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An extension of the concept of triangulation from data collection to data analysis in a qualitative study of successful kindergarten teachers

O'Brien, John Paul, Ed.D.
University of Hawai'i, 1993
AN EXTENSION OF THE CONCEPT OF TRIANGULATION
FROM DATA COLLECTION TO DATA ANALYSIS
IN A QUALITATIVE STUDY
OF SUCCESSFUL KINDERGARTEN TEACHERS

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE
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Abstract

Although qualitative methods have become prominent in both educational research and evaluation, strategies and techniques for qualitative data analysis have not been as well defined as other aspects of this approach to inquiry. This study addresses this concern by developing a strategy for data analysis that extends Denzin's (1978) concept of theory triangulation. This method is then used in an analysis of qualitative data collected in a case study of the instructional practices of successful kindergarten teachers.

In the review of literature completed for the study it was found that even though triangulation is referred to often in the social sciences, there seems to be some confusion as to the meaning of the concept when it is actually applied in research settings. It is proposed that the confusion is caused in part by two different perspectives on the term triangulation commonly found in the literature. One has as a focus the convergence of findings. The other, based on Denzin's work, has as a focus complementary results. It is concluded that Denzin's approach to triangulation, referred to as "complementary triangulation" in the context of the study, more closely aligns with the goals and assumptions of qualitative inquiry than triangulation focusing on convergence.

Complementary triangulation is then used in the study as the conceptual framework to develop an approach to qualitative data analysis that is designed to systematically present multiple perspectives on a single set of data. Based on an application of this method of analysis conclusions are then offered on (a) the
instructional practices of four teachers who participated in a case study of successful kindergarten teachers and (b) the use of theory triangulation as a conceptual framework for the analysis of qualitative data. Sixty-seven classroom practices are presented as common instructional strategies of the four successful teachers, and it is concluded that extending the concept of triangulation from data collection to data analysis makes possible the development of an appropriate and viable framework for the analysis of qualitative data.
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Chapter 1

INTRODUCTION

Qualitative methods have become prominent in both educational research and evaluation during the course of the past 20 years. However, strategies and techniques for qualitative data analysis have not been as well defined as other aspects of qualitative methods (Miles & Huberman, 1984; Tesch, 1990).

The following study presents an approach to qualitative data analysis based upon Denzin's (1978) concept of theory triangulation which is defined as "using multiple rather than single perspectives" (p. 295) in relation to the same set of data. Other types of triangulation presented by Denzin, which are more common in both educational research and evaluation, are triangulation of data sources, observers and methods. Theoretical triangulation has not been readily applied in practice and is considered by some to be an unrealistic form of the strategy of triangulation (Lincoln & Guba, 1985; Mathison, 1988). This dissertation takes an opposing view. Within this study, theoretical triangulation is utilized as a conceptual framework to develop a systematic methodology for data analysis designed to accomplish the qualitative goal of presenting "multiple realities" (Bogdan & Biklen, 1982, p. 38). This method is then utilized in an analysis of qualitative data collected in a case study of the instructional practices of successful kindergarten teachers.

This dissertation is organized in the following manner. Chapter 1 covers the purposes of the study, positions taken on qualitative inquiry, background on the case study, and definitions. Chapter 2 contains the review of literature applicable to this
study and includes sections on qualitative data analysis, triangulation and an approach to data analysis based on theory triangulation derived from the review. Chapter 3 presents the methods used in the collection of data and the strategies selected for data analysis in an application of this approach to analysis. Chapter 4 covers findings, and Chapter 5 offers final interpretations and conclusions.

**Purposes of the Study**

The primary purpose of the dissertation is to develop a method for qualitative data analysis based on the concept of theory triangulation. A secondary purpose is to provide a description of the instructional practices of successful kindergarten teachers derived from an application of this approach to analysis.

**Positions Taken on Qualitative Inquiry**

The following section outlines the assumptions on which the approach to qualitative analysis developed within this dissertation are based.

One of the ongoing debates within the research and evaluation literature in education has been the relative merits of quantitative and qualitative methods and of the philosophical assumptions on which they are based (e.g., Fetterman, 1988; Gage, 1989; Guba, 1990; Rizo, 1991). Firestone (1987) presents the following differences between the two approaches:

Quantitative research is based on positivist philosophy which assumes that there are social facts with an objective reality apart from the beliefs of individuals . . . . Quantitative research seeks to explain the causes of changes in social facts, primarily through objective measurement and quantitative analysis . . . .
Qualitative research is rooted in a phenomenological paradigm which holds that reality is socially constructed through individual or collective definitions of the situation . . . . Qualitative research is more concerned with understanding (Verstehen) the social phenomenon from the actors' perspectives. (pp. 16-17)

This dissertation is based on a qualitative perspective as presented by Firestone (1987) at the paradigm level and is concerned primarily with qualitative methods. Smith (1986) describes qualitative methods in the following manner:

Field methods are used to collect data, including direct observation of action in its natural context, clinical interviews to elicit the multiple meanings of participants in that case, and collection of documents. A qualitative approach leads to reports primarily in the form of words, pictures, and displays rather than formal models or statistical findings. (p. 38)

A second phase of this ongoing "paradigm dialog" (Guba, 1990, p. 17) is whether or not aspects of qualitative and quantitative approaches can be combined. One camp believes that the two approaches are "incompatible because they are based on paradigms that make different assumptions about the world and what constitutes valid research" (Firestone, 1987, p. 16). Those advocating what Howe (1988) calls an "incompatibility thesis" (p.10) include Guba and Lincoln (1989), and Smith and Heshusius (1986).

On the other end of the spectrum are those that take a pragmatic approach.

The pragmatists see a more instrumental relationship between paradigm and methods. To them methods are more collections of techniques. Hence, "the attributes of a paradigm are not inherently linked to either qualitative or quantitative methods. Both methods types can be associated with the attributes of either the qualitative or quantitative paradigm" (Reichardt & Cook, 1979, p. 16). The pragmatists have actually gone on to combine the methods in practice . . . . Argument by example indicates that method types can be and are combined fruitfully . . . . Each method type uses different techniques of presentation to project divergent assumptions about
the world and different means to persuade the reader of its conclusions . . . . [When combined] they present the reader with different kinds of information and can be used to triangulate to gain greater confidence in one's conclusions. (Firestone, 1987, p. 16)

Supporters of the "compatibility thesis" (Howe, 1988, p. 10) include Denzin (1989), Firestone (1990), Miles and Huberman (1988), Patton (1990), and Yin (1989). The position taken in this dissertation is that quantitative and qualitative approaches to research and evaluation are not only compatible but complement one another when combined in a single study.

A third aspect of the ongoing debate is how best to provide appropriate definitions, labels and criteria to determine merit for the many different approaches to research and evaluation currently being called qualitative within education. Jacob (1987) suggests that "a major source of the confusion lies in discussing qualitative research as if it were one approach . . . . Varieties can be more clearly identified and understood by using the notion of research traditions" taken from the non-education disciplines (p. 16). Examples of traditions cited by Jacob include holistic ethnography from anthropology and symbolic interactionism from sociology. Shulman (1988) offers a similar recommendation, basing criteria for the design and evaluation of studies on established research "disciplines" (p. 16).

An alternative means suggested by Smith (1987), addresses the confusion caused by the various approaches by utilizing four major categories that are primarily descriptive.

The body of work labeled qualitative is richly variegated and its theories of method diverse to the point of disorderliness. Qualitative research is vexed by the problem of different labels. One sees terms such as naturalistic
research, participant observation, case study, and ethnography, as well as qualitative research used interchangeably . . . . for the present purposes [stating criteria that can be used to judge the merit of such studies], I will treat them as a package . . . . [first describing] the common features of what is called qualitative research . . . . [and then describing] four different approaches. (pp. 173-174)

The four approaches suggested by Smith are interpretive, artistic, systematic and theory-driven.

This dissertation focuses on the assumptions presented in the approach to qualitative research that Smith (1987) calls systematic.

In sharp contrast to the approaches so far described, some qualitative research might best be described as systematic although the label might not be accepted. Those who practice and advocate this approach seem to base their arguments on a need for greater credibility and accessibility of their findings. They presume that more systematic and better described methods of data collection and analysis will achieve this end. (p. 179)

In summary, the positions taken on qualitative inquiry within this study align with a phenomenological paradigm concerned with multiple perspectives, approaches to research and evaluation combining aspects of qualitative and quantitative inquiry, and qualitative methods that are systematic and well described. The approach to data analysis presented at the end of the review of literature in Chapter 2 is an effort to create a method of qualitative analysis which is systematic, successfully combines aspects of qualitative and quantitative research and presents multiple perspectives on a single set of data.

Background on the Case Study

The qualitative data that are analyzed in this study, utilizing the method for data analysis based on the concept of theory triangulation, were collected in the
1989-90 evaluation of the Hawaii State Department of Education's statewide early education program called Early Provisions for School Success (EPSS). The Department of Education contracted the University of Hawaii, Curriculum Research and Development Group to do the evaluation. The author of this dissertation, as one of seven members of the EPSS evaluation team, was responsible for the development of the design used in the evaluation, the collection of the evaluation data on the island of Oahu, and the analysis of the data collected through the classroom observations. Other evaluation data collected included information from questionnaires and interviews.

The focus of the 1989-90 evaluation was a study to identify and describe practices of successful EPSS teachers, as evaluations of the program from 1984-1989 had indicated that the program had consistently met program goals and objectives. Seven successful EPSS teachers were recruited to participate in the study. They had been identified as "successful teachers" for both the 1987-88 and 1988-89 school year and were selected from approximately 600 kindergarten teachers statewide. With language development being the primary focus of the EPSS Program since 1985, successful teachers were considered those having the greatest impact on students exhibiting language needs.

Utilizing a case study approach, information was gathered on the practices of the seven successful kindergarten teachers. The evaluation design used in the EPSS study, as well as the methods for data collection and analysis, were adaptations of ideas for evaluation presented by Yin (1984) in his book, *Case Study Research*.
Designs and Methods. Through "pattern-matching" (p. 33), the design was directed towards the question, "What do successful teachers do with regard to the EPSS components of assessment, instruction, parent involvement, staff development, and record keeping?" (Nakamura et al., 1990, p. 6).

The evaluation report, which was selected as the best example of "Instructional Research" in the 1991 Division H (American Educational Research Association) Excellent Publications competition, offered several conclusions. These successful teachers were experienced, well organized, and prepared. They utilized positive guidance techniques and the child's prior experiences to facilitate learning. They fostered learning situations which allowed for experiencing, interacting, experimenting and exploring and which emphasized the development of language. The final conclusion offered in the report stated,

Through the process of pattern-matching, we found that while some teachers' practices - especially in the instruction component - were found to be consistent with what is stated in the EPSS guide . . . there were many practices that were not consistently followed. (Nakamura et al., 1990, p. 48)

The response to the evaluation report by the Department of Education was that the study was "well-written, organized and comprehensive . . . [and] the use of Yin's pattern matching as a framework for conducting the case study is valid for the purposes of the study" (Department of Education, communication, October 22, 1990). However, the question that was then asked was, if the teachers were not following the practices outlined in the EPSS guide, "were the seven teachers then using another pattern of instructional guidelines . . . . If they were, what were those guidelines?"
This question, although of interest to all parties involved in the study, was beyond the scope of the evaluation design used in the EPSS study. The approach to analysis presented in this dissertation is an effort to develop a systematic approach to qualitative data analysis that can answer this question. In retrospect, from a qualitative point of view, a limitation of the design developed for the evaluation was the utilization of an approach to data analysis focused on a single perspective (i.e., that of the EPSS guide).

In this study, Chapter 3 presents the method used in an application of the approach to analysis developed in Chapter 2 in a reanalysis of the data collected in the 1989-1990 EPSS evaluation. The reanalysis focuses on the data collected on the four teachers from the island of Oahu. The intent of this reanalysis of the EPSS evaluation data is to demonstrate the appropriateness of an approach to qualitative analysis presenting multiple perspectives on a single set of data by systematically providing additional information on the instructional practices of these successful teachers.

**Definitions**

**Qualitative Study:** A qualitative study, for the purposes of this dissertation, is defined as an approach to inquiry which includes qualitative data and methods and is conducted within a qualitative paradigm. Qualitative data are considered information that is recorded through words rather than numerical values (Worthen & Sanders, 1987, p. 328). Qualitative methods involve the collection of qualitative data through field methods such as direct observation, interviews and the collection of documents (Smith, 1986, p. 38). The qualitative paradigm adopted for this paper "is rooted in a
phenomenological paradigm which holds that reality is socially constructed through individual or collective definitions of the situation" (Firestone, 1987, p. 16-17).

**Data Analysis:** Qualitative "analysis involves working with [qualitative] data, organizing it, breaking it into manageable units, synthesizing it, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others" (Bogdan & Biklen, 1982, p. 145).

**Triangulation:** Triangulation is the combination of data sources, research methods, observers, and theoretical perspectives in the collection and analysis of data (Denzin, 1989).

It is conventionally assumed that triangulation is the use of multiple methods . . . but it is only one form of the strategy. It is convenient to conceive of triangulation as involving varieties of data, investigators, and theories, as well as methodologies. (Denzin, 1989, pp. 236-237)

"Data sources, in this sense, are to be distinguished from methods of generating data" (Denzin, 1989, p. 237). Sources of data can be categorized according to three subtypes: time, space, and person. Sources of information within a study can come from different people, at different times, and from different settings. Data triangulation is the combination of two or more sources of data in the same study (Denzin, 1989, pp. 237-244).

Methodological triangulation is most commonly defined as the combination of two or more research methods. "The rationale for this strategy is that the flaws of one method are often the strengths of another; and by combining methods, observers can achieve the best of each while overcoming their unique deficiencies" (Denzin, 1989, p. 244). Triangulation of methods most often revolves "around comparing data
collected through some kind of qualitative methods with data collected through some kind of quantitative methods" (Patton, 1990, p. 464).

"Investigator triangulation simply means that multiple, as opposed to single, observers are employed . . . . Triangulating observers removes the potential bias that comes from a single person and ensures a greater reliability in observations" (Denzin, 1989, p. 239).

Theoretical triangulation is "the use of multiple perspectives to interpret a single set of data" (Patton, 1990, p. 187). "Theoretical triangulation is best seen as a method of widening one's theoretical framework as empirical materials are interpreted" (Denzin, 1989, p. 241).
Chapter 2

REVIEW OF THE LITERATURE

The following review of literature contains three sections. The first covers qualitative data analysis and the second covers triangulation. The third section entitled, "Extending the Concept of Triangulation" offers conclusions in the form of an approach to qualitative data analysis derived from the review.

Qualitative Data Analysis

The review of the literature on qualitative data analysis starts with a general overview of existing strategies and then continues with a review of the concept of disciplined inquiry as it applies to qualitative inquiry. Three general strategies utilized to analyze qualitative data applicable to this study are then presented and include: inductive analysis, deductive analysis and case study analysis. Within each of the three broad categories, specific approaches to data analysis are reviewed. The final aspect of qualitative data analysis that is presented in this review is the intended outcomes or goals of qualitative inquiry as they relate to the analysis of qualitative data.

General Overview

Strategies and techniques for qualitative data analysis have not been as well defined as other aspects of qualitative methods (Firestone & Dawson, 1988; Fielding & Fielding, 1986; Miles & Huberman, 1984; Smith & Robbins, 1984; Tesch, 1990; Yin, 1989). As a result, Miles and Huberman (1984, 1988), Firestone and Dawson
(1988) and Louis and Miles (1990) have pointed out the need to share information on approaches to analysis.

Existing strategies for qualitative data analysis that have been defined to differing degrees, have ranged from structured/deductive approaches to flexible/inductive approaches (Firestone, 1984; Miles & Huberman, 1984; Smith & Robbins, 1984; Tesch, 1990; Yin, 1989).

Worthen and Sanders (1987) categorize the range of approaches in the following manner, "Methods for qualitative data analysis range from narrative description to quantitative analyses of narrative components" (p.329). They also go on to suggest two characteristics of data analysis that they view as common to the various qualitative approaches, "Searching for patterns and categories . . . [and] analytical induction" (p.330).

Tesch (1990) notes that in most approaches to qualitative analysis, data are in one manner or another segmented and organized into categories. This process she describes in the following manner:

Data are 'segmented', i.e., divided into relevant and meaningful 'units'. . . . [and] the data segments are categorized according to an organizational system that is predominantly derived from the data themselves . . . . Some topical categories, relating to a conceptual framework or to a particular research question, may exist before analysis begins, but for the most part data are 'interrogated' with regard to the content items and themes they contain, and categories are formed as a result. The process is inductive. (pp. 95-96)

This process of determining patterns or categories in qualitative data is generally considered to be a common characteristic of the various approaches that have been defined as, or considered qualitative data analysis. (Firestone, 1984; Miles &
Huberman, 1984; Smith & Robbins, 1984; Tesch, 1990; Worthen & Sanders, 1987; Yin, 1989).

However, approaches that are deductive as well as inductive are considered qualitative by some. As Tesch (1990) notes some conceptual categories for organizing data maybe established beforehand (p. 95). Jacob (1988) states that the established qualitative research traditions she reviewed "differ in the amount of discovery that is incorporated within the design of a single study . . . . [with some using] predetermined questions and designs for individual studies which do not change during the course of the study" (p. 22). Smith (1986) writes that in her view, qualitative is a broad term that "encompasses both inductive and hypothetical-deductive processes of inquiry" (p. 38).

Guba and Lincoln (1989) and Kidder and Fine (1987) differentiate the term qualitative at the paradigm and methods level. They suggest that qualitative methods can be used within either a deductive or inductive process, but that truly qualitative inquiry can only be utilized within an inductive framework.

The limiting of the definition of qualitative analysis to inductive analysis also creates some problems when using qualitative methods in evaluation studies. As Bogdan and Biklen (1982) state in their text Qualitative Research for Education, in evaluation settings it is not always possible to use an entirely inductive approach to data analysis:

[In] evaluation research, researchers are sometimes employed by others to explore particular problems or aspects of a setting or a subject. In that case the coding categories may be more or less assigned . . . . [initially this starts as] a list of topics about which those doing the research [are]
expected to collect data. These later [become] the coding categories.
(p. 162)

In general it is agreed, as noted by Bogdan and Biklen in 1982 that "in the qualitative literature, analysis has never received enough attention" (p. 145). Three recent works devoted primarily to qualitative data analysis are publications by Miles and Huberman (1984), Firestone and Dawson (1988) and Tesch (1990). Tesch (1990) in Qualitative Research: Analysis Types & Software Tools categorizes existing qualitative methods into twenty-six approaches to qualitative research. These approaches are then grouped into two basic analysis types which are used to compare "qualitative analysis software" (p.133) currently available for computers. Miles and Huberman (1984), in Qualitative Data Analysis: A Sourcebook of New Methods, present various "new" approaches to qualitative analysis that help further define data analysis techniques. Firestone and Dawson (1988) in a chapter on data analysis in Qualitative Approaches to Evaluation in Education present an overview of existing qualitative analytic techniques "available to help discipline qualitative inquiry without sacrificing subjective understanding" (p. 210).

Tesch (1990) divides approaches to qualitative analysis into two basic types: "structural analysis" and "interpretational analysis" (p. 99). The approaches considered structural are "at one pole of the continuum . . . [and are usually] formal, partly quantitative types of research" (p. 95). Examples of qualitative research types utilizing structural analysis as defined by Tesch include: content analysis, discourse analysis and structural ethnography.
In the approaches Tesch (1990) labels interpretational analysis two of the
commonalities are "that the data are segmented . . . and the data segments are
categorized according to an organizing system" (p. 113). Qualitative research types
using this approach to analysis according to her categorization include: symbolic
interactionism, grounded theory, naturalistic inquiry, holistic ethnography and
phenomenology. She outlines this approach to analysis in the following manner:

Some methodologists prefer to think of [analysis as] two separate phases:
data organizing and data interpretation . . . . Both operations together are
often referred to as analysis . . . . [Others] reserve the term 'analysis' for
what we have called 'data organizing.' To these researchers
'interpretation' is what follows the analysis of the data . . . . Whether you
take the term 'qualitative data analysis' in its broader or its narrower sense
. . . . as a rule, you must somehow divide the text into segments, and then
you must sort these segments into groups. (p. 114)

According to Tesch (1990) the process of data organizing consists of first
identifying "meaningful" (p. 117) segments in the data documents, and then
categorizing them within one of two types of organizing systems. One type is
"created from prior materials, such as the theoretical framework adopted and/or the
research questions that guide the investigation" and the second type is "constructed
from the data themselves" (p. 119). The first approach would be considered a
deductive process and the second approach inductive.

Tesch (1990) then suggests three methods for handling the data as it is
categorized or "re-contextualized" (p. 123). Two approaches she presents are
described by Bogdan and Biklen (1982) as the "The Cut-Up-and-Put-in-Folders
Approach" (p. 166) and "the File-Card System" (p. 169). The third method presented
by Tesch is "electronic data handling" (p. 130) which is the approach she
recommends based on the availability of existing software programs for computers. Once the data is "re-contextualized" it is ready for interpretation.

Miles and Huberman (1984) consider analysis to consist "of three concurrent flows of activity: data reduction, data display and conclusion drawing/verification" (p. 21) with all three occurring continuously throughout the duration of any qualitative project.

Data reduction "refers to the process of selecting, focusing, simplifying, abstracting and transforming 'raw' data" (p. 21) and is basically the same processes that Tesch (1990) calls data organizing.

Data display is defined by Miles and Huberman (1984) as "an organized assembly of information that permits conclusion drawing" (p. 21). They note that, the most frequent form of [qualitative data] display in the past has been narrative text . . . [which] is terribly cumbersome . . . is dispersed, sequential rather than simultaneous, poorly structured, and extremely bulky. Under these circumstances, it is easy for a qualitative researcher to jump to hasty, partial, unfounded conclusions. (p. 21)

They advocate the use of matrices, graphs, networks and charts in place of or at least in addition to narrative text. They state that based on their experiences they "have become convinced that better displays are a major avenue to valid qualitative analysis" (p. 21).

Conclusion drawing/verification is the "third stream of analysis activity" (p. 22) defined by Miles and Huberman (1984). They note that this process like data reduction and data displays is ongoing throughout any qualitative study. They also point out that even though "final conclusions may not appear until data collection is
over . . . they have often been prefigured from the beginning, even when a researcher claims to have been proceeding 'inductively' " (p. 22).

Firestone and Dawson (1988) in their writings on qualitative analysis note that one of the primary advantages of qualitative inquiry "is that the researcher becomes a primary research 'instrument.' " (p. 210).

Thus, subjective understanding can be fully utilized as a source of data . . . . However, this potential for understanding must be reconciled with the need for verification. In other words, qualitative researchers must still conduct disciplined inquiry that can stand external scrutiny. (p. 210)

They then present three general approaches to qualitative data analysis that "help discipline qualitative inquiry without sacrificing subjective understanding" (p. 210). The three general approaches they present are: intuitive, procedural and intersubjective.

Firestone and Dawson (1988) describe the intuitive approach as a process where knowledge gained through the collection of data in the field "is compared with prior experience, theories, and formulation of problems in a process that is often subliminal" (p. 210). One method they suggest to make this approach less subliminal and more disciplined is the "pattern matching" process outlined by Campbell (1979).

Campbell (1979) describes pattern matching in the following manner.

In a case study done by an alert social scientist through local acquaintance, the theory he uses to explain the focal difference also generates predictions or expectations on dozens of other aspects of the culture, and he does not retain the theory unless most of these are confirmed. In some senses, he has tested the theory with degrees of freedom coming from the multiple implications of any one theory. The process is a kind of pattern-making in which there are many aspects of the pattern demanded by theory that are available for matching with his observations. (p.57)
Suggestions to improve pattern matching presented by Firestone and Dawson (1988) are the "prespecification of the conceptual issues and categories of interest . . . . [and making the specific] process of generation and rejection more public" (p. 212).

The procedural approach, according to Firestone and Dawson (1988), consists of various procedures that exist that "help discipline qualitative inquiry, including data display techniques, triangulation, guidelines for induction, and quantitative techniques" (p. 212). Data display techniques include the "extensive catalog" (p. 212) developed by Miles and Huberman (1984). Firestone and Dawson briefly cover two examples, casual networks and charts, and then note that these procedures "are useful in a number of ways" (p. 212).

First they can promote completeness by helping the researcher remember events or conditions that might otherwise be overlooked; second, they suggest new interpretations and causal connections; third, they can improve the reader's understanding of events or conditions; finally, they facilitate comparing cases and identifying similarities and differences across cases. (pp. 212-213)

Firestone and Dawson (1988) initially present triangulation, as the procedure introduced by Webb, Campbell and others in 1966. This process Firestone and Dawson state is,

the search for convergence across methodologies . . . . [and] for several reasons it must be treated more as a guideline than as a firm set of procedures. First, it is difficult to know when two methods in fact present confirmatory evidence. Second, when the evidence from different methods conflicts, it is difficult to know which method, if any, is more correct. (p. 213)

They then go on to note that "seemingly contradictory evidence generated from different methods can all be correct" (p. 213). Triangulation also produces evidence
that "represent different perspectives on or aspects of phenomena. Such situations often generate discovery and new understanding" (p. 213). They cite one example of this approach to triangulation, a study by Jick (1979) where seemingly contradictory evidence led to further data gathering and a more complete final understanding of the phenomena being observed.

Guidelines for induction are the third category of the procedural approach presented by Firestone and Dawson (1988). As they note "perhaps the best-known of these is Glaser and Strauss's (1967) constant comparative method" (p. 213). Glaser and Strauss in *The Discovery of Grounded Theory* describe the method as having four stages which are, "(1) comparing the incidents applicable to each category, (2) integrating categories and their properties, (3) delimiting the theory, and (4) writing the theory" (p. 105).

Another example of guidelines for induction presented by Firestone and Dawson (1988) are those utilized by Yin (1981). Firestone and Dawson summarize Yin's approach in the following manner:

Yin's approach works from a single case. The researcher develops an explanation for outcomes from a single case and applies it to subsequent cases, modifying it to fit the specifics of each situation until the final explanation generalizes across all cases. (p. 214)

Procedural approaches covered by Firestone and Dawson (1988) also include quantitative techniques which have been used to analyze qualitative data. These techniques begin with the codification of data. Then the *coded data can be used in a number of ways . . . . [to present] distributions of activities . . . . for
cross-tabulations and with statistical tests . . . . [and] to show relationships between variables" (p. 215).

The final general approach to analysis suggested by Firestone and Dawson (1988) to "help discipline qualitative inquiry" (p. 210) is the inter-subjective approach. This approach "requires interaction among researchers or between researchers and setting participants regarding the research findings" (p. 215).

The intersubjective approach is usually intended to lead to a final product that all can agree represents a valid description and analysis of a situation . . . . Including site participants in the data analysis is becoming more common, especially through sharing draft project reports with subjects. Interpretations are considered much more likely to be valid if they have been confirmed by setting participants. (pp. 216-217)

In their concluding sentence, Firestone and Dawson (1988) note that the three general approaches they suggest for qualitative analysis: intuitive, procedural, and inter-subjective, contribute "to understanding and verification in different ways, the strongest analysis strategies will find ways to combine all three" (pp. 218-219).

