This report discusses the nature of research in the context of distance education and suggests that qualitative research be included as a research methodology for distance education research. Noting that qualitative research represents a shift toward more perceptual, context-embedded interpretive inquiry, the paper argues that it is well suited to the study of complex contextual factors in learning. Three overarching qualitative issues are discussed: (1) the application of traditional criteria such as validity, reliability, and objectivity; (2) coping with sexist biases in everyday and research settings; and (3) coping with apparently chaotic, incomprehensible findings. Five arguments in support of temporary understanding through qualitative research are reviewed, including individual differences, chaos theory, the evolutionary character of development and learning, the roles of consciousness and free will in human activity, and quantum mechanics theory. It is concluded that qualitative research is necessary to gather and interpret people's multiple constructions of reality. (86 references) (DB)
Marrow bone thinking: A plea for strengthened qualitative research in distance education

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Setting a Global Agenda for the Nineties

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Philip Jackson is giving his Presidential Address at the 1990 Annual Meeting of the American Educational Research Association in Boston. He reminds his audience that the value of conclusion-oriented research (as distinct from decision-oriented) is that it will change "the prevailing view" when its results show that the researchers found their data to be complex and puzzling:

"Their words encourage us to envision something far more complicated and dynamic. They speak of a restlessness emerging out of discussion. They talk about findings that seem to conflict, which implies the possibility of being mistaken. They depict investigators as being puzzled, as noticing things that as yet cannot be described in words, phenomena for which language is lacking. They speak of boundaries getting blurry, of topics merging into one another. Investigators, we are told, "find themselves assembling what they know in a new way," almost as though they were doing so unconsciously or perhaps even against their wills" (Jackson 1990:9).

If we are to help change "the prevailing view" with complex, exciting and challenging new research, Jackson concludes, we must

"become self-reflective about our research goals and methods and what they mutely and perhaps inadvertently communicate about our enterprise to the world at large. It requires, among other things, that we conscientiously explore our most deeply held assumptions and presuppositions and that we do so with a directness, a candour, and a tenacity that has seldom typified our work in the past. It was Yeats (1958) who said 'God guard me from those thoughts men think/In the mind alone; He that sings a lasting song/ Thinks in a marrow bone' (p.236). Yeats's prayerful entreaty issued from the soul of a poet, yet its truth, it seems to me, applies to us all. 'He that sings a lasting song thinks in a marrow-bone.' Those are words we all might take to heart." (Jackson 1990:9).

How many "lasting songs" do we have in the distance education research repertoire? How many of us think in our marrow bones? Gender-exclusive language apart, Yeats's poetry and Jackson's reflections are relevant for us; but we have to rely on more than God's protection if we are to challenge prevailing views. We have to rely on our creative and skilled use of both major research paradigms. One of those paradigms - the positivist, with its use of the experimental method - has long been predominant in the theory and practice of education.
But by the 1970's

"Quantitative methods, relying on the hard science paradigm, had not delivered. As the vision (toward another paradigm) widened, qualitative approaches caught people's imagination (see Scriven, 1972). And so, qualitative research mushroomed in education" (Bogdan & Biklen 1982: 21).

The 1970's in fact were characterized by strong debates about the merits of each paradigm and its methodologies - to the point where Rist had to call for the positivists to change their attitude from "disdain" to "detente" (Rist 1977). The effects of that disdain have diminished, especially among researchers who are sensitive to "marrow bone thinking", who are prepared to listen and look in quiet appreciation at how people make meaning and act in their worlds: "most major neopositivist methodologists...have shifted toward more perceptual, context-embedded, interpretive inquiry" (Miles & Huberman, 1990:343). The literature on this second type of inquiry - the naturalistic paradigm- and its associated qualitative methodologies is now extensive (see Appendix 1). Earlier opposition to the naturalistic/qualitative has given way to sophisticated discussions (e.g. Eisner & Peshkin 1990; Eisner 1988), arguments for compatibility with the positivist/quantitative paradigm (e.g., Jaeger 1988; Howe 1987; Firestone 1987) and greater use of qualitative approaches in educational evaluation (Lincoln & Guba 1989; Patton 1982), in adult education (Merriam & Simpson 1989) and in disciplines other than education (e.g., Cobb & Hagemaster 1987; Morgan 1983).

