry. An explicit representative of this developmental stage is presented in "Drawing Valid Meaning from Qualitative Data: Toward a Shared Craft," (Miles & Huberman, 1984a). (Also see Miles & Huberman, 1984b.) Miles and Huberman argue for an "ecumenical blend of epistemologies and procedures." However, in general, they leave the epistemological debate to others. Instead of focusing on the paradigmatic level, they emphasize the practical, methodological level of abstraction.

Miles and Huberman are concerned that there are "few agreed-on canons for analysis of qualitative data." They outline a form of data analysis and specify methods that provide assurance and credibility to the analytical tive researcher's field is well marked, while the qualitative field is "more while the qualitative field is "more perilous." For the authors, the "problem is that there is an insufficient corpus of reliable, valid, or even minimal-

ly agreed-on working analysis procedures for qualitative data" (1984b, p. 2). They provide a suggested audit trail from data collection through analysis and interpretation. Qualitative data analysis, for Miles and Huberman, consists of three components: data reduction, data display, and conclusion drawing and verification. They recommend the following methods of improving the data reduction: drawing explicit conceptual frameworks, bounding inquiry (with specific research questions), specifying the multitude of sampling decisions, and preplanning instrumentation. A variety of interim data-reduction methods are suggested to prevent "excessive prefocusing and bounding," including summary sheets, coding schemes, memos, analysis meetings, and interim summaries.

Miles and Huberman also note that various forms of data display, including descriptive and explanatory matrices, improve data analysis. Among conclusion-drawing tactics are counting, noting patterns or themes, seeing plausibility, clustering, making metaphors, splitting variables, subsuming particulars into the general, factoring, noting relations between variables, finding intervening variables, building a logical chain of evidence, and making conceptual/theoretical coherence. Conclusion verification tactics include checking for representativeness, checking for research effects, triangulation, weighting the evidence, making contrasts/comparisons, checking the meaning of outliers, using extreme cases, ruling out spurious relations, replicating a finding, checking rival explanations, looking for negative evidence, and getting feedback from informants. Miles and Huberman conclude with a call for greater sharing of what qualitative researchers do when they analyze their data.

An examination of the strengths and weaknesses of each approach is presented in *Qualitative Approaches to Evaluation in Education: The Silent Scientific Revolution* (Fetterman, 1988b) to place the silent scientific revolution in paradigmatic perspective. This discussion primarily consists of a mild criticism of the qualitative classics, new developments, and the regrouping effort.

Conclusion: The Quiet Storm

The silent scientific revolution in educational evaluation is like a quiet storm. There are no ominous clouds hovering overhead, but the power of the storm threatens to tear through the intellectual landscape like a tornado. This paradigmatic change is both personal and professional. This article views the storm as it travels through the rough terrain of qualitative research with a focus on evaluation. (However, there are clear applications and implications for educational research in general.) Mapping the progress of the storm may help travelers to navigate through the clouds to the clearer skies ahead.

This discussion has many purposes. First, this brief review was designed to dispel the notion that qualitative research is a monolithic entity: qualitative approaches are varied and manifold. Second, it illustrates the variations in standards. Each qualitative approach has its own standards and evaluation criteria. This article discusses major approaches to facilitate appropriate applications and evaluations of each qualitative approach. A recognition of the intracultural diversity within qualitative evaluation will bring about a more effective criticism of this art and science. Third, this collection of approaches serves as a guide to major qualitative approaches and arguments in evaluation. (Also see Fetterman, 1988b for a more comprehensive guide.) Evaluators—including student evaluators—exposed to a full spectrum of qualitative approaches will be more fully equipped to tackle both basic and policy research agendas than will those who view the world in terms of one qualitative dimension.

By openly discussing strengths and weaknesses in the field, this review is also designed to help those researchers who are shifting their allegiance to a phenomenologically oriented paradigm. This discussion may provide some perspective for their own personal struggle with loyalty and logic, faith and reason.

Notes

[1]This problem of mixing and matching first became apparent to the author while serving as a proposal reviewer. A significant number of proposals attempted to combine qualitative approaches within their research design without regard for their compatibility or incompatibility. This article was prompted by this observation, in combination with a series of striking examples in the literature. See Jacob (1988) for further discussion and clarification of this problem.

[2]See Lincoln (1986) for discussion of this paradigmatic shift in various disciplines.

[3]Cross-disciplinary communication is also fostered by speaking to positivists in native anthropological language when appropriate; code switching can also be an effective method of communication (see Fetterman, 1986a).

[4]We would still believe in Ptolemaic cycles and epicycles as explanations of the planetary system if not for the persistence of these thinkers and the reasonableness of the intellectual community in the long run.

[5]Many collections address the general issue of phenomenology and logical positivism. In addition, journals—most notably *Anthropology and Education Quarterly*—have addressed the debate as it relates to anthropological and educational research. Cook and Reichardt's (1979) work is one of the first books to tackle this paradigmatic debate directly within the context of evaluation research.

[6]The qualitative classics section represents the most prominent standard qualitative approaches used in educational evaluation. It is not designed to be an exhaustive list of all qualitative approaches or their major proponents. For example, illuminative evaluation (Parlett & Hamilton, 1976) is another example of a qualitative approach. See also Hammersley and Atkinson (1983), Goetz and LeCompte (1984), and Wolcott (1975, 1984) for additional information about ethnography in educational evaluation. Kyle and McCutcheon (1984) and Booth (1987) provide insightful illustrations of collaborative evaluation. Yin's (1984) case study work is excellent. Also see the work of such prominent evaluators and educational researchers as Cronbach (1975), Cronbach et al. (1980), House (1979, 1980), Stake (1978), Weiss and Rein (1977), and Wholey (1978, 1979), among many others who set the stage for the current discussion.

[7]Ethnography, though young as a formal science, has roots that trace back to the travelogues of Heraclitus.

[8]Also see Eisner (1981, pp. 5-9; 1985, pp. 216-252).

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