In summary qualitative data analysis can be defined as analysis of information that is recorded through words rather than numerical values. The process generally involves organizing this information into meaningful segments and then categorizing the segments within an organizing system. This information is then presented in narrative texts and/or data displays. Following data analysis, which is being defined in this dissertation as the segmenting, categorizing and presentation of data, is interpretation or what Miles and Huberman (1984) call "conclusion drawing/verification" (p.22). Although qualitative analysis usually follows an inductive mode of inquiry, both inductive and deductive approaches are appropriate depending upon
the context and intent of the study, and the philosophical/paradigm stance of the researcher or evaluator.

Approaches to qualitative analysis presented by Firestone and Dawson (1988) that help discipline qualitative inquiry so that it "can withstand external scrutiny" (p. 210) include: pattern matching (Campbell, 1975); visual data displays (Miles & Huberman, 1984); triangulation (Webb et al. 1966; Jick, 1979); guidelines for induction (Glaser & Strauss, 1967; Yin, 1981); and interaction among researchers and between researchers and participants. They recommend that these approaches to analysis be used in combination in multi-method designs as they each have distinct strengths and weaknesses.

Disciplined Inquiry

One of the criticisms of some approaches to qualitative inquiry has been that "one cannot ordinarily follow how a researcher got from 3600 pages of field notes to the final conclusions" (Miles & Huberman, 1984, p. 16). Qualitative studies where the data analysis procedures are not clear have been called "intuitive" (Firestone & Dawson, 1988), "reflection" (Tesch, 1990) and "artistic" (Smith, 1987). Often in this type of qualitative inquiry the "data analysis process cannot even be articulated" (Tesch, 1990, p. 95). For example as Firestone and Dawson note for the approaches they call intuitive:

Intuition is such a private process that it is difficult to convey the methodology to a reader and to subject the results to external scrutiny. The reader knows little about how the researcher arrived at the conclusions or how firmly they are grounded. Hence, research reports in which intuition is used alone sometimes lack credibility. (p. 210)
In contrast there are those who advocate approaches to qualitative inquiry that are "disciplined" (Shulman, 1988), "credible" (Guba & Lincoln, 1990) and "systematic" (Smith, 1987). "They assume that more systematic and better described methods of data collection and analysis" will result in findings with greater credibility (Smith, 1987, p. 179). The goal of such approaches is to verify "the match between the constructed realities of respondents or stakeholders and those realities as represented by the evaluator" or researcher (Guba & Lincoln, 1990, p. 237).

Disciplined inquiry, according to Shulman (1988), is the common characteristic that differentiates research disciplines from other forms of discourse. As Shulman notes the most important characteristic of "disciplined inquiry is that its data, arguments, and reasoning be capable of withstanding careful scrutiny by another member of the scientific community" (p. 5).

Guba and Lincoln (1990) referring to "credibility" suggest several techniques for data collection and analysis that increase the probability that findings and interpretations can be "verified" (p. 237). The techniques include: prolonged engagement; persistent observation; peer debriefing; negative case analysis; progressive subjectivity; and member checks. Guba and Lincoln also included triangulation as a credibility check in their earlier work (Lincoln & Guba, 1985) but later dropped it "because triangulation itself carries too positivist an implication" (1990, p. 240).

Supporting systematic approaches to qualitative inquiry are those concerned with the "credibility and accessibility of their findings" (Smith, 1987, p. 179). Miles and Huberman (1984) suggest "some techniques a researcher could use to verify
propositions and enhance validity” (Smith, 1987, p. 181). These tactics for testing or confirming findings include:

- checking for representativeness;
- checking for researcher effects . . .
- triangulating across data sources and methods . . . weighting the evidence, deciding which kind of data are most trustable . . . contrasts/comparisons;
- checking the meaning of outliers and using extreme cases . . . ruling out spurious relations; replicating a finding; checking out rival explanations;
- looking for negative evidence . . . getting feedback from informants.

(Miles & Huberman, 1984, p. 231)

As noted earlier Firestone and Dawson (1988) also suggest several procedures "to help discipline qualitative inquiry" (p. 210). These include the approach to inductive analysis described by Glaser and Strauss (1967), the pattern matching approach to analysis described by Campbell (1979), triangulation and feedback from informants and peers.

In summary, approaches to qualitative analysis supporting the concept of "disciplined inquiry" are based on the assumption that more systematic and better described methods of analysis will result in findings with greater credibility. Guba and Lincoln (1990), Miles and Huberman (1984) and Firestone and Dawson (1988) have suggested various procedures and approaches to help discipline qualitative analysis. Strategies covered by all three references, include triangulation and feedback from informants and peers.

**Inductive Analysis**

"Qualitative methods are particularly oriented toward exploration, discovery, and inductive logic" (Patton, 1990, p. 44). Research strategies are inductive when,
The researcher attempts to make sense of the situation without imposing preexisting expectations on the phenomenon or setting under study. Inductive analysis begins with specific observations and builds toward general patterns . . . Inductive analysis contrasts with the hypothetical-deductive approach of experimental designs that requires the specification of main variables and the statement of specific research hypotheses before data collection begins. (p. 44)

An inductive approach to analysis is often considered a primary characteristic of qualitative inquiry although both inductive and deductive designs are used in qualitative studies. Bogdan and Biklen (1982) note that generally in qualitative research both the research design and the procedures for data analysis are considered inductive (pp. 51-52). As a result, decisions about research design as well as data analysis "are made throughout the study—at the end as well as the beginning" (p. 56). They point out that this inductive process is one of the characteristics that differentiates qualitative research from the hypothetical-deductive designs "traditionally" used in educational research:

Traditional researchers speak of the design of a study as the product of the planning stage of research. The design is then implemented, the data collected and analyzed, and then the writing is done. While qualitative studies take a similar course, the various stages are not so segmented.... Although the most intensive period of data analysis usually occurs in the later stages, data analysis is an ongoing part of the research. (p. 56)

It is the evolving nature of the inductive approach to research designs and data analysis that would seem to create some of the questions on the clarity of the procedures for qualitative data analysis, especially for those holding a "traditional" perspective on research. For example, in a "traditional" manner, Bogdan and Biklen (1982) in their book Qualitative Research for Education include separate chapters on research design, data collection, data analysis, and writing. However they cover two of
the more well defined approaches to the inductive analysis of qualitative data, analytic induction and constant comparison, in the chapter on research design. From an inductive perspective this makes sense as the collection and analysis of data are an ongoing part of the design and not separate activities. However, from the "traditional" perspective, this is somewhat confusing. The expectation from this perspective would be that information on data analysis would be in the section on data analysis not research design.

In their chapter on data analysis, Bogdan and Biklen (1982) suggest that in general "it is useful to think of approaches to [inductive] analysis falling in two modes" (p. 146). One approach involves,

collecting data before doing the analysis. [However] because reflecting about what you are finding while in the field is part of every qualitative study, researchers only approach this mode, never following it in its pure form . . . . [in an inductive approach] some analysis must take place during data collection. Without it, the data collection has no direction. (p. 146)

In this approach where the "final" analysis occurs after data collection, they offer several suggestions to also help "make analysis an ongoing part of data collection" (p. 146). These include:

Force yourself to make decisions that narrow the study . . . . Force yourself to make decisions concerning the type of study you want to accomplish . . . . Develop analytic questions . . . . Plan data collection sessions in light of what you find in previous observations . . . . Write many 'observer's comments' about ideas you generate . . . . Write memos to yourself about what you are learning . . . . Try out ideas and themes on subjects . . . . Begin exploring literature while you are in the field . . . . Play with metaphors, analogies, and concepts . . . . (pp. 146-154)
For "analysis after data collection" (p. 155) they suggest a process similar to the steps outlined earlier as those characteristic of most qualitative inquiry. After data collection, the data are segmented through coding, placed in a new organizing system and then interpreted. They refer to this process as "developing coding categories" (p. 156) followed by "the mechanics of working with data" (p. 162) where the data are organized and sorted and finally, interpretation in the "writing stage" (p. 170).

The second general mode of analysis they cover involves concurrent data collection and data analysis where analysis is "more or less completed by the time the data is gathered" (p. 146). As examples of this approach, they cover in their chapter on research design "modified analytic induction" (p. 65) and "the constant comparative method" (p. 68). They note these approaches to design and analysis generally involve multiple sites or subjects, and "are oriented more toward developing theory" (p. 65).

Bogdan and Biklen (1982) introduce analytic induction as an approach to research design and data analysis by stating that "It has had a long and controversial history" (p. 65) within qualitative research. For example, Glaser and Strauss (1967), Diesing (1971) and Denzin (1978) all cover analytical induction in their discussions of approaches to data analysis in their writings on qualitative inquiry. Bogdan and Biklen outline the steps involved in a "modified version" of analytic induction to include:

1. Early in the research you develop a rough definition and explanation of the particular phenomenon.
2. You hold the definition and explanation up to the data as it is collected.

3. You modify the definition and/or explanation as you encounter new cases that do not fit the definition and explanation as formulated.

4. You actively seek cases that you think may not fit into the formulation [negative cases].

5. You redefine the phenomenon and reformulate the explanation until a universal relationship is established, using each negative case to call for a redefinition or reformulation. (p.68)

The ongoing data analysis occurs throughout this process and involves categorizing and interpreting the data that is collected. In the example given by Bogdan and Biklen this process involves developing propositional statements, diagrams and definitions that are rewritten and modified "to fit each new case" (p. 66).

Glaser and Strauss (1967) summarize analytic induction in a similar manner:

It tests a limited number of hypotheses with all available data, consisting of numbers of clearly defined and carefully selected cases of the phenomena . . . . The theory is generated by the reformulation of hypotheses and redefinition of the phenomena forced by constantly confronting the theory with negative cases, cases which do not confirm the current formulation. (p. 104)

During the ongoing data collection and analysis, "the analyst . . . . makes an effort to code all relevant data . . . . and then systematically assembles, assesses and analyzes these data in a fashion that will constitute proof for a given proposition" (p. 101).

The constant comparative method is the other example of concurrent data collection and analysis given by Bogdan and Biklen (1982). They describe this method as "a research design for multi-data sources, which is like analytic induction in that the formal analysis begins early in the study and is nearly completed by the
end of data collection" (p. 68). The steps in the constant comparative method as presented by Glaser (1978) are outlined by Bogdan and Biklen in the following manner:

1. Begin collecting data.

2. Look for key issues, recurrent events or activities in the data that become categories of focus.

3. Collect data that provide many incidents of the categories of focus with an eye to seeing the diversity of the dimensions under the categories.

4. Write about the categories you are exploring, attempting to describe and account for all the incidents you have in your data while continually searching for new incidents.

5. Work with the data and emerging model to discover basic social processes and relationships.

6. Engage in sampling, coding, and writing as the analysis focuses on the core categories. (p. 69)

Bogdan and Biklen note that although the constant comparative method can be outlined as a series of steps, the process of sampling, coding and writing "goes on all at once, and the analysis keeps doubling back to more data collection and coding" (p. 70).

Glaser and Strauss (1967), "who formulated the constant comparative method" (Bogdan & Biklen, 1982, p. 70) state in The Discovery of Grounded Theory: Strategies for Qualitative Research that the purpose of the constant comparative method is generating theory (p. 21). "In contrast to analytic induction, the constant comparative method is concerned with generating and plausibly suggesting, but not provisionally testing, many categories, properties, and hypotheses" (p. 104).
Strauss (1987) in *Qualitative Analysis for Social Scientists* notes that this approach to qualitative analysis is also termed grounded theory, "because of its emphasis on the generation of theory and the data in which that theory is grounded" (p. 22).

Grounded theory is a detailed grounding by systematically and intensively analyzing data, often sentence by sentence, or phrase by phrase of the field note, interview, or other document; by constant comparison, data are extensively collected and coded . . . thus producing a well-constructed theory. The focus of analysis is not merely on collecting or ordering a mass of data, but on organizing many ideas which have emerged from analysis of the data . . . . producing complex, conceptually woven, integrated theory; theory which is discovered and formulated developmentally in close conjunction with intensive analysis of data. (pp. 22-23)

Tesch (1990) states that Glaser and Strauss (1967) as well as Miles and Huberman (1984) "provide extensive and thorough descriptions of their [qualitative] analysis procedures" (p. 88), while less information exists on other approaches. Tesch also suggests that "many of the principles underlying grounded theory construction were employed in the studies that yielded the material for Miles and Huberman's book . . . although Strauss feels that these authors misunderstood some of the grounded theory technology" (p. 86).

Yin (1989) proposes an analytic strategy he consider a procedure "similar" to the constant comparative method of Glaser and Strauss (1967). Yin calls this process "explanation-building" (p. 113) and delineates it as:

- making an initial theoretical statement or an initial proposition about policy or social behavior;
- comparing the findings of an initial case against such a statement or proposition;
• revising the statement or proposition;
• comparing other details of the case against the revision;
• again revising the statement or proposition;
• comparing the revision to the facts of a second, third or more cases; and
• repeating this process as many times as is needed. (pp. 114-115)

Other steps Yin suggests in this process are:

• constant reference to the original purpose of the inquiry and the possible alternative explanations . . . .
• use of a case study protocol . .
• establishment of a case study data base for each case . .
• following of a chain of evidence. (p. 115)

Because the procedure outlined by Yin starts with the specification of an "initial theoretical statement or and initial proposition" (p. 114), the procedure might not be considered entirely inductive. However, if this initial statement or proposition were based on the findings of the initial case, the procedure would then be more clearly inductive and very similar to the constant comparative method of Glaser and Strauss.

In summary, in both of the general approaches to inductive analysis as outlined by Bogdan and Biklen (1982), analysis after data collection and concurrent data collection and analysis, the procedural steps for the actual analysis of the qualitative data are basically the same. An organizing system is created from the data and the data is then coded in some fashion, placed in the new organizing system and then presented. In one approach this procedures occurs primarily after data collection, in the other it is an ongoing part of the data collection process. The "inductive logic"
for both approaches is the same. To the greatest extent possible, "the researcher attempts to make sense of the situation without imposing preexisting expectations on the phenomenon or setting under study. Inductive analysis begins with specific observations and builds toward general patterns" (Patton, 1990, p. 40).

Inductive approaches to analysis of qualitative data include analytic induction, the constant comparative method developed by Glaser and Strauss (1967) and the "explanation-building" strategy described by Yin (1989).

**Deductive Analysis**

A deductive approach to data analysis is generally considered a characteristic of quantitative research and evaluation methods. However, as noted earlier, deductive analysis is also considered applicable to qualitative studies. In situations where evaluation questions (Bogdan & Biklen, 1982, p. 162) or research questions (Tesch, 1990, p. 96) or conceptual frameworks (Miles & Huberman, 1984, p. 134) guide initial data collection and analysis, a qualitative study would have to be considered a deductive process, at least on the front end.

Strauss (1987) suggests that for the constant comparative method [or grounded theory] one of the common "misconceptions of the grounded theory approach to qualitative analysis . . . . [is] that the approach is totally inductive" (p. 55). In *The Discovery of Grounded Theory* (1967), Glaser and Strauss state that,

> the initial decisions are not based on a preconceived theoretical framework . . . . [but] the sociologist may begin the research with a partial framework of 'local' concepts, designating a few principal or gross features of the structure and processes in the situations that he will study. (p. 45)
Miles and Huberman (1984) recommend that qualitative studies begin within a deductive framework and then become more inductive "along the way" (p. 134). They suggest that this approach is especially important in studies involving multiple-sites or cases with more than one researcher. As they state, "If different field workers are operating inductively, with no common framework or instrumentation, they are bound to end up with the double dilemma of data overload and lack of comparability across cases" (p. 28). They also note that there are "trade-offs" with this approach:

The looser the initial framework, the more each researcher can be receptive to local idiosyncrasies, but cross-site comparability will be hard to get and the costs and the information load will be colossal. Tightly coordinated designs face the opposite dilemma: They yield more economical, comparable, and potentially generalizable findings, but they are less site-sensitive and may entail bending data out of contextual shape to answer a cross-site analytic question. (p. 28)

Miles and Huberman (1984) also suggest that from their perspective, inductive and deductive approaches "are more similar than conceptual purists have claimed, when one comes to grips with real data in real time" (p. 134). From their perspective:

Inductivists are also operating with research questions, conceptual frameworks, and sampling matrices, but their choices are simply more implicit and the links between framework and procedures are less linear. Nevertheless, these choices, of necessity, serve to bound and focus the study. (p. 34)

Although deductive approaches to analysis are mentioned in the literature on qualitative inquiry, fewer examples of specific procedures are cited, as the focus on analysis is generally on inductive procedures. Examples of approaches that are mentioned are content analysis (Guba & Lincoln, 1981; Tesch, 1990; Worthen &

Two approaches to content analysis are suggested by Worthen and Sanders (1987):

Informal content analysis provides qualitative summaries of documents. Formal content analysis seeks to quantify content objectively, according to explicitly formulated rules and mutually exclusive and exhaustive categories. The content analyst actually counts coding units (for example, words, themes, paragraphs) and places them within categories. (p. 314)

Guba and Lincoln (1981) note that from their perspective the categories used in content analysis should "emerge from the material itself rather than be imposed a priori by a theoretical construct" (p. 240). However, they also note that "content analysis has been historically defined as a quantitative technique" (p. 242). If a theory, hypothesis, and/or inquiry questions guide the coding process and determine content categories, as has been traditionally the case, content analysis would be considered a deductive process.

Pattern-matching, within a deductive framework, consists of a theory or conceptual framework guiding data collection and analysis. For example, Campbell (1966) describes pattern-matching in the following manner:

It has long been a common property among logical positivism to describe scientific theory as an internally consistent formal logic (analytically valid) which becomes empirical (gains synthetic truth) when various terms are interpreted in a data language. A variant of this general model is accepted here. The formal theory becomes one 'pattern' and against this pattern the various bodies of data are matched . . . These empirical observations provide the other pattern . . . The data are not required to have an analytical coherence among themselves, and cannot really be assembled as a total except upon the skeleton of theory. (p. 97)
He further refined this concept in "Degrees of Freedom and the Case Study." In that article he states:

In a case study done by an alert social scientist who has thorough local acquaintance, the theory he uses to explain the focal difference also generates predictions or expectation on dozens of other aspects of the culture, and he does not retain the theory unless most of these are also confirmed. In some sense, he has tested the theory with degrees of freedom coming from the multiple implications of any one theory. The process is a kind of pattern-matching (Campbell, 1966; Raser, 1969) in which there are many aspects of the pattern demanded by theory that are available for matching with his observations on the local setting. (1979, p. 57)

As noted by Lakomski (1983) Campbell admits that his "reflection" would not affect his teaching or research methods. In Campbell's words, "This paper is obviously exploratory... it will not appreciably affect my own teaching about quasi-experimental designs and research methods" (1979, p. 66). Others who have gone on to apply this approach to pattern matching include Rosenblatt (1981), Miles and Huberman (1984), Yin (1989) and Marquart (1990).

It should also be noted that this perspective on pattern matching is similar to other approaches in research and evaluation where theories or conceptual frameworks are utilized to guide data collection and analysis. For example, Tesch (1990) explains that "the basic procedure in content analysis is to design categories that are relevant to the research purpose and to sort words or other recording units into these categories" (p. 79). Goetz and LeCompte (1984) describe "typological analysis" as an analytical procedure which, "involves dividing everything observed into groups or categories on the basis of some canon for disaggregating a whole phenomenon. Such typologies
may be devised from a theoretical framework or set of propositions or . . . . "

(p. 183). However, as Rosenblatt (1981) points out,

Campbell's recommendation to seek information relevant to implications of one's theories is not new . . . But Campbell has placed the seeking of such information in a persuasive epistemological framework, a framework which makes it easy to conceptualize and engage in the process of tracking down theoretical implications. The key concept in his analysis is the analogy he draws between degrees of freedom in studies based on a number of cases and the 'degrees of freedom' quality of case studies in which a number of observations relevant to a specific theory can be made. (p.205)

Rosenblatt (1981), from the perspective of an anthropologist, links the pattern matching approach of Campbell to "etic analyses - analyses using an imposed frame of reference [versus] emic analyses - analyses working within the conceptual frameworks of the people being studied" (p. 202). He recommends that in fieldwork that involves Campbell's "degrees of freedom perspective," the theoretical focus be identified before entering the field to assure the analyses includes "disciplined search in the field setting" (p. 198) for data challenging the theory.

Yin (1989) suggests two approaches to analysis which utilize the pattern matching concept described by Campbell. One of the approaches he describes as "nonequivalent dependent variables as a pattern" (p. 109). In this approach an overall pattern of outcomes is predicted for each of the nonequivalent dependent variables based upon a particular theory or proposition. If the results are as predicted the pattern would match. "However, if the results fail to show the entire pattern as predicted - that is, even if one variable does not behave as predicted - your initial proposition would have to be questioned" (p. 110).
The other approach Yin (1989) describes as "rival explanations as patterns" (p. 111). He explains this approach in the following manner:

A second type of pattern-matching is for independent variables. In such a situation . . . several cases may be known to have had a certain type of outcome . . . . This [approach to] analysis requires the development of rival theoretical propositions, articulated in operational terms . . . If one explanation is to be valid, the others cannot be. This means that the presence of certain independent variables (predicted by one explanation) precludes the presence of other independent variables (predicted by a rival explanation) . . . . The concern . . . is with the overall pattern of results and the degree to which a pattern matches the predicted one. (p. 111)

Yin (1989) also suggests that both approaches to pattern matching "can be done with either a single or multiple cases" (p. 111). In both situations, if identical results "were additionally obtained over multiple cases, literal replication of the single cases would have been accomplished, and the cross-case results might be stated even more assertively" (p. 111).

In summary a deductive approach to data analysis is more often associated with quantitative research and evaluation methods than with qualitative studies. However, in situations where a given conceptual framework such as a set of evaluation questions or a specific theoretical perspective guide data collection and analysis, qualitative studies would be considered at least in part, a deductive process.

The procedures outlined earlier as characteristics of most qualitative data analysis would be basically the same for both inductive and deductive approaches. The only difference would be the order or sequence of the procedures. In inductive analysis, the organizing system used for segmenting, categorizing and presenting the data is created from the data either after the data is collected or as a ongoing part of
the data collection process. In deductive analysis, the organizing system used for segmenting, categorizing and presenting the data is based on a conceptual framework and is developed before data collection and analysis begins.

Deductive approaches to analysis of qualitative data include content analysis, certain types of "typological analysis" as described by Goetz and LeCompte (1984) and the pattern matching approach based on the ideas of Campbell (1979), Rosenblatt (1981) and Yin (1989).

Case Study Analysis

The case study is often considered "the classical qualitative research design" (Firestone & Herriott, 1984, p. 63). Traditional case studies have often been descriptive and the specific strategies for data analysis and interpretation have not always been shared with the reader.

Guba and Lincoln (1981) note that this is one of the disadvantages of the case study approach as traditional case studies "depend heavily on the interpretations of the writer and on his selection of the information to be presented" (p. 377). Firestone and Dawson (1988) in their discussion of intuitive approaches to qualitative data analysis, express a similar concern. They state that "there are a number of fine examples of case studies in education that rely heavily on intuition, but few (if any) describe how they formulated their interpretive framework and the elements that were rejected along the way" (p. 212). Such concerns have led "many research investigators . . . [to view case studies] as a less desirable form of inquiry" (Yin, 1989, p. 21). Guba and Lincoln (1981) also note for some "It is also objected that case studies are not
sufficiently scientific. Presumably this criticism means that case studies are not sufficiently objective or neutral* (p. 377).

Proponents of the traditional case study as a research strategy would counter that such concerns and criticisms are misplaced. They would point out that the priority for this approach to inquiry is to provide meaningful description and "naturalistic generalization" not to demonstrate objectivity and neutrality. Stake (1978) defends this perspective on the case study in an article entitled "The Case Study Method in Social Inquiry:"

In American research circles most methodologists have been of positivistic persuasion. The more episodic, subjective procedures, common to the case study, have been considered weaker than the experimental or correlational studies for explaining things. When explanation, propositional knowledge, and law are the aims of an inquiry, the case study will often be at a disadvantage. When the aims are understanding, extension of experience, and increase in conviction in that which is known, the disadvantage disappears. ... What becomes useful understanding is a full and thorough knowledge of the particular, recognizing it also in new and foreign contexts. That knowledge is a form of generalization too, not scientific induction but naturalistic generalization . . . (p. 6)

Stake describes the typical case study in the social science in the following manner:

In the social science literature, most case studies feature: descriptions that are complex, holistic, and involving a myriad of not highly isolated variables; data that are likely to be gathered at least partly by personalistic observation; and a writing style that is informal, perhaps narrative, possibly with verbatim quotation, illustration, and even allusion and metaphor. Comparisons are implicit rather than explicit. Themes and hypotheses may be important, but they remain subordinate to the understanding of the case. (p. 7)

Stake (1988) also states that "the principal difference between case studies and other research studies is that the focus of attention is the case, not the whole
population of cases... the search is for an understanding of the particular case, in its idiosyncrasy, in its complexity" (p. 256).

Guba and Lincoln (1981) outline the advantages of the case study, as presented by Stake, by stating, "The case study provides 'thick description'... is grounded; it provides an experiential perspective... is holistic and lifelike... simplifies the range of data one is asked to consider... focuses the reader's attention and illuminates meanings... [and] leads, as Stake has suggested, to 'naturalistic generalizations' in contrast to 'scientific generalization'" (pp. 376-377).

Other proponents of the case study have suggested strategies to overcome the concerns and criticism commonly cited against this approach without sacrificing "thick description" and "naturalistic generalization." They suggest procedures that would lead to "disciplined inquiry" as defined earlier. For example Guba and Lincoln (1981) and Firestone and Dawson (1988) have suggested strategies to address concerns in the areas of objectivity and neutrality for qualitative case studies. They also recommend adequate descriptions of the procedures for data analysis and interpretation in the write up of the study for scrutiny by others including subjects of the study and professional peers.

Approaches to the analysis of case study data have been labeled "interpretation" (Tesch, 1990) and "inductive" (Bogdan & Biklen, 1982; Patton, 1990). Tesch (1990) considers traditional case study analysis as "interpretation" because the early researchers who conducted case studies 'interpreted' their
observation in the very basic sense of reflecting on their data until they achieved a better understanding of what they meant" (p. 69).

Bogdan and Biklen (1982) describe the research design and resulting strategy for data analysis for case studies as an inductive process.

The general design of a case study is best represented by a funnel. The start of the study is the wide end: the researchers scout for possible places and people that might be the subject or source of data, find the location they think they want to study, and then cast a net widely trying to judge the feasibility of the site or data source for their purposes . . . . They begin to collect data, reviewing and exploring it, and making decisions about where to go with the study . . . . They may throw aside old ideas and plans and develop new ones . . . In time . . . Their work develops a focus . . . From broad exploratory beginnings they move to more directed data collection and analysis. (p. 99)

As noted earlier, Bogdan and Biklen describe the procedure for inductive data analysis in the following manner. Either during or after data are collected, an organizing system is created from the data, the data are placed within this new organizing system and finally interpreted. For analysis after data collection, they refer to this process as "developing coding categories" (p. 156); followed by "the mechanics of working with data" (p. 162) [a process where the data are organized and sorted]; and finally, interpretation in the "writing stage" (p. 170).