But what of distance education? Can we claim much marrow-bone thinking?; or a balanced use of positivist and naturalistic paradigms? We cannot, but a few writers are arguing that we must use methodologies from each paradigm if our research is to mature (Hotchkis 1990; Kember et al 1990; Minnis 1985; Morgan 1984). Minnis has reflected, with some sadness I suspect, on the current condition of distance education research:

"it is overwhelmingly descriptive, with emphasis on particular institutional problems... (it) reflects an a-historical and/or a-theoretical bias... tends to be context-specific... lacks meaningful cross-cultural or comparative perspectives... is heavily dependent on psychological paradigms which, despite the strengths associated with such paradigms, tends to reduce the problems of distance education to ones which are amenable to the manipulation of psychological variables only (Coldeway & Spencer 1982; Keegan 1982; Kaye & Rumble 1981). What little theory exists in distance education is usually praxiological, deriving more from experience in the sanctioned 'practical' affairs of running programs than from systematic and reflective critique" (Minnis 1985: 190, 191).
Another researcher has deplored the "reality rape" of some statistical analyses and pleads for an "interpretive approach (to) give the most meaningful rendition of what's out there (and do) the least conceptual damage to people in their human interactions" (Hotchkis 1990).

As late as 1990, staff at one well-known distance education research institute were outlining their research goals and methods, but all in the experimental/positivist traditions it appeared. No mention was made of any methodology apart from "experimental projects with model character" which "should contribute further to the scientific grounding of this know-how [about independent study materials] "(Baumeister, Friedrich & Mandl 1990:16, 17). This apparent limitation in research paradigms and methodologies contributes to what I believe are untested assumptions made by the authors about what they think are important areas to research; for example in a paragraph about the need to design study materials which "take over [the constant control for the teacher]", the authors state their goal in words which would indicate a limited awareness of the complex contextual factors in learning, many of which are beyond the educator's control (and always will be ). Their words also reflect their politics and socializations: they show an unquestioned authoritarian view of the teacher's role which many adult and distance educators now find inappropriate:

"In (face-to-face instruction), important teaching functions such as motivation, selection, sequencing and presentation of the teaching materials, diagnosis of learning response and diagnosis-based presentation of content, practice, the transfer of what has been learnt to new situations and other functions are under the constant control of a teacher who is physically present. Self-study materials--texts, pictures, videos, PC-learning programs and decentralized, multi-media learning environments based on these - must be designed in such a way that they can take over these functions to a large extent. The development and design of independent study materials therefore necessitates a thorough analysis of the individual processes occurring under the conditions of independent study: the assimilation, processing, recall and application of new knowledge." (Baumeister,Friedrich & Mandl 1990:16).

There appear to be no indications that any significantly qualitative methodologies are being used, nor that the researchers are struggling with epistemological and ontological issues relating to either paradigm.
In reality, the use of the two paradigms are not always clearly differentiated, but competent researchers know how to use the strengths of each one to collect complex qualitative as well as quantitative data about a phenomenon and to triangulate and analyse that data without context-stripping or loss of rich description. For example, the research of Von Prümmer and Rossie (1990) used methodologies from both paradigms, on the understanding that "the researchers knew the limits of their quantitative data, made their research values and intentions known to their participants, and gave them opportunities to engage in dialogue directly with the researchers" (Von Prümmer 1990).