In summary, the traditional case study has dealt with a single case and has utilized interpretation and inductive strategies as approaches to data analysis. Critics of the approach consider the case study "not sufficiently scientific" (Guba & Lincoln, 1982, p. 377) and "a less desirable form of inquiry" (Yin, 1989, p. 21). Proponents of the traditional case study emphasize that it is not a less desirable form of inquiry but an alternative form which stresses thick description and naturalistic generalization.
As noted by Stake (1978), the traditional case study approach is not the only type of case study. He cites two examples, "Case studies can be used to test hypotheses, particularly to examine a single exception that shows the hypothesis to be false. Case studies can be highly statistical; institutional research and vocational counseling often are" (p. 7).

Yin (1989) describes the variations in case study by differentiating between descriptive and explanatory case studies (pp. 16-17), single- and multiple-case studies (p. 24) and case studies using qualitative and/or quantitative evidence (pp. 24-25). Using categories based upon Yin's description of case study strategies, the traditional case study as described earlier would be a descriptive, single-case, qualitative study.

Yin (1989) offers several other clarifications that help simplify an explanation of his approaches to case study data analysis:

First, the case study does not imply the use of a particular type of evidence. Case studies can be done by using either qualitative or quantitative evidence. The evidence may come from fieldwork, archival records, verbal reports, observations, or any combination of these . . . . Nor does the case study imply the use of a particular data collection method. A common misconception is that case studies are solely the result of ethnographies or of participant-observation, yet it should be quickly evident that numerous case studies have been done without using these methods . . . . What the case study does represent is a research strategy, to be likened to an experiment, a history, or a simulation . . . None of these other strategies is linked to a particular type of evidence or method of data collection, either. (1981, pp. 58-59)

What then is a case study from Yin's perspective? He offers the following "technical" definition:

A case study is an empirical inquiry that: investigates a contemporary phenomenon within its real-life context; when the boundaries between
phenomenon and context are not clearly evident; and in which multiple sources of evidence are used. (p. 23)

He also notes that "in the past, multiple-case studies have been considered a different methodology from single case-studies" (p. 52). However from his perspective both remain "within the same methodological framework" (p. 52) with the advantage of the multiple-case designs being that "the evidence from multiple cases is often considered more compelling, and the overall study is therefore regarded as being more robust" (p. 52).

Yin's suggestions for approaches to case study analysis are based on two general strategies. One he labels "relying on theoretical propositions" and the other "developing a case description" (pp. 106-107). The first strategy is a deductive approach as defined earlier, as the analysis would be based on "the theoretical propositions that led to the case study" (p. 106). The "second general analytic strategy is to develop a descriptive framework for organizing the case study" (p. 107). If the "descriptive framework" was developed from the data, the approach would be inductive. If the framework was determined beforehand, the process would be a deductive one. From Yin's perspective the descriptive strategy is "less preferable than the use of theoretical propositions but serves as an alternative when theoretical propositions are absent" (p. 107).

Within Yin's framework of "general analytic strategies" he identifies three "dominant modes of analysis" which are "specific analytic techniques, to be used as part of a general strategy" (p. 109). They include: pattern-matching, described earlier as a deductive approach to analysis; explanation-building, described earlier as an
inductive approach to analysis; and "time-series analysis" which he essentially describes as a form of pattern-matching over time (pp. 109-120). He considers all three as preferably explanatory approaches but notes that "if the case study is descriptive, pattern-matching is still relevant, as long as the predicted pattern of specific variables is defined prior to data collection" (p. 109).

Yin's preferred approach to case studies, using his own description of case study strategies, would be an explanatory study, utilizing multiple-cases, incorporating multiple sources of evidences that would include both qualitative and quantitative data. The preferred approach to analysis would be a deductive process, for example pattern-matching, based upon "the theoretical propositions that led to the study in the first place" (p. 108).

What has lead to the more complicated case study designs as described by Yin? Firestone and Herriott (1984) state that while the strength of the classic case study design is in-depth description in a single setting it provides "a weak basis for generalization to other settings" (p. 63). This has lead to,

the emergence of a new form of qualitative research, one intended to strengthen its ability to generalize while preserving in-depth description. These multisite qualitative studies address the same research question in a number of settings using similar data collection and analysis procedures in each setting. They consciously seek to permit cross-site comparison without necessarily sacrificing within-site understanding. (p. 63)

They found, in their study of multisite qualitative studies, that a major characteristic of this approach to inquiry was what they termed "formalization" (p. 72):

Formalization affects three aspects of the research process: Whereas traditional qualitative research tends to emphasize the discovery of relevant questions and variables while in the field, these multisite studies tended to
emphasize the codification of questions and variables before beginning fieldwork. Whereas traditional qualitative research tends to emphasize unstructured questioning and observation, these multisite studies tended to emphasize the standardization of data collection procedures through the use of semistructured interview and observation protocols. Whereas traditional qualitative research tends to emphasize extended presentation of verbal narrative, these multisite studies tended to emphasize the systematic reduction of verbal narratives to codes and categories. (p. 72)

What are the advantages and limitations of formalized multisite studies?

Firestone and Herriott (1984) suggest:

The strengths of formalization are most apparent for researchers doing etic research. In anthropology, etic research relies on concepts generated from outside the phenomena of interest; the strength of formalization is in clarifying the relationships among such predetermined concepts, although generating new ones is not precluded . . . . However formalized research techniques are not particularly useful for emic research where the objective is to identify and clarify the concepts or meanings of the people being studied. If the researcher is intent on constructing 'thick descriptions' and interpreting cultures, less formalized approaches are likely to be more appropriate. (p. 80)

In summary, case studies when defined as a research strategy (Yin, 1989): can be categorized as descriptive or explanatory; can involve single- or multiple-cases; and can use qualitative and/or quantitative methods. Approaches to data analysis generally involve interpretive or inductive strategies for single-case study designs. Multiple-case study designs can utilize inductive approaches to data analysis, but formalized, deductive designs are also used to facilitate cross-site comparisons (Yin, 1989; Firestone & Herriott, 1984). An example of a multiple-case study as presented by Yin (1989) would be an explanatory study, utilizing multiple sites or cases, incorporating both qualitative and quantitative data, where the preferred approach to analysis would be a deductive process like pattern-matching. In contrast, the traditional or classic
case study, could be described as a descriptive, single-case, qualitative study favoring interpretation or inductive procedures as the approach to analysis. The advantages, as outlined by Firestone and Herriott (1984), of the formalized multiple case study, using a deductive approach to design and analysis, would be "clarifying the relationships among . . . predetermined concepts" (p. 80). The advantages of the traditional single-case study design, as well as multiple case study designs using an inductive approach to design and analysis, would be in "emic research where the objective is to identify and clarify the concepts or meanings of the people being studied" (p. 80).

Goals of Qualitative Inquiry and Analysis

What are the intended outcomes of qualitative inquiry? In this brief overview of approaches to qualitative analysis, four goals have been suggested: presenting the "multiple realities" of the phenomenological paradigm; and as suggested within the framework of the traditional case study, providing "thick description" and a "holistic" perspective that leads to "naturalistic generalizations" [in place of scientific generalizations as suggested by a positivist philosophy].

Guba and Lincoln (1981 & 1989) offer very similar "assumptions" as the basis of qualitative studies that they label "naturalistic" (1981) and "constructivist" (1989). For example they state that the focuses of naturalistic inquiry are "multiple realities . . . complex interactions . . . thick description" (1981, pp. 56-58) but not scientific generalizations (pp. 61-62).

Patton (1990) provides several "themes of qualitative inquiry" which include among others a "holistic perspective . . . detailed thick description . . . capturing
people's personal perspective" (p. 40). Other themes offered by Patton include "inductive analysis . . . unique case orientation . . . [and] design flexibility" (pp. 40-41). He also notes that "ideally, a pure qualitative inquiry strategy includes all the themes and dimensions . . . in practice, however . . . implementing naturalistic inquiry . . . [is] always a matter of degree" (p. 59).

For the purposes of this dissertation, it is proposed that seeking to accomplish the four goals [or maybe more appropriately, adopting the assumptions or themes] as stated: presenting multiple realities, a holistic perspective, thick description and seeking naturalistic generalizations; places this study squarely within the realm of qualitative inquiry.

Why are multiple realities, a holistic perspective, thick description and naturalistic generalizations significant within the qualitative paradigm?

The concern with multiple realities comes in part from the philosophical alignment of qualitative inquiry to phenomenology, which is defined in the context of this dissertation as the belief "that reality is socially constructed through individual or collective definitions of the situation" (Firestone, 1987, p. 16-17). Bogdan and Biklen (1982) state that "all qualitative researchers in some way reflect a phenomenological perspective" (p. 31). As a result a primary goal of qualitative inquiry and analysis is to "describe multiple realities" (p. 47) which generally stresses "the goal of understanding the subjects [of a study] from their own point of view" (p. 32). Denzin (1989) adds another dimension to the concept of multiple reality by making a distinction "between everyday conceptions of reality and scientific conceptions of
reality" (p. 9) He goes on to suggest that description and interpretations be based on both.

House (1990) also suggests that the growing interests in "multiple criteria, multiple perspectives, multiple audiences, multiple interests - pluralists conceptions, reflect the change from consensus to pluralism that has occurred in the larger society" (p. 27). Others, for example Guba and Lincoln (1989), also emphasize that the increased interest in the multiple realities of qualitative inquiry within social science evaluation and research, has come in part from the shortcomings of the positivist paradigm, focusing on a single objective reality (pp. 57-68).

Within this study, the goal of presenting multiple realities will be to "understand the subjects from their own point of view" (Bogdan & Biklen, 1982, p. 32) as well as describing and interpreting a scientific conception of that reality from a theoretical point of view (Denzin, 1989, p. 9).

A holistic perspective in qualitative inquiry according to Patton (1990),

assumes that the whole is understood as a complex system . . . . The holistic approach gathers data on multiple aspects of the setting under study in order to assemble a comprehensive and complete picture of the social dynamic of the particular situation or program. (pp. 49-50)

Yin (1989) states that one of the advantages of the case study approach is that it "allows an investigation to retain the holistic and meaningful characteristics of real-life events" (p. 14). A holistic perspective is also cited as a major characteristic of certain approaches to ethnography (Goetz & LeCompte, 1984; Jacob, 1988; Tesch, 1990).
Diesing (1971) suggests, "the holist believes not only that wholes exist but that his account of them should somehow capture and express this holistic quality." (p. 138). He goes on to state:

By 'holistic quality' is meant not only the manifold interrelations among parts . . . but also some of the unique characteristics, the distinctive qualities and patterns that differentiate this system from others . . . . Holists agree that one should study a whole system rather than just one part of the context, but there are varying conceptions of how whole the system has to be. (pp. 138-141)

One approach to determining which parts of the whole system "express this holistic quality" is presented by Watson-Gegeo and Gegeo (1991). They suggest:

An aspect of culture or behavior must be described and explained in relation to the whole system of which it is a part . . . analysis must account for the behavior and the context in which the behavior occurred. Here, 'context' includes not only the immediate circumstances in which an activity or interaction occurred (micro), but also relevant sociocultural relationships and institutions (macro). Levels of context may be thought of as concentric spheres of influence surrounding the events or behavior on which a study focuses.

Within this study the goal of presenting a holistic perspective will be to express a "holistic quality" (Diesing, 1971, p. 138) through the description and explanation of behavior "in relation to [the relevant aspects] of the whole system of which it is a part" (Watson-Gegeo & Gegeo, 1991, p. 8).

What is thick description? Bogdan and Biklen (1982) use the term thick description in their discussion of ethnography. They refer to Geertz's (1973) use of the term in describing culture as a context which is "thickly described" (Bogdan & Biklen, 1982, p 35).
Guba and Lincoln (1981), referring to evaluation settings, outline thick description in the following manner:

Thick description involves literal description of the entity being evaluated, the circumstances under which it is used, the characteristics of the people involved in it, the nature of the community in which it is located, and the like. Evaluators have always tended to provide such information as a routine part of reporting on evaluations. (p. 119)

Smith (1986) also acknowledges the importance of "good description" (p. 39) in evaluation and implies that other forms of data presentation in addition to narration can aid in description. Miles and Huberman (1984) seem to offer a slightly different version of this suggestion in regards to the use of qualitative "data displays" (p. 21). Although they recommend the use of "data displays" as an alternative to "long narrative accounts full of 'thick description'" (p. 251) they don't discount the use of the two in combination. It can be assumed that they are offering "data displays" as an alternative to "long narrative accounts" (p. 21) not thick description as they earlier state, "Qualitative data . . . are a source of well-grounded, rich descriptions and explanations of processes occurring in local context" (p. 15).

Geertz (1973), Guba and Lincoln (1981) and Denzin (1989) suggest that thick description also involves interpretation. Denzin describes thick description and "thick interpretation" (p. 159) in the following manner:

Thick description has two basic characteristics. First, it attempts to rescue the meanings, actions, and feelings that are present in an interaction experience . . . Second, thick description is interpretive. It captures the meanings persons bring to their experience. It also attempts to record how these interpretations unfold during the interaction. Thick description creates the condition for thick interpretation, which attempts to take the reader to the essential features of the experience that has been thickly described. (p. 159)
Denzin goes on to state, "Many social scientists build thick interpretations based on thin descriptions. Some offer thin interpretations of thick descriptions, and others do thin interpretations of thin descriptions" (p. 160). Needless to say, within approaches to inquiry in the social sciences, he recommends the inclusion of both.

Watson-Gegeo (1991) offers a similar idea in suggesting that thick description should lead to "thick explanation" (p. 2). She states,

Attention to contextual levels and holism as requirements of an adequate ethnographic analysis constitute thick explanation . . . . one can have thick description, and still have thin explanation. Thin explanation is what results from an exclusively micro or macro analysis. Thick explanation means taking into account all relevant, theoretically salient micro and macro contextual influences that stand in a systematic relationship (Diesing 1971:137-141) to the behavior or event(s) one is attempting to explain. (p. 2)

She also suggests:

Glaser and Strauss' (1967) notion of theoretical saturation in category development can be applied to the problem of deciding how many levels need to be included for the explanation to be 'thick.' Here, saturation would mean the point at which no additional levels are found that substantially contribute to the explanation. (p. 3)

Within this study, the goal of presenting thick description will focus on the building of thick description and "thick interpretations" (Denzin, 1989, p. 159).

Where feasible, data displays will be used to thicken description and interpretation and shorten narrative accounts (Miles & Huberman, 1984).

Naturalistic generalization is a term credited to Stake (1978). In his writings on the case study as an appropriate method for social inquiry he introduces this concept in the following manner:
It is widely believed that case studies are useful in the study of human affairs because they are down-to-earth and attention-holding but that they are not a suitable basis for generalization. In this paper, I claim that case studies will often be the preferred method of research because they may be epistemologically in harmony with the reader's experience and thus to that person a natural basis for generalization. (p. 5)

Later he writes that case studies "provide a vicarious cognitive experience . . . [which is] easily integrated into a reader's existing experience" (1988, p. 260).

Although Stake's writings refer specifically to case studies, naturalistic generalization could also be considered applicable to other forms of qualitative inquiry providing narrative description. Lincoln and Guba (1985) suggest that while external validity [scientific generalization] is not applicable to naturalistic [qualitative] studies, the researcher can provide "the thick description necessary to enable someone . . . to reach a conclusion about whether transfer can be contemplated as a possibility" (p. 316).

Miles and Huberman (1984) referring to qualitative data suggest that it is "convincing" (p. 15) which is an idea that is similar to the concept of naturalistic generalization. They state:

The findings from qualitative studies have a quality of 'undeniability' as Smith (1978) has put it. Words, especially when they are organized into incidents or stories, have a concrete, vivid, meaningful flavor that often proves far more convincing to a reader - another researcher, a policy-maker, a practitioner - than pages of numbers. (p. 15)

Even Campbell (1979) alludes to the concept that Stake has described as naturalistic generalization in his writings on the case study in his reference to "common sense knowing" (p. 50). Campbell states:
Too often quantitative social scientists, under the influence of missionaries from logical positivism, presume that in true science, quantitative knowing replaces qualitative, common-sense knowing. The situation is in fact quite different. Rather, science depends upon qualitative, common sense knowing even though at best it goes beyond it. Science in the end contradicts some items of common sense, but it only does so by trusting the great bulk of the rest of common-sense knowledge. (p. 50)

Stake (1988) suggests that both scientific generalization and naturalistic generalization are important ways of knowing. He observes:

In my own writing I sometimes talk about "naturalistic generalization." I think of this "way of knowing" as very important, for researchers and for others. We all, of course, also arrive at understandings . . . through what is commonly called "scientific generalization." It is not terribly important to decide which is more important. There are ample needs for both modes of acquired understanding. (p. 260)

One other way of looking at naturalistic generalization would be to utilize the description of the differences between types of scientific generalizations presented by Yin (1989). Yin differentiated between "analytic generalization" and "statistical generalization" (p. 21). Statistical generalization and external validity are related terms. In this context, a studies findings are statistically generalized to a given population or universe. Analytic generalization is when a study's findings are generalized to theoretical propositions. Naturalistic generalizations could be considered an alternative form of the concept of analytic generalization when described as the generalization of a studies findings to the "common sense [propositions and theories] . . . that make up . . . the great bulk of common sense knowledge" (Campbell, 1979, p. 50).

Within this study, the goal of accomplishing naturalistic generalizations will be pursued through the presentation of multiple perspectives, a holistic quality, and thick
descriptions and interpretations intended "to provide a vicarious cognitive experience . . . [which is] easily integrated into a reader's existing experience" (Stake, 1988, p. 260).

In summary, it is suggested that the goals of qualitative inquiry and analysis include: presenting multiple realities and providing thick descriptions which creates a holistic perspective that leads the reader to naturalistic generalizations. In this study, the development of a methodology for qualitative data analysis based upon the concept of triangulation, is an effort to provide a well defined, systematic means of accomplishing these goals.

Summary—Qualitative Analysis

In this review, several aspects of qualitative data analysis have been covered. First it is noted that qualitative data analysis is one area of qualitative inquiry that is not as well defined as other components of this approach to research and evaluation. This has led several authors to suggest the need for additional conceptual and empirical work focusing on analysis.

Secondly it is proposed that in reviewing information on existing approaches to qualitative data analysis, several common characteristics can be identified. It is suggested within the context of this dissertation, that in general qualitative data analysis consists of segmenting, categorizing and presenting qualitative data. Interpreting the results of this procedure is considered a separate process which follows analysis. It is also noted that although qualitative analysis generally follows
an inductive mode of inquiry, both inductive and deductive approaches are utilized in qualitative studies.

A third point that is presented is support for approaches to qualitative analysis that can be considered disciplined inquiry. These approaches are based on the assumption that more systematic and better described methods of qualitative data analysis will result in findings with greater credibility. Two strategies suggested to help discipline qualitative inquiry are triangulation and feedback from informants and professional peers.

Three general strategies utilized to analyze qualitative data applicable to this study were covered: inductive analysis, deductive analysis and case study analysis. Within each of the three broad categories, specific approaches to data analysis were reviewed.

An inductive approach to analysis is often considered a primary characteristic of qualitative inquiry. In this approach to analysis, categories utilized to code and then organize the data segments are created from the data. The categories can be created either after data collection or as an ongoing part of the data collection process. Two strategies presented as representative of inductive analysis were the constant comparative method developed by Glaser and Strauss (1967) and the explanation-building strategy suggested by Yin (1989).

A deductive approach to analysis is generally associated with quantitative research and evaluation. However, a deductive process is also utilized in qualitative studies when a given conceptual framework such as a set of evaluation questions or a
specific theoretical perspective guide data collection and analysis. In deductive analysis the categories utilized to code and then organize the data are based on a conceptual framework developed before data collection begins. Two strategies presented as representative of deductive analysis were content analysis and the pattern matching approach based on the ideas of Campbell (1979) and Yin (1989).

The traditional case study dealing with a single case has generally utilized interpretation and inductive strategies as approaches to data analysis. Multiple-case study designs also utilize inductive approaches to data analysis, but formalized, deductive designs are used as well to facilitate cross-site comparisons. The advantages of the formalized multiple case study, using a deductive approach to design and analysis, would be "clarifying the relationships among . . . predetermined concepts" (Firestone & Herriott, 1984, p. 80). The advantages of the traditional single-case study design, as well as multiple case study designs using an inductive approach to design and analysis, would be in "emic research where the objective is to identify and clarify the concepts or meanings of the people being studied" (p. 80).

A final aspect of qualitative data analysis that it is presented in this review is the intended outcomes or goals of this process. Four goals or themes are identified. They include (a) presenting multiple realities, (b) providing thick description and (c) creating a holistic perspective, which together can then (d) provide a basis for naturalistic generalization. Within this study, the goal of presenting multiple realities will be to "understand the subjects from their own point of view" (Bogdan & Biklen, 1982, p. 32) as well as describing and interpreting a "scientific conception" of their
reality from a theoretical point of view (Denzin, 1989, p. 9). The goal of presenting thick description will focus on the building of thick description and "thick interpretations" (Denzin, 1989, p. 159). Where feasible, data displays will be used to thicken descriptions and interpretations and shorten narrative accounts (Miles & Huberman, 1984, p. 21). The goal of presenting a holistic perspective will be to express a "holistic quality" (Diesing, 1971, p. 138) through the description and explanation of behavior "in relation to [the relevant aspects] of the whole system of which it is a part" (Watson-Gegeo & Gegeo, 1991, p. 8). The goal of providing a basis for naturalistic generalizations will be pursued through the presentation of multiple perspectives, a holistic quality, and thick descriptions and interpretations which will "provide a vicarious cognitive experience" (Stake, 1988, p. 260) which leads to "understanding, extension of experience, and increase in conviction in that which is known" (Stake, 1978, p. 6).

**Triangulation**

Triangulation is "a time-honored methodological strategy" (Greene & McClintock, 1985, p. 524). It is also generally agreed "that research and evaluation will be improved by such a practice" (Mathison, 1988, p. 13). However as noted by Greene, Caracelli and Graham (1989) there seems to be some confusion as to the meaning of the concept when actually applied in research settings. It is proposed in the following review that the confusion is caused in part by two different perspectives on the term triangulation commonly found in the literature. One has as a focus "convergence;" is based on the ideas of Campbell and Fiske (1959); and is what
Greene et al. (1989) call the "classic" (p. 258) version of triangulation. The second perspective on the term triangulation has as a focus "complementarity" (Greene & McClintock, 1985, p. 524); is based on the ideas of Denzin (1970) and Jick (1979); and is the approach to triangulation that more closely aligns with the goals and strategies of qualitative inquiry.

**Perspective One—Convergence**

Greene et al. (1989) define "classic" triangulation in the following manner:

Triangulation refers to the designed use of multiple methods, with offsetting or counteracting biases, in investigations of the same phenomenon in order to strengthen the validity of inquiry results. The core premise of triangulation as a design strategy is that all methods have inherent biases and limitations, so use of only one method to assess a given phenomenon will inevitably yield biased and limited results. However, when two or more methods that have offsetting biases are used to assess a given phenomenon, and the results of these methods converge or corroborate one another, then the validity of inquiry findings is enhanced. (p. 256)

They go on to add:

As noted by Greene and McClintock (1985), this triangulation argument requires that the two or more methods be intentionally used to assess the same conceptual phenomenon, be therefore implemented simultaneously, and, to preserve their counteracting biases, also be implemented independently. (p. 256)

Miles and Huberman (1984) offer a simplified definition by stating, "Stripped to its basics, triangulation is supposed to support a finding by showing that independent measures of it agree with it, or at least, don't contradict it" (p. 234).

They suggest triangulation can be used as a method of verifying conclusions in qualitative inquiry. However, they also note it is "a well known tactic, but tends to be preached more often than practiced" (1988, p. 239).
Others who also recommend triangulation for "verification" include: Lincoln and Guba (1985); Goetz and LeCompte (1984), Smith (1986), and Firestone and Dawson (1988). Lincoln and Guba (1985) state that triangulation helps improve the "credibility" (p. 301) of a study, using credibility as a term appropriate to represent the concept of internal validity within their approach to inquiry. Goetz and LeCompte (1984) suggest that within ethnography:

> Just as a surveyor locates points on a map by triangulating on several sights, so an ethnographer pinpoints the accuracy of conclusions drawn by triangulating with several sources of data [versus methods of data collection]. Triangulation prevents the investigator from accepting too readily the validity of initial impressions . . . [and] assists in correcting biases that occur when the ethnographer is the only observer of the phenomenon under investigation. (p. 11)

Smith (1986) notes that,

> Qualitative studies provide more natural and ecologically valid evidence, yet suffer perhaps from observer effects and identification of the researcher with the subjects through extensive personal contact . . . . triangulation across many forms of measurement establishes that some phenomenon exists independently of a researcher's effort to measure it. (p. 42)

Firestone and Dawson (1988) recommend triangulation as one of the procedures that helps qualitative researchers conduct disciplined inquiry. They present triangulation as "the search for convergence across methodologies . . . [noting that] where several methodologies lead to the same conclusion, the researcher's confidence in the conclusion is increased substantially" (p. 213).

A second aspect of what will be called "convergent" triangulation within the context of this dissertation should be noted. In addition to its use in qualitative inquiry, it is often suggested as an appropriate strategy when quantitative and
Qualitative methods are used together in what is commonly referred to as "mixed-method" designs. Although there are authors, for example, Guba and Lincoln (1989), who would contend that the quantitative and qualitative methods are "incompatible because they are based on paradigms that make different assumptions about the world and what constitutes valid research" (Firestone, 1987, p. 16), there are others who disagree. From their perspective, convergent triangulation is seen as an appropriate "conceptual framework" (Greene et al., 1989, p. 255) for mixed-method designs.

Historically, Mathison (1988) notes that the concept of triangulation was developed by Campbell and Fiske (1959) and Webb and Campbell (1966), and then, further refined by Denzin (1978). Webb and Campbell (1966) use the term triangulation in their writings on the use of nonreactive measures in the social sciences in the following manner:

Once a proposition has been confirmed by two or more independent measurements processes, the uncertainty of its interpretation is greatly reduced. The most persuasive evidence comes through a triangulation of measurement processes. If a proposition can survive the onslaught of a series of imperfect measures, with all their irrelevant error, confidence should be placed in it. (p. 3)

Denzin's contribution to convergent triangulation was the suggestion that there were three other forms of triangulation in addition to multiple methods: data triangulation, investigator triangulation and theory triangulation. Denzin (1989) writes:

It is conventionally assumed that triangulation is the use of multiple methods . . . . but it is only one form of the strategy. It is convenient to conceive of triangulation as involving varieties of data, investigators, and theories, as well as methodologies. (236-237)
The idea that the findings from multiple investigators and data sources, like methods could converge or corroborate one another was readily accepted by those viewing triangulation as a process focusing only on convergence. However, theory triangulation was a little harder to accept when considering it from this perspective.

For example, Lincoln and Guba (1985) state:

> The use of multiple theories for the sake of triangulation is a formulation that the naturalist cannot accept. What can it mean that certain facts can be consistent with two or more theories? In what sense can it be the case that facts can be given more weight if they are consistent with multiple theories? . . . . The use of multiple theories as a triangulation technique seems to be both epistemologically unsound and empirically empty. (p. 307)

Mathison (1988), also concerned with the feasibility of theory triangulation, concludes:

> In actual fact, Denzin only seriously suggests three types of triangulation since the notion of theoretical triangulation is problematic at best, and likely impossible in reality. Even Denzin questions the plausibility of such a notion in the notes at the end of the chapter. (p. 14)

Denzin's notes, which Mathison then quotes, state:

> My use of theoretical triangulation must in no way be construed as a defense of eclecticism. Indeed, sociologists committed to a given perspective will probably not employ theoretical triangulation. The great value of this strategy, as I see it, however, is its assurance that no study will be conducted in the absence of some theoretical perspective. (Denzin, 1978, p. 307)

Later in the 1989 edition of his text, Denzin responds to Lincoln and Guba's critique of his strategy for theory triangulation in the following manner:

> They [Lincoln and Guba] base their harsh conclusions on a narrow reading of this strategy. As previously outlined, theoretical triangulation simply asks the researcher to be aware of the multiple ways in which the
phenomenon may be interpreted. It does not demand, nor does it ask, that facts be consistent with two or more theories. (p. 246)

Other criticisms of convergent triangulation have been based on the perspective that this strategy has as a focus the convergence of the findings of multiple methods upon a single reality [See for example: Fielding & Fielding, 1986; Guba & Lincoln, 1989; Silverman, 1985]. This concern has led Guba and Lincoln (1989) to state that the strategy is inappropriate for qualitative inquiry. They write:

The reader who is familiar with our earlier work will notice that we have avoided a discussion of triangulation as a credibility check. In part, we have done so because triangulation itself carries too positivist an implication, to wit, that there exists unchanging phenomena so that triangulation can logically be a check. (p. 240)

In summary, convergent triangulation is generally considered the use of multiple methods with a focus on the convergence or corroboration of findings. This perspective on triangulation suggests that the methods should be "implemented simultaneously and, to preserve their counteracting biases, also be implemented independently" (Greene et al., 1989, p. 256). Critics of convergent triangulation, from a phenomenological perspective, suggest that it "carries too positivist an implication" (Guba & Lincoln, 1989, p. 240) as this approach has as a focus the convergence of the findings of multiple methods upon a single reality. Proponents emphasize the use of triangulation to verify conclusions in qualitative and mixed-method designs, although Miles and Huberman (1988) conclude that this seems to be a "tactic . . . [that] tends to be preached more often than practiced" (p. 239).
Perspective Two—Complementarity

Greene and McClintock (1985) suggest two different approaches to triangulation in their statement regarding the goal of triangulating multiple methods when they state:

The goal of triangulating methods is to strengthen the validity of overall findings through congruence and/or complementarity of the results from each method. Congruence here means similarity, consistency, or convergence of results, whereas complementarity refers to one set of results enriching, expanding upon, clarifying, or illustrating the other. (p. 524)

Greene et al. (1989) later use this differentiation to develop a "conceptual framework for mixed-method evaluation designs" (p. 255). Within this framework they define triangulation as "classic" (p. 258) triangulation focusing on convergence as one category. They then expand upon the second goal of triangulation as defined earlier, to create four new categories of mixed method designs which they term "complementarity, development, initiation and expansion" (p. 259). Although this new conceptual framework helps them categorize approaches to mixed-method designs, it does not take into account the second approach to triangulation as earlier described.

It is proposed here that the second perspective on triangulation as suggested by Greene and McClintock (1985): one, is also readily found in the social sciences literature in the writings of Denzin (1970, 1978, 1989), Jick (1979), Patton (1980, 1990), and others; and two, is more closely aligned with the goals of qualitative inquiry than "convergent" triangulation. Within the context of this dissertation this second perspective on triangulation will be called "complementary" triangulation.
Denzin (1978) in *The Research Act: A Theoretical Introduction to Sociological Methods* offers a different goal for triangulation than the convergence of findings of multiple methods as suggested by Webb and Campbell. Denzin (1978) states:

No single method ever adequately solves the problem of rival casual factors . . . . Following Webb et al. (1966), I conclude that no single method will ever permit an investigator to develop causal propositions free of rival interpretations . . . . Because each method reveals different aspects of empirical reality, multiple methods of observations must be employed. This is termed triangulation. (p. 28)

Denzin (1989) more clearly articulates this position when he uses a quotation from Fielding and Fielding (1986) as the introduction to his chapter on triangulation in the third edition of his text. This quotation reads:

> We should combine theories and methods carefully and purposefully with the intention of adding breadth or depth to our analysis, but not for the purpose of pursuing "objective" truth. [Fielding and Fielding, 1986, p. 33] (in Denzin, 1989, p. 234)

The strategy Denzin (1989) then offers to accomplish this goal is "multiple triangulation," which he defines as the use of a variety of "data, investigators, and theories, as well as methodologies" (p. 237). It should be noted that in Denzin's discussions of the four forms of the strategy he also refers to the convergence of findings through triangulation. However this seems to be a secondary goal within his overall framework of multiple triangulation. In the summary to his chapter on triangulation Denzin states:

The shifting, conflictual, emergent, constructed nature of the social world, coupled with the unique problems that arise from theories, methods, and observers, make the doing of sociology fundamentally difficult. I have suggested that the resolutions to this difficulty are twofold. First, sociologists must recognize these basic features of the research act. Second, multiple strategies of triangulation must become the preferred line
of action . . . By combining multiple observers, theories, methods, and empirical materials, sociologists can hope to [one,] overcome the intrinsic bias and problems that come from single-method, single-observer, single-theory studies . . . [and two,] broaden, thicken, and deepen the interpretive base of any study. (pp. 246-247)

Patton (1990) in his writings on qualitative evaluation and research methods states, "One important way to strengthen a study design is through triangulation, or the combination of methodologies in the study of the same phenomena or program." (p. 187). He then presents a brief overview of the four types of triangulation as presented by Denzin in the following manner:

Denzin (1978) has identified four basic types of triangulation: (1) data triangulation - the use of a variety of data sources in a study; (2) investigator triangulation - the use of a several different researchers or evaluators; (3) theory triangulation - the use of multiple perspectives to interpret a single set of data; and (4) methodological triangulation - the use of multiple methods to study a single problem or program. (Patton, 1990, p. 187)

Patton (1990), notes that in triangulating data sources and methods within qualitative studies, one can "seldom" expect the findings to converge. He writes:

As with triangulation of methods, triangulation of data sources within qualitative methods will seldom lead to a single, totally consistent picture. It is best not to expect everything to turn out the same. The point is to study and understand when and why there are differences. . . . At the same time, consistency [versus convergence] in overall patterns of data from different sources and reasonable explanations for differences in data from divergent sources contributes significantly to the overall credibility of findings. (p. 468)

Patton (1990) suggests that triangulation is an appropriate strategy for qualitative studies "by combining different qualitative methods, mixing purposeful samples, and including multiple perspectives" (p. 188). His suggestions for providing multiple perspectives through triangulation include: the use of multiple observers,
multiple analysts and "using different theoretical perspectives to look at the same data" (p. 470). He suggests using the perspectives of stakeholders in theory triangulation in addition to formal theories. He states:

A concrete version of theory triangulation for evaluation is to examine the data from the perspective of various stakeholder positions with different theories of action about a program. It is common, for divergent stakeholders to disagree about program purposes, goals, and means of attaining goals. These differences represent different theories of action that cast findings in a different light. (p. 470)

Jick (1979) states that Denzin, "broadly" defines triangulation as "the combination of methodologies in the study of the same phenomenon" (p. 135-136) whereas Campbell and Fiske were concerned with "convergence or agreement between to two methods" (p. 136). He notes that Campbell's form of triangulation, "is labeled by Denzin as the 'between methods' type and represents the most popular use of triangulation" (p. 136). He then goes on to offer his own "continuum of triangulation designs" (p. 137) based upon his own research. The four forms of triangulation he includes on the continuum are "Scaling .... Reliability .... Convergent Validation .... Holistic Description" (p. 137). He describes the first three forms in the following manner:

Blending and integrating a variety of data and methods, as triangulation demands, may be seen on a continuum that ranges from simple to complex designs. Scaling that is, the quantification of qualitative measures, would be at the simple end .... A somewhat more sophisticated triangulation design ... would be the "within-methods" strategy for testing reliability .... Next in the continuum is the conventional form, the "between methods" approach designed for convergent validation .... [which] is currently the archetype of triangulation strategies. (p. 137)
He then goes on to define the fourth form on the continuum, "Holistic Description" which he considers the most complex of the four designs:

Triangulation, however, can be something other than scaling, reliability and convergent validation. It can also capture a more complete, holistic, and contextual portrayal of the unit(s) under study . . . . It is here that qualitative methods, in particular, can play an especially prominent role by eliciting data and suggesting conclusions to which other methods would be blind. Elements of the context are illuminated. In this sense, triangulation may be used not only to examine the same phenomenon from multiple perspectives but also to enrich our understanding by allowing for new or deeper dimensions to emerge. (p. 138)

In his own research, Jick (1979) found "the various methods together produced largely consistent and convergent results . . . . [however] there was also some surprises and discrepancies in the multimethod results which led to unexpected findings" (p. 143). This led him to conclude:

Triangulation provides researchers with several important opportunities. First it allows researcher to be more confident of their results [where there is convergence] . . . . It can stimulate the creation of inventive methods . . . . divergent results from multimethods can lead to an enriched explanation of the research problem . . . . The uses of multimethods can also lead to a synthesis or integration of theories . . . . Finally, triangulation may also serve as the critical test, by virtue of its comprehensiveness, for competing theories. (p. 145)

Jick (1979) refers often to the ideas of Diesing (1971) in his article on triangulation. Diesing in Patterns of Discovery in the Social Sciences suggests an approach to inquiry that is very similar to the approach to triangulation presented by both Jick and Denzin. Diesing (1971) writes:

The holist uses evidence to build up a many-sided, complex picture of his subject matter. He accomplishes this by using several kinds of evidence, each providing a partial or limited description that supplements other partial descriptions. Similarly, complex studies will often employ two or
more investigators, each providing a partial perspective that supplements the perspective of the other investigators. (p. 147)

Others who have suggested approaches to inquiry similar to complementary triangulation, as defined within this study, include: Greene and McClintock (1985); Mark and Shotland (1987); Mathison (1988) and Greene et al. (1989). It should be noted that in these references, triangulation is often discussed within the context of mixed-method designs as well as studies using entirely qualitative designs. The position taken in this study is that complementary triangulation is applicable to both.

Greene and McClintock (1985), citing both Campbell and Denzin as references, state that "broadly defined, triangulation is the multiple employment of sources of data, observers, methods or theories . . . in the investigations of the same phenomenon" (p. 524). As noted earlier, they then propose that the goal of triangulation is to "strengthen the validity of the overall findings through congruence and/or complementarity of the results from each method" (p. 524). Congruence they define as the convergence of results and complementarity as "one set of results enriching, expanding upon, clarifying, or illustrating the other" (p. 524). Greene and McClintock (1985) then used this perspective on triangulation as a conceptual framework to review "a two-part evaluation of program development processes in an educational organization" (p. 524). "The independent, concurrent, mixed-method design" (p. 528) utilized in the study consisted of a mailed "questionnaire administered to a statewide sample and on-site, open ended interviews conducted with purposely selected state and local staff" (pp. 527-528). The "triangulation analysis . . . [was] conducted on [the] separately written reports, not on the raw data" (p. 530).
What did they find? In their summary of major findings they state:

Despite this convergence of descriptive results, the major findings of the two reports bear little resemblance to one another either in substance or form . . . . Substantively, the questionnaire conclusions are prescriptive, whereas the interview summary themes remain descriptive . . . . In short, the summary findings of each component are highly consistent with the purpose, assumptions, and characteristics of the differing methodologies used . . . . [However] what emerges from the results of the two components is a set of recommendations for change that has structure, substance, and strength . . . . [as] the results of one method (the interview in this case) serve primarily to complement, enrich, and thereby strengthen the implications of the other. (p. 536-541)

This led them to conclude that triangulation efforts can be "successful, in terms of congruence and complementarity of findings . . . at the levels of specific descriptive findings and discrete recommendations for change" (p. 541).

Mark and Shotland (1987) in "Alternative Models for the Use of Multiple Methods" suggest that in addition to the "triangulation model . . . . with its emphasis on convergence" (p. 96), other approaches to multiple methods are available. They then describe two other general approaches which they call the "bracketing model" (p. 96) and the "complementary purposes model" (p. 98).

Mark and Shotland describe the bracketing model in the following manner:

According to the bracketing model, it may be unreasonable to expect that method bias exactly averages out; thus, triangulating on a single answer may be misleading. The bracketing model instead suggests that the results of different methods, each with their associated shortcomings, be considered as alternative estimates of the correct answer. That is, according to the bracketing model, the value of multiple methods is not on converging on a single answer, but in providing a range of estimates that is likely to include the right answer. (p. 97)

The complementary purposes model is defined by Mark and Shotland (1987) as the use of multiple methods where "each method . . . [carries] out a different but
complementary function" (p. 98). They then suggest that there are four variations of this approach:

One variation focuses on the use of different methods for "alternative tasks". Another instance of the complementarity purposes model might be described as "enhancing interpretability" [which they credit in part to Greene and McClintock (1985)]. In another variation on the complementary purposes model . . . a given method is selected as the primary research technique, but a second method is used to "assess the plausibility of threats" to the validity of the primary research technique . . . . Yet another form of the complementary purposes model is the use of multiple methods to investigate alternative "levels of analysis". (pp. 98-99)

In their conclusions Mark and Shotland (1987) encourage the use of multiple methods and suggest a "move away from a primary focus on [convergent] triangulation and toward a focus on bracketing and on the many complementary purposes that multiple methods can serve" (p. 99).

In an article entitled "Why Triangulate?" Mathison (1988) defines triangulation simply as the use of "multiple methods, data sources, and researchers to enhance the validity of research findings" (p. 13). She then differentiates between two approaches to the strategy. One approach is based upon the assumptions that through the use of multiple methods "bias inherit in any particular data source, investigator, and particularly method will be canceled out . . . . [and] the result will be convergence upon the truth about some social phenomenon" (p. 14). The second approach, which she only briefly mentions, is the multiple triangulation strategy of Denzin. As she notes, "Denzin (1978) . . . . suggests that different methods produce different understandings of social phenomenon . . . . [which] certainly does not justify the assumption that these differences constitute bias which will be canceled out in an
Mathison (1987) found through the use of a triangulation strategy in an evaluative study, that the findings from multiple methods fell into three categories: convergent, inconsistent, and contradictory. This led her to an "alternative conception of triangulation" (p. 15) and to conclude:

In practice, triangulation as a strategy provides a rich and complex picture of some social phenomenon being studied, but rarely does it provide a clear path to a singular view of what is the case. I suggest that triangulation as a strategy provides evidence for the researcher to make sense of some social phenomenon . . . . [but] because of the predominance of the assumption that triangulation will result in a single valid proposition we look for the convergence of evidence and miss what I see as the greater value in triangulating. (p. 15)

In an effort to develop a conceptual framework for mixed-method evaluation designs, Greene et al. (1989) move away from a definition of triangulation which is synonymous with the term multiple methods to one that limits the term to convergent triangulation. They then create four new categories for their conceptual framework to encompass what Greene and McClintock (1985) had earlier described as triangulation with a focus on "complementarity" (p. 524). Strongly influenced by Mark and Shotland (1987), Greene et al. (1989) arrive at five terms for the conceptual framework representing the "purposes" (p. 259) for mixed-method evaluation designs: triangulation [focused on convergence], complementarity, development, initiation and expansion. They describe the purpose for each category in the following manner:
Triangulation seeks convergence, corroboration, correspondence of results from the different methods.

Complementarity seeks elaboration, enhancement, illustration, clarification of the results . . . .

Development seeks to use the results from one method to help develop or inform the other . . . .

Initiation seeks the discovery of paradox and contradiction, new perspectives or frameworks . . . .

Expansion seeks to extend the breadth and range of inquiry by using different methods for different inquiry components. (p. 259)

Using this conceptual framework to review 57 mixed-method evaluations reported from 1980 to 1988, Greene et al., categorized 3 as triangulation, 18 as complementarity, 7 as development, 2 as initiation, and 27 as expansion. It could be suggested that if they used the categories for triangulation implied earlier by Greene and McClintock (1985), they would have arrived at 3 examples of convergent triangulation and at least 45 examples of complementary triangulation where complementarity "refers to one set of results expanding upon, clarifying, or illustrating the other" (p. 524).

In a review for this dissertation, of four additional studies reporting the utilization of triangulation after 1988, it was found that one study had as a focus the convergence of findings, two focused on complementary findings, and one sought convergence but found explanations.

Owens, Steinhoff, and Rosenbaum (1989) who focused on the convergence of the findings of multiple methods through "post-hoc triangulation" (p. 26) concluded, "It is clear from the limited response that we got in this study that post-hoc
triangulation is perhaps not the strongest strategy [when seeking the confirmation of previously-reported analysis]" (p. 26). However, they also state, "The need to re-enter the two schools also offered a serendipitous opportunity to conduct a naturalistic triangulation as well. We found the encounter in each of the two schools remarkably as Rosenbaum's [ethnographic] research had described" (p. 19).

Dillion (1989), referring to Denzin, focused on what would be considered complementary triangulation in an ethnographic study where "field notes and interview data were triangulated with secondary data to generate a description . . . . and a partial theory" (p. 227). Neenan and Bowen (1991) utilized a "multimethod, triangulated research design" (p. 219) in an evaluation setting where "different yet complementary methods . . . [were used to] provide richer insights into program inputs, process, outcomes, and impacts" (p. 231).

Lee and Shute (1991) in a "naturalistic evaluation" (p. 254) sought "checks and confirmations offered by triangular methodology" (p. 260). Although seeking convergence of the findings, they found the results from one method provided explanations for the findings of another. They concluded:

Triangulating, or checking, the data was particularly relevant in this study. If only the views of the beneficiaries were retained, the picture would have been very one-sided. The views from the other informants often provided explanations for behavior or completed a story. (p. 264)

The four studies as a group, using the categories of convergent and complementary triangulation, could be described as two examples of researchers attempting convergent triangulation (Owens et al., 1989; Lee & Shute, 1991) and two examples of the use of complementary triangulation (Dillion, 1989; Neenan & Bowen,
It also seems worth noting that in all four studies, whether the goal was convergence or complementarity, the utilization of multiple methods produced complementary results.

In summary, the complementary perspective on triangulation as presented by Denzin (1970, 1978, 1989), Jick (1979), Patton (1980, 1990) and others, suggests: "multiple triangulation" (Denzin, 1978, p. 234) which includes in addition to multiple methods, multiple sources of data, multiple investigators, and multiple perspectives or theories; a focus on "one set of results enriching, expanding upon, clarifying, or illustrating the other" (Greene & McClintock, 1985, p. 524); and terms such as "complementarity" (Greene & McClintock, 1985, p. 524) and "holistic description" (Jick, 1979, p. 137). This perspective on triangulation stands in contrast to convergent triangulation, which based on the work of Campbell suggests: multiple methods; a focus on "similarity, consistency, or convergence of results" (Greene & McClintock, 1985, p. 524); and terms such as "congruence" (Greene & McClintock, 1985, p. 524) and "internal validity" (Lincoln & Guba, 1985, p. 296).

Earlier in this section on triangulation, it was suggested that complementary triangulation is more closely aligned to the goals of qualitative inquiry than convergent triangulation. Convergent triangulation, with a focus on the results of multiple methods converging, does little to support the goals of qualitative analysis when they are viewed as the presentation of multiple realities, thick description, and a holistic perspective that leads to naturalistic generalizations. In contrast complementary triangulation, through multiple methods, observers, theories and sources of data can
provide: "multiple perspectives" (Patton, 1990, p. 470); findings which enrich, expand upon, clarify and or illustrate other results (Greene & McClintock, 1985, p. 524); and "holistic description" (Jick, 1979, p. 137) which can then lead to "in-depth understanding" (Denzin, 1989, p. 246) and evidence that will "make sense" of some complex social phenomenon (Mathison, 1988, p. 15).

**Summary—Triangulation**

In presenting a summary of the concept of triangulation several points can be made. First, even though triangulation is referred to often in the social sciences, there seems to be some confusion as to the meaning of the concept when actually applied in research settings. It has been proposed in this review that the confusion is caused in part by two different perspectives on the term triangulation commonly found in the literature. Both perspectives refer to the use of multiple methods. However, one, based on the writings of Campbell, has as a focus the convergence of findings and the other, based on the writings of Denzin, seeks what Greene and McClintock (1985) called "complementarity of the results" (p. 524). Convergent triangulation uses multiple methods for confirmation. Complementary triangulation uses multiple methods, observers, data sources and theories. The focus of complementary triangulation is to have one set of results enrich, expand upon, clarify or illustrate the others. In this approach, one of the outcomes may be convergence. However, as suggested by Mathison (1988) results which are inconsistent or contradictory can often be of more value than those that converge when the goal of the strategy is to provide "a rich and complex picture of some social phenomenon" (p. 15).
A second point that was proposed was the alignment of complementary triangulation with the goals, as defined in the context of this paper, of qualitative inquiry. It was suggested that the presenting of multiple realities, thick description, holistic perspectives and naturalistic generalizations aligns well with an approach to triangulation using multiple methods, data sources, observers and theories with a focus on complementary results.

Another conclusion that can be drawn, as illustrated by the works of Jick (1979), Mathison (1988) and Greene et al. (1989), is that complementary triangulation as defined within this dissertation is often found in actual research settings. Efforts to use triangulation, even when seeking convergence, often produce results where the findings from one method enrich, expand upon, clarify and/or illustrate the others.

A final point that helps clarify some of the confusion caused by the different perspectives on triangulation is a reexamination of the metaphors associated with the term. As noted by Mathison (1988) in navigation and the military triangulation is the use of "multiple reference points to determine the location of yet another point, usually a place or an object" (p. 15). This metaphor is used often in discussions of convergent triangulation. However this is only one definition of the term. Another definition taken from surveying is "the laying out and accurate measurement of a network of triangles" (Funk & Wagnalls, 1963, p. 1428) where triangulation refers to a series of triangles used to measure area. It seems to be an appropriate conclusion to this review of the term triangulation to suggest that "a network of triangles" works well metaphorically to describe complementary triangulation.
Extending the Concept of Triangulation

Although qualitative methods have become prominent in both educational research and evaluation, strategies and techniques for qualitative data analysis have not been as well defined as other aspects of this approach to inquiry. This study addresses this concern through the development of a strategy for qualitative data analysis. Within this dissertation, it is proposed that Denzin's (1978) concept of theory triangulation can serve as a useful framework for the development of an approach to qualitative analysis.

Theory triangulation is one component of the approach to triangulation presented by Denzin (1989) which he refers to as "multiple triangulation" (p. 237). This approach suggests the use of multiple methods, multiple sources of data, multiple observers and multiple perspectives or theories in a single study. Within the context of this dissertation this approach to triangulation is being called "complementary" triangulation.

The goal of complementary triangulation is to have one set of results enrich, expand upon, clarify and/or illustrate the others. This approach to triangulation stands in contrast to "convergent" triangulation which is being defined within this study as the use of multiple methods with a focus on one set of results confirming or corroborating the others. Complementary or multiple triangulation can be envisioned as a network of triangles where multiple methods, observers, sources of data and theories create a holistic perspective encompassing the multiple realities of those
involved in the study. Convergent triangulation can be viewed as a single triangle consisting of two or more methods focusing on a single point of view.

The concept of multiple triangulation was introduced by Denzin (1970) but as noted by Jick (1979), Denzin failed "to indicate how this prescribed triangulation is actually performed and accomplished" (p. 135). In actual application it generally seems that triangulation as a strategy is applied to data collection. It is not hard to conceptualize data being collected through multiple methods, multiple observers and multiple sources. But since multiple triangulation also calls for the use of multiple theories or perspective, the question becomes, can data be collected that is applicable to multiple theories? As noted by Mathison (1988) and Lincoln and Guba (1985), the idea of theory triangulation that focuses on data collection does not align well with the approach to triangulation emphasizing the convergence of findings on a single perspective or theory. However, in the context of complementary triangulation, theory triangulation can be applied to data collection when more than one theory is used to develop research questions or conceptual frameworks that guide initial data collection. It is also proposed within this study, that theory triangulation is not only a viable means of organizing data collection, but it is a concept that can be constructively extended to data analysis as well.

Data analysis based upon theory triangulation would involve the analysis of data utilizing two or more perspectives or theories. For example, the data could be first analyzed within the context of theory A, followed by an analysis based upon theory B and finally an analysis based upon perspective C. This approach to analysis,
using the concept presented in the terms "thick description . . . [and] thick interpretation" (Denzin, 1989, p. 159), could be considered thick analysis. Thick description would be created by data collected through multiple methods, data sources, observers and theories. Thick analysis would be accomplished by the utilization of multiple theories to analyze the data. As illustrated in Figure 1, this creates a process for complementary triangulation involving a network of triangles where thick description is followed by thick analysis and interpretation. The outcome of this approach would be interpretations and conclusions which reflect a holistic perspective encompassing the multiple realities of the various individuals and groups involved in the study.

![Diagram of Complementary Triangulation](image)

**Figure 1.** Complementary triangulation: a conceptual framework.
Data analysis based upon theory triangulation is an idea suggested by Denzin (1970, 1978, 1989) and Patton (1980, 1990). Building upon Denzin's and Patton's work this strategy is presented as a systematic approach to the analysis of qualitative data.

The theories through which the data set would be analyzed would ideally include the theories or perspectives of the various "stakeholders" (Patton, 1990, p. 470) in the setting being studied, as well as applicable formal theories. The theories used for analysis could also be selected to reflect the relevant aspects of the "whole system" (Watson-Gegeo & Gegeo, 1991, p. 8) of which a particular setting is a part. For example, a single data set on an educational program initiated in a school could be analyzed from the perspective of the formal educational theory on which it was based, the perspective of the approach to school improvement supported by the school board, and finally, the perspective of the teachers involved in the program in the school. A second example would be a data base on a state funded program analyzed from the perspective of a relevant social-political theory, the perspective of traditional cultural values applicable to the setting, the perspective of the program service providers and the perspective of the recipients of services. The goal of this approach would be to systematically build a basis for thick interpretation through data analysis by the creation of a holistic perspective that reflects the multiple realities or perspectives impacting a particular setting or group.

What would be the specific procedures in this approach to the analysis of qualitative data? The procedure for each theory or perspective would be to segment,
categorize, and present the data within the context of that theory. This process would follow either a deductive or inductive mode of inquiry as appropriate. A deductive process would be used when a specific theoretical perspective was identified as applicable to the study prior to data analysis. In this situation the categories used to organize or code the data would be based on a conceptual framework developed from a specific theory. A deductive strategy applicable to this approach to analysis of qualitative data based on an existing theory would be the pattern matching approach suggested by Campbell (1979) and Yin (1989). An inductive process would be used when the categories for coding and organizing the data are created from the data. The categories could be created either after data collection or as an ongoing part of the data collection process. An inductive approach would be applicable to an analysis of the data from the perspectives of the people being studied. Approaches to analysis that could be used for inductive analysis would be the constant comparative method of Glaser and Strauss (1967) and the explanation-building strategy suggested by Yin (1989).

Once the data for each theory or perspective were segmented and categorized the results would then be presented through narrative text and/or data displays. After the presentation of analyzed data for each theory or perspective, interpretation and the drawing of conclusions would follow.