Methodological Issues

None of the qualitative methodologies for the naturalistic paradigm are soft options! The methodologies have to lead toward "concrete depiction of detail, portrayal of process in an active moae, and attention to the perspectives of those studied (Patton 1980)", (Firestone 1987:20). The net results of a sound qualitative study illuminate complex interactions, propose new questions, challenge existing assumptions, help us to appreciate how other people construct meaning in their lives, and expand our earlier frames of reference (Edson 1988:45). The development of such results demands skills, attitudes and self awareness from the researcher and detailed attention to academic rigour (or what Lincoln & Guba (1985) name as "trustworthiness"). We have to know, for example, why we should choose a phenomenological method to study adult learning, instead of a case study or an ethnography or a grounded theory study or a life history or a literature analysis. Each method has been discussed at length by researchers; we do not need another summary here. Distance education researchers can refer to writers such as Kirby & McKenna (1989); Strauss (1987), Taylor & Bogdan (1984) and Miles & Huberman (1984) for strategies. What is relevant here is a review of what I consider to be three overarching qualitative issues, regardless of specific methods, that affect the maturation of distance education research.

Now that many researchers are out of the "intellectual cul-de-sac" of exclusively quantitative methods and have acknowledged that "generalizations decay" and "statistical realities do not necessarily coincide with cultural realities" (Rist 1982), how do they claim trustworthy qualitative data and findings when working in the unpredictability and complexity of natural settings? Do the traditional criteria of validity, reliability and objectivity still apply? How does one deal with the sexist biases in everyday settings? How do we cope with apparently chaotic, incomprehensible findings?
Trustworthiness has been discussed at some length (e.g., Smith 1984). Lincoln & Guba (1985), in an excellent strategic treatment of this issue, argue that the naturalistic paradigm still has to answer the generic questions about a study's truth value, applicability, consistency and neutrality, but each aspect is covered, respectively, with its own criteria of credibility, transferability, dependability and confirmability. In order, each is the naturalistic paradigm's equivalent of validity (internal & external), reliability and objectivity. Clearly a qualitative researcher is not aiming to falsify a hypothesis nor maintain an objective, distanced relationship with the "subjects", nor produce results that are generalizable in the positivist definition: she/he is dealing with multiple realities and is not dealing with necessarily a truly representative sample, if ever such a sample can be found anyway! The qualitative findings have to provide (i) proof that his/her interpretations have been approved by the actors (credibility), (ii) a rich, thick description of setting and interaction so that the reader can be helped to judge how transferrable are the findings to his/her own setting (transferability); (iii) evidence that instabilities and changes originating in the phenomena or the research process have been accounted for (dependability); and (iv) evidence that the data is reliable because it is confirmable (confirmability). Specific strategies for meeting these criteria are outlined in Lincoln & Guba (1985), and some have applied those criteria into proposal checklists (Cobb & Hagemaster 1987; see Appendix 2).

The issue of sexist bias affects qualitative methodologies as much as it does quantitative ones, but the issue generally has been treated seriously only within the last decade (Eichler 1988). Despite the publication of guidelines for nonsexist language and the existence of many scholarly articles, education research still shows evidence of what Eichler categorizes as four primary sources and three derived sources of sexist bias. The primary sources are androcentricity, overgeneralization, gender insensitivity and double standards. The early work of Carol Gilligan on developmental psychology of women (Gilligan 1982) is now a classic case of a researcher correcting previous research results which were not only based on exclusively male subjects, but also had been generalized to include the female experience. Another interpretive error, for example, has been the use of a male oriented view of the world (patriarchy) to argue that women "subjects" were "deficient" because they did not conform to predictions about behaviour that were, in effect, based on male expectations and socializations. Belenky et al., in a groundbreaking study about how women know themselves and their worlds (Belenky et al 1986), point out one major limitation of research originating in Western traditions that attend to the male stream of experience:

"Thus, we have learned a great deal about the development of autonomy and independence, abstract critical thought, and the unfolding of a morality of rights and justice in both men and women. We have learned less about the development of interdependence, intimacy, nurturance, and contextual thought

Even if none of these analytical mistakes are made, there is another issue which relates to the researcher being the primary instrument for data collection. The issue is one of impact. Consciously or subconsciously, research participants invariably will react to a female researcher in ways different to a male researcher. Gender socialization is so ingrained and beyond conscious awareness for many people that it takes particular consciousness-raising to see it. A male researcher conducting indepth interviews, for example, can never assume that female participants in the study will give the same data as they would to a female researcher.

Distance education research has to deal with this issue. We have the guidelines and the beginnings of serious documentation (Burge & Lenskyj 1990; Kirkup & Von Prummer forthcoming; Faith 1988; Kirkup 1988).

The third issue is just as fundamental, and is attracting wider scholarly attention. It is "the possibility that the phenomena studied in the social and behavioural sciences are essentially unpredictable and indeterminate" (Cziko 1989:17). Cziko presents five convincing, indeed marrow bone level arguments to say that prediction and control experiments will never be successful; that we should hope instead for only temporary understandings. His case rests on individual differences of humans, chaos theory, the evolitional character of development and learning, the roles of consciousness and free will in human activity and quantum mechanics theory.

Essentially chaos theory tells us (a) that it is impossible to predict an outcome over a progression of events, even though strict causality can operate at each single event in the progression; (b) that the dependence on initial conditions for the outcome can be so sensitive as to cause large and/or unpredictable processes for that outcome, and (c) that patterns and sequences can be found in apparently chaotic conditions, if only we know how to detect them (Gleick 1987; Prigogine & Stengers 1984). The now famous "butterfly effect" was originally developed in a meteorological context: the flapping of a butterfly's wings in Brazil could eventually start a tornado in Texas. This theory has enormous implications for research into the many interrelational dimensions of teaching and learning; e.g., how do home/work life factors affect course learning outcomes? Can chaos theory help us better understand course withdrawal and completion? Can it help illuminate patterns of energy and attention in learning?
If we accept an evolutionary approach to learning (argues Cziko), i.e., that the random variation and natural selection applies as it does in the natural world, then we have to accept that:

"Even if a previously found "effective" learning environment could be replicated exactly, it would be very unlikely to lead to the same learning outcomes, even in an identical physical environment using genetic clones of the original teacher and students" (Cziko 1989:20).

The fourth Cziko argument against prediction and control approaches to research is based on human consciousness and free will. Our complex and creative behaviour cannot be known in advance - it is not a deterministic system, nor is our consciousness "available" to a researcher for experimentation.

The fifth and final argument that Cziko uses to press for descriptive and interpretative research in education is based in quantum mechanics. Scientists have changed their thinking from a Newtonian view of the world as predictable and clocklike in its operation to a view that recognizes the random behaviour of subatomic phenomena. Researchers therefore have to think about probabilities in behaviour rather than predictabilities. Other aspects of quantum mechanics eg, a simple measurement of a particle can change that particle, or "that the uncertainties and probabilities observed in quantum phenomena are intrinsic to the phenomena themselves and not the result of incomplete knowledge" (Cziko 1989:23) must surely have relevance to the worlds of learning and teaching.

We must apply Cziko's arguments to distance research. We must enlarge our boundaries of experience and exploration; use qualitative methodologies to gather and interpret people's multiple constructions of reality. We can show how context contributes to meaning whether our research participants are learners, tutors, policy makers, evaluators, learning designers, etc. We can "find [ourselves] assembling what [we] know in a new way". "Marrow bone thinking", those qualitatively oriented methods that will create the "lasting songs" of Yeats's plea, demand research that is holistic, not reductionist; cumulative, not repetitive. It also demands that we, as thinking and feeling humans involved with our research participants, be open and articulate about ourselves, our values and our meaning-making.
References


Qualitative Research: Goals, Methodologies and Issues

A Selected Bibliography

Compiled by

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Research in Distance Education

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Minnis, J. R. (1985). Ethnography, Case Study, Grounded Theory and Distance Education Research. Distance Education, 6(2), 189-198.