An example of the steps involved in an analysis of qualitative data based on theory triangulation is illustrated in Figure 2. Using the example given earlier, theory one would represent the formal theory on which a newly initiated educational program
is based, theory two would represent the policies for school improvement supported by the school board and theory three would represent the perspective of the teachers involved in the program.

<table>
<thead>
<tr>
<th>Theory One</th>
<th>Theory Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program perspective</td>
<td>alternative perspective</td>
</tr>
<tr>
<td>deductive analysis</td>
<td>deductive analysis</td>
</tr>
<tr>
<td>pattern matching</td>
<td>pattern matching</td>
</tr>
</tbody>
</table>

Process: (1) Analyze data based on theory one, (2) Analyze data based on theory two, (3) Analyze data based on theory three.

Figure 2. An example of data analysis based upon theory triangulation.
Chapter 3

METHODS

The following chapter outlines the methods used for data collection and data analysis in the original EPSS case study and then presents the methods used for the reanalysis of the data based on the concept of triangulation. The conceptual framework for complementary triangulation presented in Figure 1 at the end of Chapter 2 is used as the overall structure to present this information. Data collection is categorized according to data sources, methods, observers and theories. Data analysis is organized according to theories. The evaluation design used in the original EPSS study (see Appendix A), as well as the methods for data collection and analysis, were adaptations of ideas presented by Yin (1984) for an evaluation setting. The approach to data analysis used in the reanalysis of the data collected in the EPSS study is based the concept of theory triangulation presented by Denzin (1978).

The strategy proposed by Yin (1984) that was followed in the EPSS study that makes the reanalysis of the data collected in the EPSS evaluation possible was the creation of a "case study data base" (p. 92). Yin states that, "the case study strategy has much to learn from the practices used with other [research] strategies, where documentation generally consists of two separate collections: (1) the data base . . . and (2) the report of the investigator . . . " (p. 92). He recommends the maintenance of a data base consisting of the data in its original form. This original data base "can then be the subject of separate, secondary analysis, independent of any reports by the original investigator" (p. 92).
The portion of the EPSS data base which is used in this study consists of the data collected by the author of this dissertation on the four teachers on Oahu taking part in the EPSS evaluation. For the data base additional information was collected during the teacher observations on Oahu through the use of a tape recorder and through photographs which were taken of the settings and some activities. The tape recorder was also used to tape the "informal conversational interviews" (Patton, 1990, p. 288) held with the teachers and the Department of Education's Early Childhood Specialist overseeing the EPSS program. Through the informal interviews, additional information was collected in the area of instruction. The reanalysis focuses on this data base in an effort to demonstrate the approach to qualitative data analysis based on the concept of theory triangulation and to expand upon and clarify the information on the instructional practices used by the teachers presented in the initial EPSS evaluation.

**Data Collection**

The strategies for data collection in the EPSS evaluation align with those presented within the context of complementary triangulation in Chapter 2 of this dissertation except in the area of multiple theories. Complementary triangulation suggests data collection should include multiple methods, observers, data sources, and theories.

The guidelines for data collection followed in the EPSS study suggested by Yin (1984) were the use of multiple sources of evidence, the creation of a case study data base and the maintenance of a chain of evidence (pp. 89-97). In the study multiple
sources of evidence included information from seven different teachers collected through observations, interviews and questionnaires. The evaluation data base contained notes, tapes and pictures from the observations, notes and tapes from the interviews, the completed questionnaires, and numerous documents collected during the study. A chain of evidence was created by collecting the data over a period of time. For example, site visits to collect data on Oahu were planned for November, January, March and May.

The alignment of the strategies used for data collection in the EPSS evaluation and those suggested within the context of complementary triangulation are illustrated in Figure 3.

![Figure 3](image)

Figure 3. The strategies used for data collection in the EPSS study.
Data Sources

In the EPSS evaluation seven teachers were recruited to participate in the study from approximately 600 kindergarten teachers statewide. These teachers were among those who were most successful in working with children needing help in language development, which is the current focus of the EPSS program. Children were identified as needing help in language development through their scores on the Peabody Picture Vocabulary Test, Revised and the Missouri Kindergarten Inventory of Developmental Skills. To identify the successful teachers for the evaluation, the following information for the 600 teachers was reviewed for the school years 1987-88 and 1988-89.

a. Percentage of students with language needs at the beginning of the school year.

b. Percentage of students with language needs at the end of the school year.

c. Teachers whose percentages showed the most improvement.

Those teachers whose percentages showed the most improvement were defined as successful teachers. For each district, a teacher was recruited from among those with the greatest improvement in percentage of students moving out of the needs category to participate in the study. All participating teachers agreed to be part of the study and had the support of their school's principal.

All information from the teachers was collected while they were at school. Data collection started in November of the 1989-90 school year and was completed in May. Each teacher on Oahu was observed four times and on the neighbor islands three times. In addition to the observations each teacher was interviewed at least
twice on the neighbor islands and four times on Oahu. Information was collected in a manner similar to what Patton (1990) describes as "purposeful sampling" (p. 169). One successful teacher was selected from each of the seven school districts in the state system and data collection was scheduled to sample different times of the day as well as different dates throughout the school year.

A secondary source of information throughout the evaluation process was the Department of Education's Early Education Specialist responsible for overseeing the implementation of the EPSS Program. Numerous discussions were held between the EPSS evaluation team and the Department of Education Specialist during the 1989-90 school year as well as two interviews conducted by the author of this dissertation in March and December of 1990.

Methods of Data Collection

In the EPSS evaluation multiple methods of data collection were used and consisted of questionnaires, interviews and observations. The observations of the teachers in their classrooms lasted for one hour, and teachers were instructed to "teach as you normally do" (Nakamura et al., 1990, p. 9). During the observation, observers took notes on what they saw and summarized these in narrative form after each observation. The summaries were then shared with the teachers to verify the accuracy of the information and to secure their written comments and reactions (see Appendix C for an example of an observation summary and the teacher's comments).

The Program Guide for the Early Provisions for School Success program (Hawaii State Department of Education, 1988) and information from the National
Association for the Education of Young Children (1986) were used to develop the questionnaire and interview questions used in the evaluation (see Appendix D and E for copies of the questionnaire and interview questions). Preassigned questions were used to ensure that parallel information was collected at different sites.

Observers

Except for the fourth visit on Oahu, which was conducted by only one observer, all other observations were made by two members of the evaluation staff. At each site one observer remained the same for all of the observations to note changes in the classroom over time. The second observer was a different person on each visit to gain a variety of perspectives on the instructional activities at the site. The Department of Education Specialist also observed on the second round of site visits, creating a team of three for one set of observations.

Theories

The single theory or conceptual framework used to organize data collection was created by the EPSS program guide and information from the National Association for the Education of Young Children. This perspective proposes that instruction at the kindergarten level should be "developmentally appropriate" and represents the perspective of the program's Specialist and the EPSS program.

Although this perspective on early education guided data collection for the EPSS study, additional information was collected for this dissertation outside this conceptual framework. In the observations, generic information was collected through
the notes taken at the sites and the use of a tape recorder and a camera. In the informal interviews with the teachers, additional questions were asked in the area of instruction. This information was not limited to any given conceptual framework and was collected in an effort to provide additional data for this dissertation.

Data Analysis

Data analysis based upon theory triangulation involves the analysis of data utilizing two or more perspectives or theories. The analytical procedure within this process is the segmenting, categorizing and presentation of the qualitative data from a single data base two or more times. Within this dissertation segmenting the data is viewed as the process of coding the information contained in the EPSS data base. This information is considered part of the data base and is not presented in the dissertation. Categorizing is the placing of the coded data in initial data displays to organize and reassemble the coded data. This information is summarized in data displays placed in the appendices. The final step in the analysis is the presentation of the results of the process of segmenting and categorizing the data base. This information is presented in the findings section of the report through narrative text and data displays. This approach to qualitative data analysis is illustrated in Figure 4.
Figure 4. The analytical procedure repeated for each theory.

**EPSS Study—Single Perspective**

In retrospect, the approach to data analysis used in the EPSS study focused on the single perspective of "developmentally appropriate" practices that are presented in the EPSS guide. The approach to analysis used in the study was an adaptation for an evaluation setting of "pattern-matching" as presented by Yin (1984). Pattern-matching as described by Yin is a process where the information that is collected is "related to some theoretical proposition" (p. 33). This process presents a logical method of comparing "an empirically based pattern with a predicted one" (Yin, 1984, p.103). In the EPSS study the data was analyzed by relating it to a single perspective, the theory created by the guidelines for developmentally appropriate practices as articulated in the EPSS program guide and information from the National Association for the Education of Young Children (NAEYC). The empirically based pattern in the EPSS study was the one created by the information collected through the observations,
interviews, and questionnaires. The predicted pattern was the one created by
guidelines from the EPSS guide and from the NAEYC documents.

The information from the interviews and questionnaires was analyzed by
relating it directly to the predicted pattern created by the EPSS guide. The observation
data were first coded, using preassigned codes developed from the EPSS guide and
NAEYC documents (See Appendix F for a copy of the coding guide). After coding
the data were then categorized through data displays referred to in the EPSS study as
"data shells" to determine the frequency and emphasis of coded activities (see
Appendix G for a copy of the data shell). Activities categorized as "primary" on the
data shells were those used often by the teachers during the observations or those that
appeared to the observers to represent the teacher's dominant strategy. After the data
shells were completed for each observation, a cross-case analysis was completed to
arrive at an overall pattern of results and to determine the degree to which this pattern
matched the predicted one based on the EPSS guide. The findings were then
summarized in data displays and narrative text.

Reanalysis—Multiple Perspectives

The reanalysis of the EPSS data uses the conceptual framework presented at
the end of Chapter 2 to analyze the information collected from the sites on Oahu. The
analysis focuses on the data applicable to the area of instruction. The process involves
three perspectives or theories and can be envisioned as three steps.

The first step follows the pattern-matching procedure used in the EPSS study
and reanalyzes the subset of the EPSS data collected on the four teachers on Oahu.
Data from the observations, interviews and questionnaires are coded and then the "data shells" developed for the EPSS study are used to categorize the segmented data. The findings from this analysis are seen as representing the perspective presented by the EPSS program.

The second step in the analysis uses the same pattern-matching procedure to reanalyze the data set but uses an alternative pattern. This pattern represents a different perspective on early education than the position taken by the EPSS program and NAEYC. The alternative pattern selected for the analysis, based on input from the Department of Education's Early Childhood Specialist, is an approach referred to as "direct instruction." This approach to early education is highly structured and focuses on the development of academic skills. In this step, the data base from the EPSS study is coded using codes developed from the Direct Instruction Model Implementation Manual (Becker, 1977) developed at the University of Oregon (see Appendix I for a copy of the coding guide). The findings from this analysis are seen as representing an alternative perspective on early education.

The third step uses an inductive procedure for reanalyzing the data set. This approach is a modified version of the "explanation-building" method of data analysis presented by Yin (1989). This analysis presents a third perspective on the data collected and focuses on the teachers' views on instruction within the framework of the two alternative patterns presented in step one and step two.

In this last step the procedures for "explanation-building" outlined by Yin (1989, pp. 114-115), slightly modified for this dissertation, are followed.
• an initial set of codes is created from the data collected at a single site.

• initial coding categories focus on "conditions, interactions . . ., strategies . . . [and] consequences" as suggested by Strauss (1987, pp. 27-28).

• the initial set of codes developed at site one is then used to code the data collected at a second site.

• the codes are then revised to fit the data collected at site two.

• the revised codes are then used to recode the data from the first site.

• the codes are revised to fit the data from both the first and second sites.

• this process of coding and revision is then repeated for sites three and four.

The codes created through this inductive procedure, representing the teachers' perspectives on their instructional strategies, are presented in Appendix L.

The final step in the analysis of the data for each of the three perspectives is the presentation of findings through a combination of narrative text and data displays in Chapter 4. Interpretations, considered within this dissertation as the process following analysis in qualitative inquiry, are presented in Chapter 5.
Chapter 4

FINDINGS

The findings presented in this chapter are derived from a reanalysis of a subset of the data collected in the 1989-90 evaluation of the Early Provisions for School Success (EPSS) Program. They are presented (a) to illustrate the use of an approach to qualitative data analysis based on the concept of theory triangulation and (b) to provide additional information on the common instructional practices of the four "successful" teachers from Oahu who took part in the EPSS Program evaluation.

In the following chapter, three separate sections are used to build a description of the instructional practices of the four teachers based on three different perspectives on their instructional strategies. The first section presents the findings from the perspective of the EPSS program. This perspective on instruction supports "developmentally appropriate" practices as they are defined in the EPSS program guide and information from the National Association for the Education of Young Children (NAEYC). An alternative perspective on instruction, referred to as "direct instruction," is then used to describe additional instructional practices of the four teachers in the second section. This perspective supports a highly structured, teacher directed, academically oriented approach to early education. The third section offers the teachers' own theories and perspectives on their approaches to instruction. The findings in this section are based on the information reported by the teachers through the questionnaire, the interviews, and their written comments on the observation summaries.
In each section the information is presented as it relates to the pattern created by the perspective being covered. Through this process the instructional strategies used by the teachers are identified. Then in the last section of this chapter, a new pattern is presented which represents the components of the three perspectives that the findings support as common practices of the four teachers.

Through the reanalysis, instructional practices for each perspective were categorized as observed as a primary strategy or not observed as a primary strategy. Instructional practices were identified as "observed as a primary strategy" if they were used often during the observations by the teachers at a majority of the sites or appeared to represent the teachers' dominant strategy in a given area although they were not observed frequently. For example, specific disciplinary procedures might be observed only occasionally but were considered a primary strategy based on the information that was collected through the observations. In the following chapter, only the practices identified as "observed as a primary strategy" are presented. Instructional practices that were "not observed as a primary strategy" are included in the appendices of the report.

Data displays in the form of word tables are used as the means to present the findings in each section. The practices outlined in the data displays are the coding categories used initially to code the data. They were selected for the data displays and as codes to describe the practices of the teachers from a given perspective. They are not always mutually exclusive or precise categories and in several cases the descriptions they provide overlap. Within the context of this dissertation, the coding
categories and data displays are used to build description rather than to create precise categories that provide confirmation.

**EPSS Perspective**

**Introduction**

The EPSS perspective is summarized in the introduction to the implementing guidelines in the EPSS program guide:

The teacher determines the quality of programs for young children. Yet even within the field of early education there is no general consensus about what constitutes a good teacher of young children. However, many early childhood educators agree that a major determinant of the quality of an early education program is the degree to which the program is developmentally appropriate . . . . In selecting primary teachers who will provide such developmentally appropriate education for young children, principals can consider the following . . . . teacher characteristics or behaviors essential to effective instruction of young children . . . .

- Have a elementary education teaching certificate.
- Have successful teaching experiences in K-3 grades.
- Understand child development at K-3 levels . . . apply such knowledge and understanding to early childhood practices . . .
- Develop positive relations with children . . . .
- Use positive guidance techniques . . . .
- Focus on the development of the total child . . . subject-matter is interrelated since children's learning does not occur in narrowly defined subject areas; their development and learning are integrated.
- Encourage children to be actively involved in the learning process . . . .
- Provide for a wide range of developmental interests and abilities . . . provide a variety of developmentally appropriate activities and materials that are selected to emphasize concrete experiential learning . . . (Hawaii State Department of Education, 1988, pp. 8-9)
The information in the data display at the end of this section offers a description of the instructional practices of the four teachers from the perspective of the EPSS program. Instructional practices outlined in the EPSS program guide are covered. Guidelines in the area of instruction in the guide include recommended practices in the area of classroom management and instructional delivery. Also covered in the data display are the instructional strategies taken from information from NAEYC that were used as codes in the original EPSS study. They include strategies for language development and developmentally "inappropriate" practices from the perspective of NAEYC.

Language development is not covered specifically in the EPSS guide. However language development has been a primary focus of the EPSS Program since 1985. Therefore, the "appropriate practices" recommended by NAEYC in the area of language development (National Association for the Education of Young Children, 1986, p. 24) were used to review the instructional practices of the teachers in the original EPSS study. Seven guidelines were developed using information from NAEYC.

The NAEYC also identifies a number of instructional strategies that they consider "developmentally inappropriate for young children" (National Association for the Education of Young Children, 1986, p. 20). Although not reported in the original EPSS evaluation study, these practices were used in the initial coding of the EPSS data base. As noted by NAEYC, the descriptions of appropriate and inappropriate practices "overlap considerably," (p. 22) but the differentiation does help clarify by
positive and negative examples the NAEYC position on developmentally appropriate practices. Fourteen instructional strategies NAEYC considered "inappropriate" were included in the EPSS coding guide and are the number codes prefixed with the letter x [see Appendix F].

In the EPSS program guide, teaching experiences in grades K-3 and certification in elementary education were also recommended as essential characteristics of good teachers of young children. All four teachers from Oahu taking part in the EPSS study were experienced, certified teachers. The number of years of teaching experience in grades K-3 for the four teachers were six, twenty-two, twenty-three and twenty-three.

Instructional Strategies

The data shell summarizing the results of the coding and categorization of the data from the EPSS perspective is presented in Appendix G. The information provided through the data shell was used to develop the following cross-case summary of the findings from the reanalysis of the data collected at the four sites. Based on the information collected in the area of instruction in the 1989-90 EPSS evaluation which has been reanalyzed for this dissertation, the teachers were observed using eight of the twenty-seven practices outlined in the EPSS guide, four of the seven strategies in the area of language development recommended by NAEYC, and three of the fourteen instructional strategies considered "developmentally inappropriate" by NAEYC. Table 1 outlines the fifteen instructional strategies that were identified through the reanalysis of the EPSS data as common instructional practices of the four teachers.
The information in brackets found in several of the descriptions is included to help clarify specific strategies. The practices that were not observed as primary strategies of the four teachers from the perspective of the EPSS program are outlined in Appendix H.

Table 1

Instructional Practices Identified as Primary Strategies of the Four Teachers Based on an Analysis of the Data From the Perspective of the EPSS Program

**Classroom Management**

- Prepare the environment for children that is conducive to learning through active exploration and interaction with adults, other children and materials (1.01)
- Allow children to work in small groups or individually most of the time [approximately 50% of the time] (1.03)
- Move among groups/individuals to facilitate the children's involvement with materials and activities (1.05)
- Facilitate the development of self-control by using positive guidance techniques such as modeling and encouraging expected behavior, redirecting children to a more acceptable activity and setting clear limits (1.07)

**Instructional Delivery**

- Use the child's prior experiences to support and facilitate new learning (1.12)
- Foster situations which allows for experiencing, interacting, experimenting and exploring (1.31)
- Include personal experiences and knowledge as the bases for integrating instruction (1.42)
- Provide a reasonable and consistent discipline process (1.52)
Table 1 (continued)

Instructional Practices Identified as Primary Strategies
of the Four Teachers Based on an Analysis of the Data

From the Perspective of the EPSS Program

<table>
<thead>
<tr>
<th>Language Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provide opportunities to listen to and read stories and poems (1.61)</td>
</tr>
<tr>
<td>• Provide opportunities to see classroom charts and other print in use (1.64)</td>
</tr>
<tr>
<td>• Encourage dramatic play and other experiences requiring communication (1.65)</td>
</tr>
<tr>
<td>• Allow time for talking informally with other children and adults (1.66)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NAEYC &quot;Inappropriate&quot; Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Use highly structured, teacher directed lessons most of the time (x1.01)</td>
</tr>
<tr>
<td>• Have children sit down, watch, be quiet and listen for long periods of time [used during large group instruction, students were expected to respond only to ideas and questions presented in the lesson] (x1.02)</td>
</tr>
<tr>
<td>• Use large group instruction most of the time [used approximately 50% of the time] (x1.03)</td>
</tr>
</tbody>
</table>
An Alternative Perspective: Direct Instruction

Introduction

The codes created for this dissertation to represent this perspective are from the Direct Instruction Model Implementation Manual (Becker, 1977) developed at the University of Oregon as part of the U.S. Office of Education's Project Follow Through. This perspective on early education is summarized in the introduction to the "Guidebook for Teachers" found in the implementation manual:

The Direct Instruction Model . . . . is premised on the belief that every child can be academically successful if s/he is provided with adequate instruction. The instruction component is designed to begin with the skills that the children bring to school and build on them at a faster rate than would occur in a more traditional setting. The following procedures outline the basic principles of the program:

• Teachers require a far greater number of responses from the children.

• Procedures are adjusted to individual rates of progress.

• Program materials which teach essential concepts and operations required for future tasks are used.

• Teachers systematically use reinforcement principles to insure success for each child.

• Novel programming strategies are used . . . [the program materials are used] to teach the general case rather than focusing on specifics.

The general philosophy of the Direct Instruction Model is that a child who fails is a child who has not been taught . . . . Preventing failure can be insured if the teacher is skilled and if the instructional materials are carefully designed . . . . The core of the instructional program consists of programmed teacher presentation materials in reading, arithmetic and language at three levels which are published by Science Research Associates under the trade name DISTAR (Direct Instruction Systems for Teaching and Remediation) . . . . In most applications of the Model, the
The information presented in the data display in this section provides a cross-case summary of the instructional practices of the four teachers from the perspectives presented in the program manual for the Oregon model of direct instruction. The practices include strategies that were not identified in the context of the EPSS perspective as well as several that help clarify strategies that were identified. Through the reanalysis of the EPSS data, it was determined that the teachers did not use the majority of the strategies that were selected from the program manual to represent this perspective on instruction. The program manual covers instructional strategies and procedures in great detail. From those offered in the guide, seventy-eight were selected to represent this perspective.

**Instructional Strategies**

The data shell summarizing the results of the coding and categorization of the data from an alternative perspective on early education, direct instruction, is presented in Appendix J. Table 2 outlines the twenty-eight instructional strategies that were identified through the reanalysis as common instructional practices of the four teachers. The practices that were not observed as primary strategies of the teachers from the direct instruction perspective are outlined in Appendix K. By reviewing the information covered in Appendix K, it is apparent that the teachers were not following the highly structured, "programmed" approach to instruction prescribed in the Oregon
Direct Instruction Model. In this situation the identification of the practices the teachers did not use also adds to the overall description of their instructional strategies.

Table 2

Instructional Practices Identified as Primary Strategies of the Four Teachers Based on an Analysis of the Data From the Perspective of the Oregon Direct Instruction Model

---

**Small Group Instruction**

- Use small groups of three to eight children (1.01)
- Divide the classroom into at least three groups (1.03)
- Interact positively with students making twice as many positive comments as negative comments (1.06)
- Ask questions to confirm the children's understanding of the task (1.07)
- Make small-groups an enjoyable experience for the children (1.13)

**Large Group Instruction**

- Seat children in a small cluster on the floor (1.22)
- Keep the lesson moving quickly, intersperse group and individual turns and/or provide short "change ups" to keep children interested (1.25)

**Preparation**

- Prepare by focusing on new materials and specific examples to be used (2.01)
- Know the main goal of each task, where children are likely to make errors, and which teaching techniques need to be used (2.02)

**Securing Attention**

- Secure the attention of the students before beginning an instructional task (2.11)
- Use a few simple commands before beginning a lesson to secure attention (2.12)
- Scan the group to check that students are attending before presenting the task (2.13)
Table 2 (continued)

Instructional Practices Identified as Primary Strategies
of the Four Teachers Based on an Analysis of the Data
From the Perspective of the Oregon Direct Instruction Model

Pacing

- Move quickly through the tasks in the lesson (2.41)
- In order to maintain a brisk pace: know the lesson well, and be organized (2.42)
- Allow children additional time for difficult tasks (2.43)
- Vary the pace of the lesson to maintain good motivation (2.44)

Reinforcement

- Praise the children for a good performance/behavior (2.51)
- Tell the children what behaviors were liked (2.52)
- Praise frequently (2.53)

Classroom Management

- Set up rules and enforce them (3.01)
- Greet the children at the door and give them individual attention (3.02)
- Set up rules for going to the bathroom and other classroom routines (3.03)

Scheduling

- Follow a classroom schedule which provides a relative stable routine (3.11)
- Keep the class activities on schedule (3.12)
- Keep the transitions between activities fast and efficient (3.13)

Classroom Setup

- Keep the classroom clean and orderly (3.21)
- Exhibit children's art work and papers on the wall (3.22)
- Keep bulletin boards current (3.23)
Teachers' Perspective

Introduction

The third perspective used to reanalyze the EPSS data on the instructional strategies of the four teachers is based on the information reported by the teachers through the questionnaire, the interviews, and the teachers' written comments in response to the observation summaries. The codes representing the teachers' own theories and perspectives on their approaches to instruction were developed inductively and are presented in Appendix L. Codes were only developed if they identified information on the instructional practices of the four teachers that was not included in either of the first two perspectives.

The procedures for "explanation-building" outlined by Yin (1989, pp. 114-115), slightly modified for this dissertation, were used to develop the codes and then categorize the data:

- an initial set of codes was created from the data collected at a single site.
- the initial set of codes developed at the first site was then used to code the data collected at a second site.
- the revised codes were then used to recode the data from the first site.
- the codes were then revised to fit the data from both the first and second sites.
• this process of coding and revision was then repeated for sites three and four.

In an effort to develop coding categories that were representative of the teachers' perspectives on their instructional strategies, all the codes that were developed were initially based on the ideas reported by the teachers. Data from the observations were then used to more clearly define and support the practices and strategies the teachers had identified.

Instructional strategies that were identified through the process of explanation-building were limited to (a) those that were reported by one or more teachers and then supported by observational data as a "primary strategy" at a majority of the sites and (b) those that were "reported as a primary strategy" by the teachers at a majority of the sites but were not observed as a primary strategy during the observations. Only practices that were reported by the teachers and then supported by observational data as a "primary strategy" are identified as common instructional strategies of the four teachers.

**Conditions/Consequences and Interactions**

Data analysis for this dissertation has focused primarily on instructional strategies. However, by following the "coding paradigm" suggested by Strauss (1987, p. 27), several codes were developed from the information reported by the teachers which establishes a partial view of the context in which the teachers' instructional strategies were used. During the actual process of coding the data, the four initial coding categories suggested in Strauss's paradigm quickly evolved into three
categories which were then used during the remainder of the coding process. The three general categories were conditions/consequences, interactions, and strategies. The information obtained through codes covering conditions/consequences and interactions is presented in the following paragraphs as an introduction to the teachers' perspectives on their own instructional strategies.

Through the inductive coding of the EPSS data four sets of conditions and consequences were identified that were observed having an impact on the teachers' instructional strategies. They included class size reduction, EPSS testing, parent involvement, and the EPSS forms. The other condition/consequence that was reported by all four teachers but not actually observed was the supportive working relationship that they had with the other kindergarten teachers at their school.

Class size reduction was initiated in kindergarten classes in the Department of Education system in 1987. As a result the teachers in all four schools had no more than twenty-two students in their room at one time. In some cases during the observations there were no more than fourteen or fifteen students. The number of students per room during the observations averaged nineteen.

Kindergarten teachers in Hawaii are directly involved in the testing component of the EPSS program as they administer the pre- and post-tests that are given to their children each year. Because the focus of the EPSS program has been language development since 1985 and the teachers do the EPSS testing, they were very aware of the large number of language needs students in their classrooms and as a result, emphasized language development in their instruction.
Parent involvement has been encouraged at the kindergarten level and is included as one of six sections in the guidelines for kindergarten classrooms in the EPSS program guide. However, the four kindergarten teachers reported that because many parents work, have other children to watch, don't speak English or seem unwilling to volunteer, they very seldom have help from parents in the classroom.

The "EPSS form" [see Appendix N] was created to serve a vital function in the overall implementation of the EPSS program. It was designed as the mechanism to document "the children's entry levels . . . to monitor children's progress and to provide appropriate instruction" (Department of Education, EPSS Record Form, 1987). However, because the teachers don't find the EPSS forms useful, they don't use the form as an integral part of their kindergarten program.

Supportive working relationships with other kindergarten teachers at their school were reported by all four teachers. This support included the help of a resource teacher at one school and the consultation, planning and assistance of the other kindergarten teachers at the other three schools. Although not actually observed, this support at the school level was considered by the teachers to be an important aspect of their instructional program.

Interactions that were identified included the teachers' views of their relationships with the EPSS program, kindergarten children, parents and other kindergarten teachers at their school. As noted previously, their working relationship with the other kindergarten teachers at their schools were reported as positive. The teachers as a group, viewed the EPSS program as an administrative responsibility.
rather than an integral part of their instructional program. Only the EPSS testing component was observed to have a day to day impact on their practices and strategies. The teachers reported, and the observations confirmed, that they were very supportive of kindergarten children, viewing them as capable and enjoyable to work with. However, their interactions with the parents of their students were few within the classroom. In none of the observations were parents present, but the teachers did report that they sought their support at home.

**Instructional Strategies**

The data shell summarizing the results of the coding and categorization of the data from the teachers' perspectives is presented in Appendix M. Through a reanalysis of the EPSS data based on the teachers' perspectives on their instructional strategies twenty-six additional strategies were identified. Only two of the strategies reported by the teachers at a majority of the sites were not observed to be primary strategies. They were

- Use learning centers or activity centers for instructional purposes during the course of the school day (3.11)
- Integrate lessons "vertically" by including more than one content area in a single lesson (3.12)

The other twenty-four strategies were supported by observational data as common instructional strategies of the four teachers and are presented in Table 3.
Table 3

Instructional Practices Identified as Primary Strategies of the Four Teachers Based on an Analysis of the Data From the Perspective of the Teachers Taking Part in the Study

Classroom Management

- Establish procedures for classroom routines that are used consistently and are easy for students to follow (3.01)
- Review expectations involving classroom procedures and routines before beginning an activity (3.02)
- Create opportunities for students to move from one activity to another within the context of a single lesson (3.03)

Instructional Delivery

- Provide opportunities for "hands on" activities as a part of a total lesson, creating an experience related to the topic (3.10)
- Integrate lessons "horizontally" by linking current activities to earlier lessons (3.13)
- Orchestrate several activities within a single lesson (3.14)
- Use large group instruction as the first part of a "formal" lesson followed by small group or individual activities (3.15)
- Use large group instruction for teacher-child instructional interaction (3.16)
- Use small group instruction for child-child interaction (3.17)
- Establish clear expectations for students in small group activities (3.18)

Language Development

- Emphasize language arts in lessons throughout the day (3.20)
- Listen to the students in their efforts to use language (3.21)
- Encourage students to respond and take part in lessons through numerous questions (3.22)
- Use books and stories as part of a larger lesson (3.23)
- Involve students in stories read in class by questions and discussions, activities and/or tying the story to student experiences (3.24)
- Encourage students to read in class (3.30)
- Provide many opportunities to see written language in use (3.31)
- Use and display teacher produced charts, graphs and pictures that are based on students' words, ideas and activities (3.32)
Table 3 (continued)

Instructional Practices Identified as Primary Strategies
of the Four Teachers Based on an Analysis of the Data
From the Perspective of the Teachers Taking Part in the Study

- Value students' efforts at written language by displaying their work in the classroom and/or organizing it into booklets (3.33)
- Encourage students to write by having them write their own sentences and/or writing sentences for them using their own words (3.34)
- Use the labeling of pictures as part of the emphasis on language development (3.35)
- Emphasize vocabulary development in lessons (3.40)
- Cover vocabulary words in discussions that are part of the lessons (3.41)
- Teach vocabulary words through their use in context rather than through drill (3.42)

Summary—Theory Triangulation: Thick Analysis

As in the original EPSS evaluation, the findings from the reanalysis supported the observation that "there were many [EPSS and NAEYC] practices that were not consistently followed" (Nakamura et al., 1990, p. 48). The reanalysis of the data from the EPSS perspective found that the four teachers used as common strategies eight of the twenty-seven practices outlined in the EPSS guide, four of the seven strategies in the area of language development recommended by NAEYC, and three of fourteen instructional strategies considered "developmentally inappropriate" by NAEYC. By reanalyzing the data from a second and third perspective, fifty-two additional instructional practices and strategies were also identified.
Through "thick analysis," defined earlier as the process of applying the concept of theory triangulation to qualitative data analysis, findings can be offered which provide a more holistic perspective of the teaching strategies of the four teachers. Within the context of this dissertation, description focuses on providing a multi-dimensional picture of the instructional strategies of the four teachers. An illustration of this approach to data analysis is presented in Figure 5.
Figure 5. An illustration of the intended outcomes of qualitative data analysis based on the concept of theory triangulation.
The sixty-seven instructional strategies identified through the reanalysis of the EPSS data using an approach to data analysis based on theory triangulation are presented in Table 4. To illustrate the impact on the description of the teachers' instructional strategies that the additional details identified through the reanalysis provide, the additional strategies are marked with a plus sign [+] . The strategies in the chart have been grouped into three main categories: classroom management, instructional delivery and language development. In the area of instructional delivery three blocks of strategies are presented: general strategies, strategies for large group instruction and those applicable to small group instruction/individual activities.
Table 4

Common Instructional Practices

of Four Successful Kindergarten Teachers

<table>
<thead>
<tr>
<th>Classroom Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Prepare the environment for children that is conducive to learning through active exploration and interaction with adults, other children and materials (EPSS 1.01)</td>
</tr>
<tr>
<td>+ Keep the classroom clean and orderly (Direct Instruction 3.21)</td>
</tr>
<tr>
<td>+ Exhibit children's art work and papers on the walls (Direct Instruction 3.22)</td>
</tr>
<tr>
<td>+ Keep bulletin boards current (Direct Instruction 3.22)</td>
</tr>
<tr>
<td>+ Greet the children at the door and give them individual attention (Direct Instruction 3.02)</td>
</tr>
<tr>
<td>+ Follow a classroom schedule which provides a relatively stable routine (Direct Instruction 3.11)</td>
</tr>
<tr>
<td>+ Keep the class activities on schedule (Direct Instruction 3.12)</td>
</tr>
<tr>
<td>+ Keep the transitions between activities fast and efficient (Direct Instruction 3.13)</td>
</tr>
<tr>
<td>+ Set up rules for going to the bathroom and other classroom procedures (Direct Instruction 3.03)</td>
</tr>
<tr>
<td>+ Establish procedures for classroom routines that are used consistently and are easy for the students to follow (Teachers' Perspective 3.01)</td>
</tr>
<tr>
<td>+ Review expectations involving classroom procedures and routines before beginning an activity (Teachers' Perspective 3.02)</td>
</tr>
<tr>
<td>• Facilitate the development of self-control by using positive guidance techniques such as modeling and encouragining expected behavior, redirecting children to a more acceptable activity and setting clear limits (EPSS 1.07)</td>
</tr>
<tr>
<td>+ Set up rules and enforce them (Direct Instruction 3.01)</td>
</tr>
<tr>
<td>+ Praise the children for good performance/behavior (Direct Instruction 2.51)</td>
</tr>
<tr>
<td>+ Tell the children what behaviors were liked (Direct Instruction 2.52)</td>
</tr>
<tr>
<td>+ Praise frequently (Direct Instruction 2.53)</td>
</tr>
<tr>
<td>• Provide a reasonable and consistent discipline process (EPSS 1.52)</td>
</tr>
</tbody>
</table>

Instructional Delivery—General Strategies

+ Use structured, teacher-directed lessons (EPSS/NAEYC x1.01) |
+ Prepare by focusing on new materials and specific examples to be used (Direct Instruction 2.01) |
+ Know the main goal of each task, where children are likely to make errors, and which teaching techniques need to be used (Direct Instruction 2.02) |
Table 4 (continued)

Common Instructional Practices
of Four Successful Kindergarten Teachers

Instructional Delivery—General Strategies (continued)

+ Secure the attention of students before beginning an instructional task (Direct Instruction 2.11)
+ Use a few simple commands before beginning a lesson to secure attention (Direct Instruction 2.12)
+ Scan the group to check that the students are attending before presenting the task (Direct Instruction 2.13)
+ Allow children additional time for difficult tasks (Direct Instruction 2.43)
+ Orchestrate several activities within a single lesson (Teachers’ Perspective 3.14)
+ Create opportunities for students to move from one activity to another within the context of a single lesson (Teachers’ Perspective 3.03)
+ Provide opportunities for "hands on" activities as part of a total lesson, creating an experience related to the topic (Teachers’ Perspective 3.10)
+ Use the child's prior experience, [both in and out of the classroom] to support and facilitate new learning (EPSS 1.12)
+ Include personal experiences and knowledge as the basis for integrating instruction (EPSS 1.42)
+ Integrate lessons "horizontally" by linking current activities to earlier lessons (Teachers’ Perspective 3.13)
+ Use large group instruction as the first part of a "formal" lesson followed by small group or individual activities (Teachers’ Perspective 3.15)

Instructional Strategies—Large Groups

+ Use large group instruction [approximately 50% of the time] (EPSS/NAEYC x1.03)
+ Use large group instruction for teacher-child instructional interactions (Teachers’ Perspective 3.16)
+ [During large group instruction] have children sit down, watch, be quiet and listen [except when responding to the lesson or specific questions] (EPSS/NAEYC x1.02)
+ Seat children [during large group instruction] in a small cluster on the floor (Direct Instruction 1.22)
+ Move quickly through the tasks in the lesson (Direct Instruction 2.41)
+ In order to maintain a brisk pace: know the lesson well and be organized (Direct Instruction 2.42)
+ Vary the pace of the lesson to maintain good motivation (Direct Instruction 2.44)
+ Keep the lesson moving quickly, intersperse group and individual turns or provide short "change ups" to keep the children interested (Direct Instruction 1.25)
Table 4 (continued)

Common Instructional Practices

of Four Successful Kindergarten Teachers

Instructional Strategies—Small Groups/Individual Activities

• Allow children to work in small groups or individually [approximately 50% of the time] (EPSS1.03)
+ Use small groups of three to eight children (Direct Instruction 1.01)
+ Divide the classroom into at least three groups (Direct Instruction 1.03)
+ Use small group instruction [and individual activities] for child-child interactions (Teachers' Perspective 3.17)
• [In small groups and individual activities] foster learning situations which allow for experiencing, interacting, experimenting and exploring (EPSS 1.31)
+ Establish clear expectations for students in [individual and] small group activities (Teachers' Perspective 3.18)
• Move among groups/individuals to facilitate the children's involvement with materials and activities (EPSS 1.05)
+ Ask questions to confirm the children's understanding of the task (Direct Instruction 1.07)
+ Interact positively with students making twice as many positive comments as negative comments (Direct Instruction 1.06)
+ Make small groups [and individual activities] an enjoyable experience for the children (Direct Instruction 1.13)

Language Development

+ Emphasize language arts in lessons throughout the day (Teachers' Perspective 3.20).
• Encourage experiences requiring communication (EPSS/NAEYC 1.65)
+ Listen to the students in their efforts to use language (Teachers' Perspective 3.21)
+ Encourage students to respond and take part in lessons through numerous questions (Teachers' Perspective 3.22)
• Allow time for talking informally with other children and adults (EPSS/NAEYC 1.66)
+ Provide opportunities to listen to and read stories and poems (EPSS/NAEYC 1.66)
+ Use books and stories as part of a larger lesson (Teachers' Perspective 3.23)
+ Involve students in stories read in class by questions and discussions, activities, and/or tying the story to student experiences (Teachers' Perspective 3.24)
+ Encourage students to read in class (Teachers' Perspective 3.30)
Table 4 (continued)

Common Instructional Practices
of Four Successful Kindergarten Teachers

Language Development (continued)

- Provide opportunities to see classroom charts and other print in use (EPSS/NAEYC 1.64)
- Provide many opportunities to see written language in use (Teachers' Perspective 3.31)
- Use and display teacher produced charts, graphs, and pictures that are based on students' words, ideas, and activities (Teachers' Perspective 3.32)
- Value students' efforts at written language by displaying their work in the classroom and/or organizing it into booklets (Teachers' Perspective 3.33)
- Encourage students to write by having them write their own sentences and/or writing sentences for them using their own words (Teachers' Perspective 3.34)
- Use the labeling of pictures as part of the emphasis on language development (Teachers' Perspective 3.35)
- Emphasize vocabulary development in lessons (Teachers' Perspective 3.40)
- Cover vocabulary words in discussions that are part of the lessons (Teachers' Perspective 3.41)
- Teach vocabulary words through their use in context rather than through drill (Teachers' Perspective 3.42)
Through the reanalysis of the EPSS data for this dissertation the sixty-seven strategies and practices outlined in Table 4 were found to be representative of the instructional strategies of the four successful teachers. As noted earlier, the strategies were identified as the practices used often by the teachers at a majority of the sites or those that appeared to represent the teachers' dominant strategy in a given area even though they weren't observed frequently. To support the description of the common practices of the four teachers presented in Table 4 as well as "thicken" the description of the instructional strategies, two of the observation summaries are presented in Appendix O and Appendix P of this dissertation. They are presented to serve as examples of the identified strategies of the four teachers. The two observations, which were selected as representative samples of the sixteen summaries reanalyzed for this study, are from two different sites, at two different times of the day and during different months of the school year.
Chapter 5

CONCLUSIONS

Qualitative data analysis based upon theory triangulation has been described within this dissertation as the analysis of data utilizing multiple perspectives or theories. The analytical procedures within this process are the segmenting, categorizing and presentation of the data from a single data base two or more times. Interpretation within this dissertation is considered the process following analysis. In this study the procedures used to segment and categorize the data were described in Chapter 3. The presentation of the data was provided through the findings outlined in Chapter 4. Now in Chapter 5 interpretations are presented in the form of conclusions.

Conclusions will be offered in this chapter that address the two levels of the study outlined in Chapter 1:

The primary purpose of the dissertation is to develop a method for qualitative data analysis based on the concept of theory triangulation. A secondary purpose is to provide a description of the instructional practices of successful kindergarten teachers derived from an application of this approach to analysis.

Conclusions regarding the findings derived from an application of this approach to the analysis are presented first. Conclusions addressing the primary purpose of this study, the development of a systematic approach to qualitative data analysis based on the concept of theory triangulation, are offered in the second section.

Instructional Practices
of the Successful Kindergarten Teachers

As noted earlier, the qualitative data analyzed in this study were collected in the 1989-90 evaluation of the Early Provisions for School Success (EPSS) Program.
Teachers were selected for the original study, described as "A Case Study of Seven Successful Kindergarten Teachers," based on their success in working with children needing help in language development. Using program pre- and post-test scores, "successful" teachers were defined as those teachers who had a large percentage of needs children in the area of language development progress to the non-needs category.

The conclusions offered here are based on a reanalysis of the data collected by the author of this dissertation on the four teachers from Oahu who took part in the EPSS evaluation. The data on the other three teachers who participated in the original EPSS study were collected by other members of the evaluation team and were not available in their original form for reanalysis. By using the EPSS procedures for data analysis as the first step in the reanalysis of the data, it was determined that the findings and conclusions presented in the 1989-90 report were applicable to the four teachers from Oahu. An overview of the research designs used in this dissertation and the original EPSS study are presented in Appendix B.

Two sets of conclusions on the teachers' instructional practices made possible through the reanalysis are presented in the following section. First, conclusions on the instructional strategies of the teachers are covered. Then the additional information gained on the setting and context in which the teachers used these instructional practices are presented.

**Instructional Strategies**

The initial EPSS study had been limited to a review of the data collected on the instructional practices of the teachers from the single perspective of
"developmentally appropriate" practices recommended by the EPSS program and the National Association for the Education of Young Children (NAEYC). By systematically reanalyzing the same data set, first from the EPSS perspective and then from two additional perspectives, fifty-five additional instructional strategies were identified that were not covered in the original EPSS report. An overview of the teachers' instructional practices will be offered here as a complete listing of the strategies are presented in Table 4 in Chapter 4.

Through the reanalysis it was found that the teachers used structured, teacher-directed lessons which included large group instruction approximately 50% of the time and individual and small group instruction approximately 50% of the time. Instructional delivery seemed to follow a regular pattern of large group instruction followed by individual and small group activities. Large group instruction focused on teacher-child interactions, and small group and individual activities focused on children interacting with children and educational materials. The children's prior experiences, both in and out of school, were used to facilitate learning. Language development, including vocabulary development, was a regular component of both large group, and small group and individual activities.

Approaches to classroom management were also structured and like instructional delivery were teacher directed. Procedures for classroom management were used consistently, were clearly understood by the students and were easy for the students to follow. Positive reinforcement of the student behaviors that the teachers expected was used as a primary means of directing student behavior. In cases where students "misbehaved" the teachers either ignored the inappropriate behavior and
reinforced expected behavior or confronted immediately the inappropriate behavior and reinforced expected behavior.

As a general rule, the teachers did not give children an opportunity to initiate their own activities nor did they modify instruction to match the individual developmental needs of most of their students, which are recommended EPSS program practices. On the other hand, although their instructional strategies were structured and largely teacher-directed, they did not use the "programmed" materials nor the point systems to reward appropriate behavior that were suggested in the Oregon Direct Instruction Model.

An example covering the teachers' use of "learning centers" illustrates the approach to instruction generally used by the four teachers, as well as demonstrates how reanalyzing the data from multiple perspectives clarifies and expands upon information presented through a single perspective. Learning centers are areas where children, either individually or in small groups, may select "their own activities from among a variety of areas the teacher prepares, including dramatic play, blocks, science, math games and puzzles, books, recordings, art, and music" (National Association for the Education of Young Children, 1986, p. 25). Learning center activities are covered in the EPSS program guide but are not included in their recommended guidelines; are referred to in the manual for the Oregon Direct Instruction Model; and were reported by the teachers as an instructional strategy that they used.

Three of the four teachers reported that they used learning centers for instructional purposes during the school day. However, this practice was not considered as a "primary" practice of the four teachers, as only two teachers were observed using this strategy on a regular basis. One teacher used learning centers as
activities for students to go to after they completed their "formal" lesson. The other teacher used the learning centers as part of her regular schedule, but the learning centers activities did not appear to be related to other lessons or instructional themes.

In both settings the learning center activities did not appear to be an integral part of the instructional program but rather schedule "fillers" that the students enjoyed. From a direct instruction perspective, this would be an appropriate use of learning centers as they are envisioned as activities for students who finish their work early and need something to do between teacher-directed instructional activities. From an EPSS perspective this would be an inappropriate use of learning centers as they are perceived as an opportunity for child-initiated activities related to the lessons or themes being covered in other classroom activities. If the teachers had used a combination of teacher-directed large group lessons and child-initiated learning center activities related to the large group lesson, for individual and small group activities, there would have been a closer overall alignment of their instructional practices to those recommended in the EPSS program guide.

As noted in Chapter 1, the Department of Education's response to the 1989-90 evaluation had been positive overall. However, the question they asked after reviewing the evaluation report was, if the teachers were not following the practices outlined in the EPSS guide, were they then "using another pattern of instructional guidelines . . . If they were, what were those guidelines?" (Department of Education, communication, October 22, 1990). This question, although of interest to all parties involved in the initial study, was beyond the scope of the evaluation design that had been used.
Through the reanalysis, using an approach to data analysis based on the concept of theory triangulation, a sizable number of additional instructional practices were identified. The findings from the reanalysis, as also noted in the original evaluation report, indicated that the four teachers used some but not all of the instructional practices recommended by the EPSS guide and NAEYC. Through the reanalysis, it was also observed that the teachers used some but not all of the instructional practices recommended in a highly structured, academically oriented approach to early education referred to as "direct instruction." Then, through the reanalysis of the EPSS data based on the teachers' own perspectives on their instructional practices, more instructional strategies were identified. In summary, the reanalysis provided substantial information on the instructional practices of the teachers. Fifty-five additional strategies were identified through the reanalysis that were not identified in the initial EPSS study. Using theory triangulation as an approach to data analysis, where three different perspectives were used to analyze the data, it was possible to clarify, illustrate and expand upon the description of the instructional practices of "successful kindergarten teachers" offered in the original evaluation report.

Setting and Context

The additional information gained through the reanalysis on the physical setting and the larger context in which the teachers used their instructional strategies was far less substantial than the information gained on the specific teaching strategies of the teachers. However, this information is of importance from the perspective of a
qualitative paradigm as it helps clarify the circumstances in which the instructional practices of the teachers took place.

The physical setting in which the instructional interactions between students and teachers took place consisted of pleasant, well organized classrooms. The number of students in the classrooms ranged from 14 to 22. During the observations the teacher was the only adult present in the room. The rooms were set up for various activities which allowed students to interact with the teacher, other children and educational materials. The walls of the room were covered with the children's art work and teacher-produced charts, graphs and pictures that were based on students' words, ideas and activities.

Within this setting all four teachers reported that they enjoyed working with kindergarten children and considered them to be capable students. They also reported supportive working relationships with the other kindergarten teachers at their school. Although not actually observed during the site visits to the schools, this support from professional peers was considered by the teachers to be an important aspect of their instructional program.

Three of the four teachers also noted that they did not view the EPSS program as an integral part of their instructional component but an administrative responsibility. As an example, the EPSS forms were something they completed to turn in when required but did not use them to monitor the progress of their students or plan instruction. On the other hand, it was observed that the EPSS pre- and post-testing of the children was something they completed which did have an impact on their approach to instruction. As kindergarten teachers administer the pre- and post-tests that are given to their students each year, they were very aware of the large number of
language needs students in their classrooms and as a result emphasized language development in their instruction.

In this setting and context, where experienced, well organized and prepared teachers emphasized language development, it was not surprising that the language needs students made sizable gains during the course of the school year. This information derived through the reanalysis of the EPSS data helps to further clarify and place in a larger context the instructional practices of the four "successful" kindergarten teachers.

Qualitative Data Analysis

Based on the Concept of Theory Triangulation

The primary purpose of this dissertation was to develop a method of qualitative data analysis based on the concept of theory triangulation. Within this study, theory triangulation was used as a conceptual framework to develop a systematic method for data analysis designed to accomplish the qualitative goal of presenting "multiple realities" (Bogdan & Biklen, 1982, p. 38). The conclusions offered in this section first address the goals of qualitative analysis identified in Chapter 3 and then review the conceptual framework developed for this approach to analysis.

Attaining the Goals of Qualitative Analysis

In Chapter 3 four goals were established for this approach to qualitative data analysis based on theory triangulation:

(a) present multiple realities, (b) provide thick description, and (c) create a holistic perspective, which together [a,b & c] can then (d) provide the basis for naturalistic generalization.
Within this study, the goal of presenting multiple realities was to "understand the subjects from their own point of view" (Bogdan & Biklen, 1982, p. 32) as well as describe and interpret a "scientific conception" of their reality from a theoretical point of view (Denzin, 1989, p. 9). In the reanalysis based on theory triangulation three perspectives were selected to analyze the data. The EPSS perspective and the perspective based on the Oregon Direct Instruction Model were selected to represent different theoretical points of view on the practices of the teachers. The teachers' perspectives were sought through the third step in the analysis of the data by inductively analyzing the data to present information on the instructional practices of the teachers representing their own points of view. In the application of this approach to data analysis multiple realities were presented by systematically presenting three different perspectives on the EPSS data.

The goal of presenting thick description focused on the building of thick description and "thick interpretation" (Denzin, 1989, p. 159). Where feasible, data displays were used to thicken descriptions and interpretations and shorten narrative accounts (Miles & Huberman, 1984, p. 21). By using three different perspectives to analyze the data, "thicker" descriptions and interpretations were offered in the reanalysis of the EPSS data than had been possible in the original EPSS evaluation. In the EPSS study data collection and analysis were limited by the use of the EPSS program guide as conceptual frameworks for both. In the reanalysis using a second and third perspective to analyze the data thickened both descriptions and interpretations. However, even fuller descriptions and interpretations would have been possible if data collection would have also been based on all three perspectives used in the reanalysis as suggested in Chapter Three. For example, in the inductive analysis
of the EPSS data from the teachers' perspective several strategies and practices were briefly mentioned by the teachers in the context of the EPSS program. If data collection had focused on the teachers' perspective as well as the EPSS perspective, additional data could have been collected on the strategies. This information would have then been available for analysis helping to further clarify and expand upon the instructional practices of the teachers from their own point of view.

Data displays were used almost exclusively to present descriptions in this study as this approach to analysis referred to earlier as "thick analysis" produced an extremely large amount of coded and categorized data. Data displays were used to "show the data and analysis in one place . . . and permit the direct use of the results [of the analysis] in the report" (Miles & Hoereman, 1984, p. 79). This approach to thick description focused on providing a multi-dimensional description by using multiple perspectives. This method of presenting the findings differs from the thick description traditionally found in qualitative studies which is considered the use of narrative examples and direct quotations to present qualitative data. Examples and quotations could be used very constructively in studies using theory triangulation as an approach to data analysis, but were not selected as primary methods for the presentation of data within this dissertation.

The goal of presenting a holistic perspective was to express a "holistic quality" (Diesing, 1971, p. 138) through the description and explanation of behavior "in relation to [the relevant aspects] of the whole system of which it is a part" (Watson-Gegeo & Gegeo, 1991, p. 8). This goal was one that was difficult to achieve in this application of the approach to data analysis based on theory triangulation. At one level a "holistic quality" on the teachers instructional strategies was presented.
through the use of multiple perspectives. However, at a systems level a much smaller amount of information was available to establish the relationship of the teachers' instructional strategies to the larger system of which they were a part. This situation was not due to a limitation in this approach to analysis but, as described above, a limitation in the data that were available for reanalysis. The data that were used in the reanalysis were limited by the initial conceptual framework in which it was originally gathered and by the focus taken in this dissertation on a subset of that information focusing on the instructional strategies of the four teachers from Oahu.

The goal of providing a basis for naturalistic generalizations was pursued through the presentation of multiple perspectives, a holistic quality, and thick descriptions and interpretations which will "provide a vicarious cognitive experience" (Stake, 1988, p. 260). The desired outcomes for this cognitive experience is "understanding, extensions of experience, and increase in conviction in that which is known" (Stake, 1978, p. 6). The goal stated for theory triangulation as an approach to qualitative data analysis was that the findings produced from multiple perspectives would enrich, expand upon, clarify and illustrate one another. Through the reanalysis of the EPSS data in an application of this approach to analysis for this dissertation a more complete and understandable picture of the instructional strategies of the four teachers was created.