Checklist for Assessing a Proposal for Qualitative Research

1. Expertise

<table>
<thead>
<tr>
<th>1.1</th>
<th>Does the researcher demonstrate understanding of and experience with the naturalistic paradigm and the particular qualitative method/s being used?</th>
<th>Yes</th>
<th>No</th>
<th>Cannot Say</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>Are appropriate references cited?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1.3</td>
<td>How much experience in in-depth interviewing and observation is evident?</td>
<td></td>
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</tbody>
</table>

2. Problem and/or Research Question(s)

| 2.1 | Is the lack of knowledge or problem clearly delineated with an appropriate rationale for using qualitative approaches? |     |    |             |
| 2.2 | Is an explanatory background to the problem provided?                                              |     |    |             |
| 2.3 | Is there a single, broad research question? others?                                                |     |    |             |
| 2.4 | Is the scope of the question(s) manageable within the time frame and context of the study?        |     |    |             |
| 2.5 | Is the significance of the study argued?                                                          |     |    |             |

3. Purpose

| 3.1 | What is the purpose of the study?: discovery, description, and explanation; conceptualization (theory building), illustration, or sensitization? |     |    |             |
| 3.2 | Is it clearly stated?                                                                             |     |    |             |

4. Literature Review

4.1 Does the proposed qualitative approach call for a literature review and/or conceptual framework prior to initiating fieldwork? □ □ □

4.2 If so, is the review sufficiently comprehensive? □ □ □

4.3 Are major concepts identified and defined? □ □ □

4.4 If a literature review is appropriate only after data collection, does the researcher outline a process for accomplishing this? □ □ □

4.5 If bracketing assumptions are an important component of the qualitative method selected, is this process explained? □ □ □

5. Context/Setting

5.1 Is the whole context for the study adequately described? □ □ □

5.2 Is a plan for gaining entry to the setting given? □ □ □

5.3 What contextual difficulties are expected? □ □ □

5.4 How will the researcher reduce her/his changing the naturalness of the setting? □ □ □

6. Sample

6.1 Are the unique issues of sampling in a qualitative study adequately addressed? □ □ □

6.2 Are the potential characteristics of the sample outlined? □ □ □
7. Researcher's Stance

7.1 How does the researcher explain her/his personal interests and biases relating to the study?

7.2 How will the researcher record her/his involvement and reactions as the study proceeds?

7.3 How will the researcher operate as the data gathering "instrument"?

8. Data Collection

8.1 Is there a need to use any quantitative methodologies, as well as qualitative ones? If so, how will the two approaches complement each other?

8.2 Does the researcher demonstrate knowledge of general research strategies such as participant-observation, interviewing, recording fieldnotes, and conducting ongoing analysis?

8.3 Are the strategies congruent with the purpose of the study, the research question, and the type of qualitative research selected?

8.4 If so, does the researcher demonstrate skills in their use?

8.5 How will the four general criteria for trustworthiness be applied: i.e., credibility, transferability, dependability, confirmability?
9. Data Analysis and Interpretation

9.1 Does the researcher outline a plan for keeping data organized and retrievable? □ □ □

9.2 How will the researcher apply inductive approaches? □ □ □

9.3 Are tentative theoretical frameworks for analysis identified? □ □ □

9.4 What triangulation measures are planned, i.e., use of multiple data sources and analysis methods to increase the validity of the findings? □ □ □

9.5 How will the study's findings be checked for validity with the participants? □ □ □

9.6 If the theoretical framework is to be derived directly from the data, does the researcher show how this will be accomplished? □ □ □

9.7 Does the researcher indicate the expected limitations of the proposed analysis methods? □ □ □
10. Participants

10.1 Does the researcher demonstrate an understanding of the measures necessary for the protection of participants? □ □ □

10.2 If a written contract or letter of informed consent for participants is called for, are examples included in the proposal? □ □ □

10.3 Is an ethical review by peers of the whole study built into the process? □ □ □

10.4 How will participants and researcher interact in data collection and analysis? □ □ □

10.5 Will the participants be invited to accept a summary/full report of the study? □ □ □

11. Time Frame

11.1 Is there provided a reasonably detailed schedule? □ □ □

11.2 Is the schedule feasible? □ □ □

12. Presentation of data and findings

12.1 How will the findings be organized - e.g., as role analyses, or critical incidents, or themes, or interaction networks, or a natural history? □ □ □

12.2 Who is the intended audience? e.g., do they need/want more description (academics) or more analyses and summaries (policy makers)? □ □ □