**Extending the Concept of Triangulation**

The term triangulation is traditionally defined in the research literature as the use of multiple methods, data sources and/or observers in the collection of data. Within this dissertation, another form of triangulation called theory triangulation
(Denzin 1970, 1978, 1989) has been used as the conceptual framework to extend the concept of triangulation from data collection to data analysis. Theory triangulation, earlier defined as the use of multiple perspectives to interpret a single set of data, was used as the approach to analysis within this study designed to accomplish the qualitative goals of presenting multiple realities, producing thick description and interpretation, and creating a holistic perspective.

As noted in the introduction, strategies and techniques for qualitative data analysis have not been as well defined as other aspects of qualitative inquiry. This dissertation has presented theory triangulation as an approach to analysis which offers a systematic, well defined method of analyzing qualitative data. By systematically identifying the theories or perspectives through which the data that are collected will be interpreted, the researcher/evaluator clarifies for him/herself, as well as others, the direction that analysis will take.

Within this framework the actual approach to analysis can be inductive or deductive, emic or etic, qualitative and/or quantitative or any combination of the above as long as multiple perspectives are used. For example within this dissertation two deductive/etic approaches were used and one inductive/emic approach. Both the direct instruction and EPSS perspectives, represented deductive approaches to analysis providing outside perspectives while the teachers' perspective was based on an inductive approach to analysis representing an inside point of view. Other perspectives/theories could have also been applied to the same data set depending upon the outcomes sought by the researcher or evaluator.

The title of this dissertation refers to an "extension" of the concept of triangulation from data collection to data analysis which implies the use of
triangulation in both instances. In the actual application of this concept in this study, where the data collected in the original EPSS evaluation were reanalyzed, it was not possible to use theory triangulation in the collection of data. In the EPSS study data collection was limited by the use of the EPSS program guide as a conceptual framework. Ideally data collection would have also been based on all three perspectives used in the reanalysis.

It is suggested here, based on the findings and conclusions presented in this study, that using theory triangulation as an approach to both data collection and analysis leads to several positive outcomes. By selecting multiple perspectives for both, the researcher/evaluator must identify what he or she considers as the relevant aspects of a given phenomenon. This process clarifies the conceptual framework guiding both data collection and analysis. It also systematically creates a larger context than is possible through a single perspective which adds depth and a true-to-life quality to both description and interpretation. And it provides a framework for others to judge the credibility of a study through the identification of the theories or perspectives used in the collection and analysis of data.

In summary this dissertation has presented an approach to qualitative data analysis which offers a systematic and well defined method of analyzing qualitative data. In the application of this approach to analysis, findings were produced which accomplished the goals of qualitative inquiry and systematically described the instructional practices of successful kindergarten teachers. Based on this experience, the final conclusion offered within this study is that the extension of the concept of theory triangulation, from data collection to data analysis, produces an appropriate and viable strategy for the analysis of qualitative data.
EVALUATION DESIGN USED IN THE EPSS STUDY

DESIGN

SINGLE-CASE DATA COLLECTION AND ANALYSIS

CROSS-CASE ANALYSIS

CONDUCT 1st CASE STUDY

Write Individual Case Report

Draw Cross-Case Conclusions

Develop Recommendations

Write Cross-Case Report

SELECT CASES

Conduct 1st Case Study

Write Individual Case Report

Conduct 2nd Case Study

Write Individual Case Report

Conduct Remaining Case Studies

Write Individual Case Report

Design Data Collection Protocol

Define "process" operationally

Evaluation Question
Appendix B

Research Design Used in the Dissertation

<table>
<thead>
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<th>EPSS EVALUATION</th>
<th>DISSECRATION</th>
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<td><strong>Research Question:</strong></td>
<td>If the teachers were not following the practices outlined in the EPSS guide, were they &quot;using another pattern of instructional guidelines... If they were what were those guidelines?</td>
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<tr>
<td>&quot;What do successful teachers do with regard to the EPSS components of assessment, instruction, parent involvement, staff development and record keeping?&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Data Source:</strong></td>
<td>The four teachers from Oahu who took part in the EPSS study.</td>
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<td>Seven &quot;successful&quot; teachers selected from 600 kindergarten teachers statewide.</td>
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<td><strong>Data Collection:</strong></td>
<td>The data collected in the EPSS study.</td>
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<td>&quot;Multiple sources of evidence&quot; (Yin) which included observations, questionnaires and interviews.</td>
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<td><strong>Data Analysis:</strong></td>
<td>&quot;Theory triangulation&quot; (Denzin) was used as the conceptual framework for the approach to analysis, reviewing the data from multiple perspectives: 1) the EPSS program, 2) the Oregon Direct Instruction Model and 3) the teachers' own perspectives on their instructional strategies.</td>
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<td>&quot;Pattern matching&quot; (Yin) was used as the approach to data analysis, reviewing the data from the single perspective of the EPSS program.</td>
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Appendix C

OBSERVATION SUMMARY SCHOOL 03 5/11/90

The observation started at 11:30 as the bell rang ending the students' lunch period. Lorna and I were scheduled for this observation the last of four observations at school three.

After the bell rang, the students lined up outside the door. The teacher commented to the group, "I see Daniel is ready." She then let the students come into the classroom. The students, eleven boys and eight girls, filed into the room. They initially went to their tables where two books were already in place for each student. They either sat down at the table or found a place on the floor and started looking through the book that they had selected. A few minutes after they had entered the room the teacher told the class, "What is our kuleana? To read to ourselves as quietly as we can." By that time five students were sitting at one table, seven at the other table and seven were on the floor. All the students appeared to be reading their books, looking at the pictures and/or talking to each other quietly as they actively looked through the pages. The teacher circulated about the room looking at a magazine as she walked, apparently modeling the reading behavior that she expected from the students.

At approximately 11:40 she put down her magazine and started asking questions of the students. Several students were talking to each other but the overall noise level in the classroom was quite low. After a few more minutes of the students reading to themselves, the teacher turned the lights off in the room and announced to the class, "You have three
choices..." They were told that they could continue reading, watch Sesame Street, or work on their "reading lists." She then turned on the lights and the TV as the students moved to their next activity. One girl went to watch TV, four students remained at the tables reading and the rest of the students appeared either to go to the bookshelves to select other books or get in line to receive their reading lists from the teacher. After everyone had selected an activity the teacher moved about the room checking on the students. To one group of four students she told them, "let's read with your partner," then she asked one of them what she would be doing. She next asked two girls who were sitting on the floor, "Who is going to read first? Who is going to be the listener?"

A few minutes after she initiated the activity, the teacher turned off the lights again and said in a very quiet voice, "Boys and girls, I don't hear enough reading." She then turned the lights back on and went over to the TV and turned it off and said, "Focus, eyes this way." She then told several students by name that "I need your help," and then reminded the class of their three choices that they had for activities. Shortly after her reminder to the class, twelve students appeared to be reading books, three were working on their reading lists, two were watching TV and one student (Sam), the teacher had taken aside and was helping him with the words on his reading list. During the next ten minutes until 11:58 the students were responsible for selecting their own activity and were free to move about the room. It also appeared that they were able to talk to one another if their conversations were about the books that they were reading. The teacher during this time moved about the room helping students focus on the

This observation was done towards the end of the year and we had eliminated nap. Students are using this time for quiet relaxation and yet learning by choice through language.

- Reading alone or with a partner.
- Reading to find words from charts, books and/or eachother's work
- Conversation
- Listening
Appendix D

EPSS QUESTIONNAIRE--KINDERGARTEN
1989-90

Please respond to the questions that follow as completely as possible. Do not limit your responses to language arts; include information from your total classroom kindergarten program. Use the back of the sheets if more space is needed.

As with other information provided, your responses will be treated confidentially. Return the completed questionnaire in the enclosed envelope by April 13, 1990. Thank you for your assistance.

Assessment
1. What assessment techniques have you found to be effective in monitoring each child's progress?

2. What assessment instruments (besides PPVT-R) have you used to base your instruction?

Recordkeeping
1. Do your student record their own progress in learning? Please elaborate.

Instruction
1. How often do you offer children an opportunity to participate in small groups or to work individually in a solitary activity? Please elaborate.

2. When students have difficulty resolving a problem involving others, what are some ways you have found successful in helping them overcome such difficulty?
3. What are some ways you use assessment information (including PPVT-R and MKIDS) in planning and providing learning activities? (For example, how do you select vocabulary words?)

4. What is your favorite way of gathering information on a child's prior experience?

5. How do you use this information on a child's prior experience in planning and carrying out your instruction?

6. "Curiosity, motivation, and capacity for learning are innate in all children and need to be nurtured and built upon in designing instruction." How do you do this?

7. What do you like about teaching kindergarten children?

8. What are the challenges, frustrations, and satisfaction in teaching kindergarten?
Parent Involvement

1. Have you participated in the completion of the "School Needs Assessment on Parent Involvement"?

Yes____ No____ Uncertain____ Not Applicable____

2. How do you share kindergarten assessment information with the parents of children in your classroom? Please check all that are applicable.

____ Telephone Contacts
____ Share copies of test scores
____ Parent conferences
____ Notes or letters to parents
____ Other. Please specify ________________________________

3. How do you encourage parent involvement in your classroom? Please check all that are applicable.

____ Invite parents to participate in class activities with their child during class hours
____ Invite parents to assist on field trips
____ Ask parents to serve as resource speakers/demonstrators
____ Other. Please specify ________________________________

4. Please describe the existing orientation procedures for parents to the EPSS Program at your school and your part in it.

5. How do you provide parents with information on their children's educational progress, special accomplishments, and successes demonstrated in school? How often do you do this?
Staff Development
1. Please check the early childhood education staff development sessions you've participated in. Add others, if missing.

- Assertive Discipline
- Classroom Management and Discipline for New Teachers
- Direct Experiences and Active Learning
- Early Childhood Development
- Empowering Children to Learn
- EPSS Assessment Training
- EPSS Computer Lab Session
- EPSS Orientation
- EPSS Orientation and Assessment
- Individual School's Workshop
- Integrated Whole Language
- Language Arts Guide and Writing--Leila Naka
- Language Development
- Language Development and Literature, Keys to Reading Comprehension
- Language Development through Literature
- Learning through Literature--Dr. Jerome Harste
- Learning to Plan and Conduct a Parent Involvement Workshop
- Literacy with Language--Ka Hui Heluhelu
- New Kindergarten Teachers
- New Teacher's Workshop
- Oral Communication
- Oral Communication--Using Drama as a Tool for Learning
- Orientation of Parent Trainers
- Orientation for New K-1 Teachers
- Parent Involvement Workshops in "AIMS - Science and Math"
- Parent Involvement Workshops in "Art and the Young Child"
- Parent Involvement Workshops in "Gross Motor Development and PE"
- Parent Involvement Workshops --"Read Aloud"
- Parent Volunteer Session
- Self-Esteem and Self-Awareness
- State EPSS Conference
- Thinking Skills in Basic Education--Joyce Kohfeldt
- Using Literature for Writing
- Using Test Data for Planning Instructional Strategies
- Whole Language
- Whole Language--Dr. Virgie Binfold
- Whole Language--Yetta Goodman
- Whole Language Learning through Literature--Mary Ellen Giacobbe
- Writing across the Curriculum

OTHERS

2. How many years teaching experience, including this year, do you have in grades K-3? _____
How many in K? _____
3. How many college semester credit hours do you have in early childhood (K-3) education? 

4. Please list the degrees/diplomas you have earned and your major and minor fields of study for each degree/diploma.

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Appendix E

Teacher's Name ___________________________ Date ______________
Interviewers _____________________________ Time: Start _______ End_______

INTERVIEW QUESTIONS

RECORDKEEPING COMPONENT

1. What records do you keep that are helpful in your teaching (e.g., children's problems, student achievement, instruction reflecting the FPOs, and interaction with parents)?

INSTRUCTION COMPONENT

Classroom Management

1. I noticed that you (say what you observed) in monitoring student progress or completing the assignment. What are some other methods or techniques you have found useful?

2. What do you do when a student gives you an answer which may be O.K. but not quite the one you were looking for?
3. What have you found useful in helping students develop self-control?

**Instructional Delivery**

1. What do you do differently for needs children?

**PARENT INVOLVEMENT COMPONENT**

1. In what ways have you worked with the Parent/Community Networking Centers in the implementation of parent involvement activities?

2. How do you encourage parents to participate in workshops for parents, parent-teacher conferences and other parent involvement activities?
3. How do you work with parents of children who display social, emotional, and/or academic problems?

4. Can you share your experiences in how you’ve gone about making parents feel always welcome to your class?

5. What barriers have you encountered in implementing parent involvement activities? What have you found helpful in minimizing these barriers?
Appendix F

1989-90 EPSS CODING GUIDE

INSTRUCTION

Classroom Management

1.01 Prepare the environment for children that is conducive to learning through active exploration and interaction with adults, other children, and materials.

x1.01 Use highly structured, teacher-directed lessons.

1.02 Provide opportunities for children to choose from among activities that are teacher planned or children initiated.

x1.02 Direct all the activity, deciding what children will do and when; do most of the activity for the children. Children are expected to sit down, watch, be quiet, and listen or do paper-and-pencil tasks for inappropriately long periods of time. A major portion of time is spent passively sitting, listening, and waiting.

1.03 Allow children to work individually or in small groups most of the time.

x1.03 Large group, teacher directed instruction is used most of the time.

1.04 Provide concrete learning activities with materials and people relevant to their own life experiences.

x1.04 Workbooks, ditto sheets, flashcards, and other similarly structured abstract materials dominate the curriculum.

1.05 Move among groups and individuals to facilitate children's involvement with materials and activities by asking questions, offering suggestions, or adding more complex materials or ideas to a situation.

x1.05 Dominate the environment by talking to the whole group most of the time, telling children what to do.

1.06 Accept that there is often more than one right answer, recognizing that children learn from self-directed problem-solving and experimentation.

x1.06 Children are expected to respond correctly with one right answer. Rote memorization and drill are emphasized.

1.07 Facilitate the development of self-control in children by using positive guidance techniques such as modeling and encouraging expected behavior, redirecting children to a more acceptable activity, and setting clear limits.

x1.07 Spend a great deal of time enforcing rule, punishing unacceptable behavior, demeaning
children who misbehave, making children sit and be quiet, or refereeing disagreements.

1.08 Provide many opportunities to develop social skills such as cooperating, helping, negotiating, and talking with the person involved to solve interpersonal problems.

x1.08 Children work individually at desks or tables most of the time or listen to teacher directions in the total group.

1.09 Other

Instructional Delivery

Teachers will provide instruction which is developmental in nature, child-centered, experience-based, integrated, and inherently humane.

Developmental in Nature

1.11 Help children move up in the hierarchy of skills through concrete, semi-concrete and paper-pencil activities.

1.12 Use the child's prior experiences to support and facilitate new learnings.

1.13 Respond appropriately to children's performance based on the level of their past experiences, development, and needs.

1.14 Foster and extend the development of vicarious experiences.

1.15 Allow time for intuitive as well as logical problem-solving.

1.16 Other

x1.10 Workbooks, ditto sheets, flashcards, and other similarly structured abstract materials dominate the curriculum. Instruction stresses isolated skill development.

Child-Centered

1.21 Utilize the child's strengths to develop areas of needs (uses multi-modal strategies to teach language; gross-motor, drama; fine-motor, writing; visual, pictures; and auditory, listening to a story).

1.22 Use the child's unique interests and talents.

1.23 Adapt and adjust instruction to accommodate various modality strengths, including rates of learning.

1.24 Involve children in setting goals and choosing appropriate learning tasks.
Children are evaluated only against a predetermined measure, such as a standardized group norm or adult standard of behavior. All are expected to perform the same tasks and achieve the same narrowly defined, easily measured skills. Children are required to participate in all activities to obtain the teacher's approval, to obtain extrinsic rewards like stickers or privileges, or to avoid punishment.

Experience-Based
1.31 Foster learning situations which allow for experiencing, interacting, experimenting, and exploring.
1.32 Guide children to apply, validate, or practice the use of knowledge and skills in functional ways.
1.33 Facilitate the inquiry and discovery process.

Inherently Humane
1.51 Provide and develop avenues for a group support system for problem-solving and acceptance of feelings.
1.52 Provide a reasonable and consistent discipline process.
1.53 Model positive qualities in resolving and solving conflicts, e.g., respect, fairness, listening, appreciating.

1.54 Provide the child with a sense of "power" and confidence to accomplish.

1.55 Other

x1.50 Intervene to resolve disputes or enforce classrooms rules and schedules. Spend a great deal of time enforcing rules, punishing unacceptable behavior, demeaning children who misbehave, marking children sit and be quiet, or refereeing disagreements. Children's worth is measured by how well they conform to rigid expectations.

Language Development Through Meaningful Experience

1.61 Provide opportunities to listen and to read stories and poems.

1.62 Take children on field trips.

1.63 Use the process of children dictating stories.

1.64 Provide opportunities to see classroom charts and other print in use.

1.65 Encourage dramatic play and other experiences requiring communication.

1.66 Allow time for talking informally with other children and adults.

1.67 Encourage children to experiment with writing by drawing, copying, and inventing their own spelling.

1.68 Other

x1.60 Reading and writing instruction stresses isolated skill development such as recognizing single letters, reciting the alphabet song or being instructed in correct formation of letters on a printed line.
**Appendix G**

**EPSS PERSPECTIVE**

"Data Shell"

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Classroom Management

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Appendix H

Instructional Practices Recommended by EPSS and NAEYC

Not Observed as Primary Strategies of the Four Teachers

Classroom Management

- Provide opportunities for students to choose either teacher planned or child initiated activities (1.02)
- Provide concrete learning activities relevant to the children's lives (1.04)
- Accept that there is often more than one right answer, recognizing that children learn from self-directed problem-solving and experimentation (1.06)
- Provide many opportunities to develop social skills such as cooperating, helping and negotiating (1.08)

Instructional Delivery

- Help children move up a hierarchy of skills through concrete, semi-concrete & paper-pencil activities (1.11)
- Respond to children based on the level of their past experiences, development and needs (1.13)
- Foster the development of vicarious experience (1.14)
- Allow time for intuitive as well as logical problem solving (1.15)
- Utilize the child's strengths to develop areas of needs (1.21)
- Use the child's unique interests and talents (1.22)
- Adjust instruction to accommodate various strengths and rates of learning (1.23)
- Involve children in setting goals and choosing learning tasks (1.24)
- Guide children to use knowledge and skills in functional ways (1.32)
- Facilitate the inquiry and discovery process (1.33)
- Encourage the structuring of knowledge into meaningful patterns (1.41)
- Use knowledge from all content areas as a means to develop or experience concepts (1.43)
- Provide a group support system for problem solving and acceptance of feelings (1.51)
- Model positive qualities in resolving and solving conflicts (1.53)
- Provide the child with a sense of "power" and confidence (1.54)
Language Development

- Take children on field trips (1.62)
- Use the process of children dictating stories (1.63)
- Encourage children to experiment with writing by drawing, copying, and inventing their own spelling (1.67)

"Inappropriate" Practices [Not Observed]

- Workbooks, ditto sheets, and other abstract material dominate the curriculum (x1.04)
- Teacher dominates the environment by talking to the whole group most of the time (x1.05)
- Children are expected to respond with one right answer, drill and memorization are emphasized (x1.06)
- Teachers spend a great deal of time enforcing rules and punishing unacceptable behavior (x1.07)
- Children work individually most of the time (x1.08)
- Instruction stresses isolated skill development (x1.10)
- Children are required to participate to obtain teacher approval or rewards (x1.20)
- Instruction stresses worksheets, memorizing facts, watching demonstrations and drills (x1.30)
- Time is set aside to concentrate on separate content areas (x1.40)
- Teachers spend a great deal of time enforcing rules and punishing unacceptable behavior (x1.50)
- Reading and writing instruction stresses isolated skill development (x1.60)
Appendix I
DIRECT INSTRUCTION CODING GUIDE
SETTINGS FOR INSTRUCTION

Small Group Instruction

1.01 Small groups of three to eight children are used.

1.02 Children are grouped by skill levels.

1.03 The classroom is divided into at least three groups.

1.04 At least one paraprofessional is used to teach one of the groups, the classroom teacher teaches the second group, and the third group completes independent seatwork activities.

1.05 Instruction focuses on the teacher-child instructional interaction.

1.06 The teacher should be interacting positively, making at least twice as many positive comments, preferably four times as many, as negative comments. [From supervisor's guidebook p. 49]

1.07 The teacher asks questions to confirm the children's understanding of the tasks.

1.08 All of the children are required to respond to the questions [in unison].

1.09 Errors the children make are handled as a group correction.

1.10 All the children in the group must know the information presented in the task before the group is presented with a new task.

1.11 The teacher calls on individual children as a spot check of teaching after most group tasks. [From supervisor's guidebook p. 47]

1.12 The teacher focuses on lower performing children by giving them at least half of the individual terms. [From supervisor's guidebook p. 47]

1.13 Small-groups should be an enjoyable experience for the children.
Small Group Seating

1.14 The children should be seated in a semi-circle.

1.15 The children should sit as close to the teacher and as close to each other as possible.

1.16 The lowest performers in the group need to be seated directly in front of the teacher.

1.17 The teacher watches the mouths of low performers in the group in order to detect errors.

1.18 Children are within an arm’s length from the teacher so the teacher can touch the children to reinforce them or to gain their attention.

Large Group Instruction

1.21 Large group instruction is used to teach tasks that involve a lot of repetition: counting tasks, memorizing arithmetic facts, repeating statements, and repeating rules.

1.22 The children should be seated (a) in their chairs or desks as close together and as close to the teacher as possible or (b) in a small cluster on the floor.

1.23 The lower-performing children need to be seated directly in front of the teacher.

1.24 Individual turns are used in large-groups to check out the children’s performance as well as to provide a change of pace.

1.25 To keep the children interested the teacher should use rhythmic pacing, keep the lesson moving quickly, intersperse group and individual turns, and provide short “change ups” (e.g stand up).

1.26 If the teacher has a reinforcement system, points can be given in large group to individuals for working hard, for answering correctly and for succeeding at difficult tasks.

Materials

1.31 The DISTAR instructional programs in Reading, Arithmetic and Language are used.

1.32 The materials specify the tasks to be taught in small groups and give detailed procedures for teaching and monitoring the children’s performance.
1.33 The materials provide carefully sequenced tasks.

1.34 The materials structure the tasks in the most simplified form.

1.35 For each lesson hundreds of responses are required from the children.

1.36 Individual turns are specified that function as tests of individual progress.

1.37 Teacher's Guides describes teaching techniques and classroom procedures in detail.

TEACHER PRESENTATION SKILLS

Preparation

2.01 The teacher prepares for a lesson by focusing on new materials, and specific examples being used for the lesson.

2.02 The teacher knows the main goal of each task, where the children are likely to make errors and which specific teaching techniques need to be used.

Securing Attention

2.11 Before the teacher presents an instructional task, the children should be looking at the board, at the book, or at the teacher, depending on the task.

2.12 The teacher uses a few simple commands before beginning a lesson to secure attention: "Feet on the floor. Sit up big. Eyes up here."

2.13 The teacher scans the group to check that all children are paying attention before presenting the tasks.

Signals

2.21 The teacher uses a signal which requires the children to respond in unison as all the children in the groups are to respond together.

2.22 The three signals used in the DISTAR program are (a) the touch signal for presenting tasks that require students to look at a page, (b) the hand signal for oral tasks and (c) the clap signal for tasks that require students to make several different responses.
Corrections

2.31 Correct any errors the children make immediately, correcting the group instead of the child who made the error.

2.32 After an error is made, present the appropriate correction to the group, repeat the task and then return to the beginning of the format.

Pacing

2.41 The teacher moves quickly through the tasks.

2.42 In order to maintain a brisk rate the teacher must know the lesson well and be organized.

2.43 Not all tasks should be presented quickly. Allow additional time for difficult tasks.

2.44 Pacing also refers to variation in the presentation. Change-ups, challenges and games are used to maintain good motivation.

Reinforcement

2.51 Reinforcement, in its simplest terms, is praising the children for a good performance -- praise includes words and phrases, facial expressions and physical contact.

2.52 Praise specifically tells the children what behaviors the teacher liked. [From supervisor's guidebook p. 58]

2.53 Praise is given frequently. [From administrator's guidebook p. 27]

2.54 Reinforcement can also be provided through coupling praise with tangible reinforcers.

2.55 Classroom point systems can be used.

2.56 The reinforcers that children work for can be of any form as long as the children want to work for it.

2.57 A quota should be set so at least one-half of the children can meet the quota by working hard.

2.58 The teacher must hold to strict criterion if the point system is to be successful.
2.59 Point systems should be used to get learning going and should be used less and less as learning itself becomes rewarding.

2.60 Teachers should provide a short list of simple rules covering how points can be earned. There should be no more than four rules.

Weakening Undesired Behavior

2.61 If a child is hurting another child, the teacher should immediately and firmly stop the child.

2.62 To get appropriate behavior to occur the teacher should (a) ignore undesirable behavior and (b) reinforce appropriate behaviors in other children.

2.63 If a child persists in an undesirable behavior: (a) The teacher tells the child what will happen if he/she misbehaves. (b) If the child misbehaves, the child’s chair is turned around for two or three minutes and the child should be completely ignored while the lesson is continued with the rest of the group. (c) After two or three minutes, the child is brought back into the group. (d) When appropriate behavior occurs, the teacher praises the child.

CLASSROOM ORGANIZATION

Classroom Management [From supervisor’s guidebook p. 14]

3.01 Children know what is expected of them. Rules are established and enforced.

3.02 Children are met at the door as they enter in the morning and given personal attention.

3.03 Rules are set up for going to the bathroom, getting drinks and other classroom routines.

Scheduling

3.11 The classroom schedule provides a relatively stable routine.

3.12 The class is on schedule. [From supervisor’s guidebook p. 44]

3.13 Transitions between activities are fast and efficient. [From supervisor’s guidebook p. 44]

3.14 Academics are scheduled in the morning and include 30 minute blocks for groups in reading, arithmetic, language and related seatwork.
3.15 A 20 minute period is scheduled in the afternoon for "criterion teaching time" which may be with individual children needing tutoring or a group that didn't finish a task during the regularly scheduled morning period.

3.16 The schedule is posted in the classroom.

Classroom Setup

3.21 The classroom is clean and orderly. [From administrator's guidebook p. 29]

3.22 Children's artwork and papers are on the wall. [From administrator's guidebook p. 29]

3.23 Bulletin boards are current. [From administrator's guidebook p. 30]

3.24 Classrooms should be set up so that each subject (reading, language, arithmetic) is taught in a corner of the room.

3.25 The small groups are set up so that the children face the corner of the room.

3.26 Barriers such as bookshelves and screens are used to reduce the noise level that exists during small group instruction.

Seatwork [Worksheets]

3.31 Children should complete their seatwork independently. [From supervisor's guidebook p. 44]

3.32 Seatwork should not contain any tasks that are more advanced than the skill level that is being taught in small groups.

3.33 Teacher should present seatwork instructions to the entire classroom during opening activities.

3.34 Each child should have his/her own seat work folder.

3.35 When the seatwork is completed, the children should take the folder to a seatwork station to be checked later.

3.36 Have quiet activities or Centers set up for children who complete their work. [From supervisor's guidebook p. 14]
Appendix J

DIRECT INSTRUCTION

"Data Shell"

Type of Contact: Cross Case Summary  Site:  φ1 - φ4  

Completed By: ___________________________  Date: __________

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Seatwork [worksheets]

worksheets at φ1 - φ3
Appendix K

Instructional Practices

Recommended in the Oregon Direct Instruction Model

Not Observed as Primary Strategies of the Four Teachers

**Small Group Instruction**
- Group children by skill levels (1.02)
- When using 3 groups, teach one group, use an aide to teach the 2nd group and have the 3rd group complete independent seatwork (1.04)
- Focus small groups on the teacher-child instructional interaction (1.05)
- Require all of the children to respond to the questions in unison (1.08)
- Handle errors students make as a group correction (1.09)
- Present a new task to the group only after all the children know the proceeding task (1.10)
- Call on individuals as a spot check of teaching (1.11)
- Focus on lower performing students by giving them at least half of the individual turns (1.12)

**Small Group Seating**
- Seat children in a semi-circle (1.14)
- Seat children as close to the each other as possible (1.15)
- Seat the lowest performers in the group directly in front (1.16)
- Watch the mouths of low performers to detect errors (1.17)
- Seat children within arm’s length to be able to touch them for reinforcement or to gain their attention (1.18)

**Large Group Instruction**
- Use large group instruction to teach tasks that involve a lot of repetition (1.21)
- Seat lower-performing students directly in front (1.23)
- Use individual turns to check out the children’s performance (1.24)
- Use a reinforcement system to give points to individuals for working hard (1.26)

**Program Materials**
- Use the DISTAR programs in Reading, Arithmetic and Language (1.31)
- Use materials for teaching small groups which give detailed procedures (1.32)
Program Materials

- Use materials which give carefully sequenced tasks (1.33)
- Use materials which structure the task in the most simplified form (1.34)
- Use materials which require hundreds of responses from students for each lesson (1.35)
- Use materials which specify turns to test individual progress (1.36)
- Have a teacher’s guide which describes teaching techniques and classroom procedures in detail (1.37)

Signals

- Use signals which require the students to respond in unison (2.21)
- Use the three hand signals outlined in the DISTAR program (2.22)

Corrections

- Correct any error the children make immediately, correcting the group instead of the child who made the error (2.31)
- After an error is made, present the appropriate correction to the group, repeat the task and then return to the beginning of the format (2.32)

Reinforcement

- Couple praise with tangible reinforcers (2.54)
- Use a classroom point system (2.55)
- Use reinforcers that the children want to work for (2.56)
- Use a quota where at least one-half of the children can meet the quota by working hard (2.57)
- Hold to a strict criterion for earning points and/or rewards (2.58)
- Use the system less and less as learning itself becomes rewarding (2.59)
- Provide a short list of simple rules on how points are earned (2.60)

Weakening Undesired Behavior

- Ignore undesirable behavior and reinforce appropriate behavior in other children (2.62)
- If a child persists in an undesirable behavior first warn, then place in time out and ignore, continue with the rest of the group, and in 2 or 3 minutes bring the child back to the group. When appropriate behavior occurs, reinforce through praise (2.63)
Scheduling
- Schedule academics in the morning in 30 minute blocks (3.14)
- Schedule a 20 minute "criterion teaching time" in the afternoon to work with individual children or groups needing additional tutoring (3.15)
- Post the schedule on the wall (3.16)

Classroom Setup
- Set up the room so that reading, math, & language are taught in small groups in separate corners (3.24)
- Set up the small group areas so that the children face the corner (3.25)
- Use barriers such as bookshelves or screens to separate small group areas (3.26)

Seatwork [worksheets]
- Have children complete their seatwork [worksheets] independently (3.31)
- Use seatwork that is not more advanced than what is being taught to the group (3.32)
- Present seatwork instructions at the beginning of the lesson (3.33)
- Have a seatwork folder for each child (3.34)
- Have children take their seatwork to a seatwork station when they are finished (3.35)
- Have quiet activities or centers set up for children who complete their work (3.36)
Appendix L

TEACHERS' PERSPECTIVES - CODING GUIDE

CONDITIONS/CONSEQUENCES

1.01 Because a part of the EPSS Program has been class size reduction - have a small number of students in their classes (22 & under).

1.02 Because of the large number of language needs students identified through the EPSS testing - emphasize language development and vocabulary.

1.03 Because many parents work, have other children to watch, don't speak English or seem unwilling to volunteer - seldom have help from parents in the classroom.

1.04 Because they don't find the EPSS forms useful - don't use the EPSS forms as an integral part of their kindergarten program.

1.05 Because they receive support from the other kindergarten teachers at the school - work together with the other kindergarten teachers as a team.

INTERACTIONS

2.01 View the EPSS Program as an administrative responsibility rather than an integral part of the instructional program.

2.02 Are very supportive of kindergarten children, viewing them as capable and enjoyable to work with.

2.03 Do not use the parents as part of the instructional component in the classroom, but want them to help at home.

2.04 Have a good working relationship with other kindergarten teachers in the same school.

STRATEGIES - Classroom Management

3.01 Establish procedures for classroom routines that are used consistently and are easy for students to follow.

3.02 Review expectations involving classroom procedures and routines before beginning an activity.

3.03 Create opportunities for students to move from one activity to another within the context of a single lesson.
Instructional Strategies

3.10 Provide opportunities for "hands on" activities as a part of a total lesson, creating an experience related to the topic.

3.11 Use learning centers or activity centers for instructional purposes during the course of the school day.

3.12 Integrate lessons "vertically" by including more than one content area in a single lesson, e.g. language arts, math and science.

3.13 Integrate lessons "horizontally" by linking current activities to earlier lessons, e.g. the linking of the lesson to earlier experiences, the use of themes.

3.14 Orchestrate several related activities within a single lesson.

3.15 Use large group instruction as the first part of a "formal" lesson followed by small group or individual activities.

3.16 Use large group instruction for teacher-child instructional interactions.

3.17 Use small group instruction for child-child interactions.

3.18 Establish clear expectations for students in small group activities (make sure students know what to do and have something concrete to work on or something specific to produce).

Language Development

3.20 Emphasize language arts in lessons throughout the day.

3.21 Listen to the students in their efforts to use language.

3.22 Encourage students to respond and take part in lessons through numerous questions.

3.23 Use books and stories as part of a larger lesson.

3.24 Involve students in stories read in class by questions and discussions, creating activities related to the story and/or tying the story to student experiences.

3.30 Encourage students to read in class.

3.31 Provide students with many opportunities to see written language in use.
3.32 Use and display teacher produced charts, graphs, and pictures that are based on students' words, ideas and activities.

3.33 Value students' efforts at written language, by displaying their work in the classroom and/or organizing into booklets.

3.34 Encourage students to write by having them write their own sentences and/or writing sentences for them using their words.

3.35 Use the labeling of pictures as part of the emphasis on language development.

3.40 Emphasize vocabulary development in lessons.

3.41 Cover vocabulary in discussions that are part of the lessons.

3.42 Teach vocabulary words through their use in context rather than drill.
Appendix M
TEACHERS' PERSPECTIVE
"Data Shell"

Type of Contact: Cross Case Summary Site: 01 - 04
Completed By: ___________________________ Date: ________

<table>
<thead>
<tr>
<th>CONDITIONS/CONSEQUENCES</th>
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172
### EPSS RECORD FORM

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<th>Enrollment Date</th>
<th>District</th>
<th>School</th>
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<tbody>
<tr>
<td><strong>Counts/Names/Orders Numerals</strong></td>
<td><strong>Hears differences between pairs of similar sounds/words</strong></td>
<td><strong>Uses crayons/pencils/scissors with control</strong></td>
<td><strong>Names/describes common objects, actions and pictures</strong></td>
<td><strong>Manipulates body in space: tells, right, between, in front of, etc.</strong></td>
<td>Has a positive attitude*</td>
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<tr>
<td>0-10, 11-20, 21-30</td>
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<td>48</td>
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<tr>
<td><strong>Identifies and constructs sets from 0-10</strong></td>
<td><strong>Recalls/repeats oral information as series of 3, 4, 5, 6 digits</strong></td>
<td><strong>Copies models of geometric figures:</strong> $\bigcirc$, $\square$, $\triangle$, $\triangleleft$</td>
<td><strong>Expresses/dictates ideas in complete sentences using Standard English</strong></td>
<td><strong>Balances/hops on right/left foot</strong></td>
<td>Is developing self-confidence*</td>
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<tr>
<td>3, 4 &amp; 5</td>
<td>21-25</td>
<td>42-47</td>
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<td>75</td>
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<tr>
<td><strong>Understands meaning of more than, less than, the same as</strong></td>
<td><strong>Recalls/repeats a sentence of 5 or more words</strong></td>
<td><strong>Follows left to right and top to bottom progression in drawing and writing</strong></td>
<td><strong>Tells/recounts events of a story/experience in a sequence</strong></td>
<td><strong>Identifies/names upper/lower case letters of the alphabet</strong></td>
<td>Gallops/skips</td>
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<td>6, 7</td>
<td>26-30</td>
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<td>82</td>
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<td>94, 95</td>
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<tr>
<td><strong>Indicates ordinal succession: first, second, middle, last</strong></td>
<td><strong>Lists for a span of 10/15 minutes during group activity</strong></td>
<td><strong>Write first/last name from memory</strong></td>
<td><strong>Completes analogies (green/go, red/...)</strong></td>
<td><strong>Discriminates likenesses/differences in symbols, letters and words</strong></td>
<td>Throws/catches/bounces a ball</td>
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<td>8-11</td>
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<td>80-84</td>
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<td><strong>Orders objects: small to large or large to small</strong></td>
<td><strong>Draws person with head, trunk, legs, arms, features</strong></td>
<td><strong>Classifies objects into categories</strong></td>
<td><strong>Identifies/names missing element of picture</strong></td>
<td><strong>Walks beam forward/backward</strong></td>
<td>Participates in group activities*</td>
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<td>12</td>
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<td>53-60</td>
<td>67-69</td>
<td>87-88</td>
<td>98-99</td>
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<tr>
<td><strong>Determines half of a whole or small group (4 things)</strong></td>
<td><strong>Carries out a series of 2/3 simple oral directions</strong></td>
<td><strong>Reads upper/lower case letters/simple words using visual cues</strong></td>
<td><strong>Compares using likenesses/differences</strong></td>
<td><strong>Visualizes whole from given parts</strong></td>
<td>Jumps rope</td>
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<td>13</td>
<td>35-36</td>
<td>53-60</td>
<td>70-74</td>
<td>85-86, 89-90</td>
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<tr>
<td><strong>Identifies/names penny, nickel, dime, quarter</strong></td>
<td><strong>Identifies initial consonant sounds</strong></td>
<td><strong>Reads numerals 1-10 using visual cues:</strong> 1, 2, 3, 4, 5, 6, 7, 8, 9, 10*</td>
<td><strong>Interprets the main idea of a picture/story</strong></td>
<td><strong>Recalls/names objects/pictures by memory</strong></td>
<td>Uses time and materials wisely*</td>
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<td>62-63</td>
<td>91, 92, 93</td>
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<td><strong>Uses +/- facts through 5 with concrete aids w/o concrete aids</strong></td>
<td><strong>Identifies/forms rhyming words</strong></td>
<td><strong>Predict outcomes of picture/stories</strong></td>
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<td>Identifies/solves problems with assistance/independently*</td>
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Related to DOE Kindergarten Performance Expectations of the Foundation Program Objectives.

Numbers in the lower right corner represent items from the Missouri Kindergarten Inventory of Developmental Skills.

EI: Each child's progress can be recorded throughout the year but specifically in September, January and May. Kindergarten teachers should write the symbols / (initiated) and x (attained) in the boxes next to each learner expectation. A blank box means that a child has not initiated a learner expectation.
Appendix O

SCHOOL 04 CONTACT 02 OBSERVATION SUMMARY - 11/30/89

Yoshi and I arrived at the school approximately fifteen minutes early at 8:30 and were directed by the school principal to the teacher's classroom. The principal suggested that we go on in even though we were early. As we entered the room, we apologized to the teacher for being there ahead of schedule. She indicated that we should come in but also commented that "this is all a little nerve racking."

The class was working on a lesson on patterns when we first arrived. After we entered the room and found places to sit in the back, the teacher started a lesson at 8:35 on "bears." The teacher was seated on a small chair in front of the students. The students, 6 boys and 10 girls, were all closely bunched, within 8 to 10 feet of the teacher, sitting on the rug on the floor. Behind the teacher on the blackboard was listed the following information for that day,

- We have 6 boys
- We have 10 girls
- We have 4 more girls
- Today is Thursday, November 30, 1989
- Kupuna is coming
- It is a cloudy day.

Next to the teacher on her right on the floor was a small display board entitled "Fall or Autumn." On the board were taped cut-outs of fall pictures that were teacher made. They included pictures of a jack-o-lattern, a school bus, leaves, a bear, etc. Next to the teacher on her left was a book shelf filled with books that also served as a partition that blocked the student's view of the open door to the outside.

The lesson on "bears" started with the teacher and students reviewing a book that the students had created earlier on "real bears." The teacher holding the book so the students could see the pages, reviewed the authors names for each story on each page. "This is the story by Alan and ___?" and several students respond "Betty." The teacher then said, "That's right, we have one picture and one story. Okay and this is a story by Andy and Tyler." Again the students helped the teacher with the second name. After the teacher finished the review of the students stories she summarized, "Okay, so we were talking about bears yesterday, and we were talking about what bears do. The title says 'By Our Cooperating Groups in D-42' because we said when we work together, when we help each other it's called ____, what?" One student responded "working together" and another "cooperation" to which the teacher responded,
"cooperation, thank you," acknowledging the student who answered correctly. She then went on, "Okay yesterday we talked about what happens to bears in the fall. Remember we talked about the leaves changing, and the squirrels need to find nuts and hide them in a tree, and yesterday we were talking about bears and you were telling me they need to get fat, and they eat a lot of food so they could what Steve? What do they do? It's the big word we said," to which Steve responded, "Cooperation." The teacher then answered, "Bears need to cooperate also, but what is that big word that we talked about?" Several students responded "sleep." The teacher then asked, "What is the big word for sleep? What is that big word that Steve told us earlier? They ____?" Several students responded in unison, "Hibernate." The teacher then answered "Okay, thank you, we talked about that yesterday. Today I have a different story for you and it is called The Three Bears."

The next segment of the lesson started at approximately 8:40 and involved the teacher reading and discussing with the students the story of The Three Bears. The teacher started the discussion by asking the children what is this story about. Several students responded including one who said she had seen it on the Disney channel. The teacher then asked them how many had read the book. And again several students indicated they had read the book. The teacher then asked, "If we look at these three bears what can we call them?" A student then responded "a family." She went on and asked "How do you know it is a family Tony?" He responded "because I have a family." The teacher then asked "who is in your family?" and several students responded, "mom, dad, sister, brother." The teacher then asked, "Can you have a grandpa and a grandma in your family?" Several students responded all at the same time. The teacher replied, "Wait a minute I have too many people talking, remember your teacher is getting old, I have only two ears and I can't hear everyone." She then went on to ask if there was a grandpa and grandma in this story. A student responded no that there was a "papa, mama and baby bear." The teacher then said "Okay, let's see if what Andy told us was correct."

The teacher started the reading of the story by first covering the title and the author and then the title page. On the first pages she reviewed other words that the class had covered earlier in the fall in other lessons for example bark, trunk, and vine. When the word porridge came up in the story she asked the class, "What is a porridge?" One student responded, "It's soup," another, "it's soft and it's hot," another, "it's like baby food." The teacher then commented that it is hot and it is soft and it is like soup, but it is more like oatmeal to which another student remarked "It is oatmeal!"

During the teacher's reading of the story she encouraged the children to take part in her reading by pausing for them when she felt they might know the words that would follow. For example the
teacher said, "the little bear had a little bowl, the middle size bear had a middle size bowl, and the great big bear had a ____" to which the students responded "a big bowl."

As she read the story she encouraged the children to look at the pictures by asking questions about them. On one page she asked, "Look at the picture, what happened to the porridge? When one student responded "it has steam," she then stated, "It's steam so it tells us that the porridge is ___?" and the students responded "hot." Another question she asked was "Look at the picture, why do you suppose she is called Goldilocks?" to which one student responded "because she has golden hair." She thanked the student for his answer and then reminded him to "please raise your hand" and then commented "you are using your eyes very well, she does have golden hair, yellow like."

She also encouraged the students to anticipate what was going to happen next in the story by asking them questions. For example in one part of the story as Goldilocks looked into the house and saw that no one was in sight the teacher asked the students, "What do you think Goldilocks will do?" One student gave an answer. The teacher, after acknowledging the student, read on and then asked the other students later if the student who answered was correct. The students responded yes and then several of them elaborated on what had happened and what was going to happen next. The teacher encouraged this discussion and then stated, "Let's read and find out which one she does first, second and third." The teacher continued to encourage the students to take part in her reading of the story by pausing for their comments and asking questions of the students as she read. At 8:52 the teacher finished the story, the students clapped and the teacher thanked them for their applause.

The teacher then used a question and answer format to discuss and review the story. While this took place she continued to use the book as a prop pointing to pictures in the book and asking questions about them. She started the discussion by asking the students if they learned anything from the book. Shortly after the teacher asked her question, the school custodian who was cutting the hedges with an electric trimmer in the school yard, moved to the area directly outside the classroom window. Before the student she had called on to answer her question was able complete his answer the teacher interrupted. She first asked another student to stop talking out of turn, "Excuse me Andy, we have noise outside and Gene has a quiet voice and because we would like to hear what he has to say, because it is very important, I would really appreciate you listening as well. You had your turn, and we listened to you. Now it is your turn to listen to what the others have to say because they have very good ideas also." She then told the student she had called on, "Gene, it is really fine that you have a small voice, but we have noise outside, so can you raise your voice a little like the middle size bear did please?" After he completed his answer, she
restated it to the class in the form of a question. "Goldilocks ate all of the bears honey?" The other students responded with a loud "Porridge." The teacher then replied, "Sometimes we can add honey to the porridge also, did we find out if the three bears added honey to the porridge?" The students answered no. The teacher then asked, "Did the book tell us?" One student answered that in the picture it looked yellow. The teacher then said, "It looked yellow, so maybe the bears did add honey, so maybe Gene is correct. Thank you Gene." She then went on to ask other students, "What else did you learn from the story?" Five more students were given a chance to share what they had learned with the teacher following the same question and answer format she had used with the first student.

This portion of the lesson lasted five minutes and ended with an activity initiated by the teacher's question about one of the pictures in the book in which she asked the students, "What does the baby bear have?" When they answered a teddy bear she instructed them to stand up. Once the students were on their feet, they acted out the words to the rhyme that they recited with the teacher. It started with the words, "Teddy Bear, Teddy Bear, turn around. Teddy Bear, Teddy Bear touch the ground." During the activity the Teddy Bear, and the students, were asked to "... reach up high... wink one eye... bend their knees... ." The activity ended with the words "Teddy Bear, Teddy Bear, sit down please." The students then sat back down on the rug. The activity which was quite short appeared to be something that the students enjoyed and quite obviously had done before.

The next component of the lesson started at 8:57 with the teacher reminding the class that "We were talking about bears." Pointing to a picture of story book bears taped to a large piece of poster paper on the black board, she asked, "Are these bears, real bears or make believe bears?" After some discussion the students agreed that the bears she had pointed to were make believe bears. Before going on the teacher asked "How many of you agree these are make believe bears?" Thirteen students raised their hands and the teacher recorded the number on the board. The teacher then asked, "How many of you think these are real bears?" The three remaining students raised their hands and the teacher recorded the number three on the board. Next to the picture of "make believe bears" on the top of the poster paper was a drawing of a "real bear." She then pointed to the drawing of the real bear and asked the students how many of them agreed that this was a picture of a real bear. Eight student voted that it was a real bear. She then asked how many of them thought it was a picture of a make believe bear and two students raised their hands. The teacher then stated that "some of you didn't vote but eight people called this a real bear, so let's call this a real bear."

The teacher continued the lesson by asking the children "to remember what bears have" and "to think about the story Goldilocks and the
Three Bears." She reminded them that they had studied in an earlier book on real bears, which she showed to them as a reminder, "that there are some things that bears really do not do." She then asked them "What makes a bear real?" As she called on the students she asked the students to give their answers "in a sentence." The first student to answer said, "Bears have teeth." The teacher then wrote the student's answer on the poster paper. As she wrote, she asked for the students help in spelling the words, "Capital what letter?" As she wrote the letters, the students followed along spelling them out loud in unison. After they had finished the teacher said, "Andy gave us a very good sentence, Bears have teeth." Referring to the book she asked, "Is there something else here that all bears have?" She then called on another student and asked her also to give her answer in a sentence. The next sentence that was created with the help of several students was "Bears have fur and claws." The teacher then asked if this makes a real bear if they have teeth, fur and claws. The students responded yes and the teacher confirmed their answer with an "okay." She then went on to ask the students "In The Three Bears what makes the bears not real. What did they do or have that makes them not real like real bears?" One student answered that they stand up and after some discussion the teacher and the class decided that both make believe bears and real bears stand up. The next idea that came up was that the bears in The Three Bears slept in beds but real bears sleep in dens. The sentence that became the classes third sentence for their poster was "Bears sleep in dens, not in beds."

After they had completed this sentence the teacher said, "Okay give me one more and I will tell you what we are going to do next... Give me one more thing from this story (The Three Bears) that made these bears not real." After a brief discussion of what bears eat the final sentence for their poster became "Bears eat fish and berries, not porridge." This portion of the lesson ended at 9:10.

During the thirty-five minutes that the lesson on bears had taken to this point the students had remained on the floor on the rug. During the entire time the class as a whole had been very attentive and remained engrossed in the series of activities. Only on a few occasion did the teacher have to redirect the students behavior. With the students responding spontaneously to her questions on a couple of occasions, she had to remind some students to give others a chance to answer. Only on one occasion did she redirect a student back on task by stating "Okay Betty Ann, eyes on me!"

The next segment of the lesson on bears, which would take the rest of the period until 9:45, involved the students in pairs, creating a story on make believe bears. The activity consisted of the team of students cutting out a picture of the head and the body of a bear from a piece of paper, gluing them to a piece of construction paper, and then creating a story about the bear through a combination of their drawings and words.
The teacher started this portion of the lesson by stating, "Boys and girls, you did a really good job of finding out what bears are real or are make believe. And you did a very good job of working with a partner yesterday. We don't have very much time left and I know all of you would like to go out to recess. Steve told us a very good idea yesterday, that if you work with a partner your work gets done fast... Okay it is fun working with a partner and you know what, you are going to have a different partner today and you are going to have to solve another problem that I have. Let's count how many pictures I have of these (the picture of the head and the body of the bear that the students are to cut out)." The students counted eleven pieces of paper. The teacher then asked them to count how many students they had in the class and with her assistance they counted sixteen. She then asked them if she had enough pictures and then let the students come up with their "idea(s)" on what they needed to do. Several students came up with ideas on how they could use "cooperation." When she asked one student how do you cooperate with your partner, after the student responded she said, "You help your partner, I like that idea."

Next the teacher and students went over the directions for completing their stories on the make believe bears. The teacher started the directions by asking the students "what do you suppose you need to do with this (the picture of the bear on one piece of 8 x 11 paper and another larger piece of blank paper)?" The students by answering the teacher's questions went through the steps for completing the activity, first cutting out the bear's body and it's head, glueing them to the paper, making a story about a make believe bear, and putting together their pictures to make a book. After the directions were completed the teacher assigned students to a partner, instructed one of the partners to get a pencil and the glue, the other partner to get the crayons and the scissors and assigned them to an area at one of the four clusters of desks to do their work. She repeated several times in giving the instructions that the partners were to produce "one story and one picture." During the assignment of partners, one of the students asked a question about the directions and the teacher responded, "What did I say, listen" and then repeated the instructions. The students remained in their places on the floor until they were assigned a partner and then they went to their desks. By 9:20 all partners were at their assigned desks and working on their stories.

During the remainder of the period the students worked on their assignments. The teacher circulated about the desks throughout the activity assisting the students, monitoring their work, as well as encouraging them to stay on task. Examples of her comments to students as she moved about the classroom were, "Very good I like that... You took turns I like that... You found it together... I like that idea... You were helping each other... Okay, what do you do next ?... Remember if you don't finish your work you can't go out
to recess... You have to agree on the colors... don't forget to write your stories, also."

At one desk two students worked on a picture and a story about their bear having a birthday. The teacher asked them, "How does a bear have a birthday?" After they answered her question, she said, "That is a real make believe story... get your pencil and write about it... that is real good."

Whenever the students' pictures were complete enough to begin to illustrate their story, the teacher would assist them by writing out for them their ideas in two or three sentences. For example:

The bear is inside his den.  
It is having a birthday.  
The bear is making a cake.

In this story the students had placed their bear in a cave with a tree with berries on one side and a cake with candles on the other. Words that they had created were also below the bear, in this case one word was - Iokeisg. The teacher encouraged the students in their efforts to use letters to create words on their pictures as she circulated about the room. Another example from another picture was - Ahdepych.

By the end of the period all the students had finished cutting out the pictures and gluing them on to the sheets of construction paper. When the bell rang the teacher turned out the lights. After everyone was sitting quietly in their chairs they were excused. Students in order to leave had to have "finished their work" at least having their bear glued on the construction paper and their names on the paper. Two students had to be reminded to put their names on their paper so that they could leave for recess. They had managed only to complete the cutting and gluing portion of the activity. Most teams of students had completed their stories.

During the last half of the observation, approximately thirty-five minutes, the students worked primarily from their desks. As had been the case in the first half of the activity, they were permitted to get up and leave the activity whenever they needed to go to the side of the room to use the kleenex without asking the teacher. Otherwise they were expected to remain seated. During the activity in which they worked in pairs, they were allowed to talk to each other as they created their stories. During the first thirty-five minutes of the observation they were allowed to speak only in response to the teacher's questions or when they spontaneously spoke out in response to the lesson.

The observation which started ten minutes early at 8:35, ended as scheduled at 9:45.
Appendix P

SCHOOL 03 CONTACT 05 OBSERVATION SUMMARY - 5/11/90

The observation started at 11:30 as the bell rang ending the students' lunch period. Lorna and I were scheduled for this observation the last of four observations at school three.

After the bell rang, the students lined up outside the door. The teacher commented to the group, "I see Daniel is ready." She then let the students come into the classroom. The students, eleven boys and eight girls, filed into the room. They initially went to their tables where two books were already in place for each student. They either sat down at the table or found a place on the floor and started looking through the book that they had selected. A few minutes after they had entered the room the teacher told the class, "What is our kuleana? To read to ourselves as quietly as we can." By that time five students were sitting at one table, seven at the other table and seven were on the floor. All the students appeared to be reading their books, looking at the pictures and/or talking to each other quietly as they actively looked through the pages. The teacher circulated about the room looking at a magazine as she walked, apparently modeling the reading behavior that she expected from the students.

At approximately 11:40 she put down her magazine and started asking questions of the students. Several students were talking to each other but the overall noise level in the classroom was quite low. After a few more minutes of the students reading to themselves, the teacher turned the lights off in the room and announced to the class, "You have three choices..." They were told that they could continue reading, watch Sesame Street, or work on their "reading lists." She then turned on the lights and the TV as the students moved to their next activity. One girl went to watch TV, four students remained at the tables reading and the rest of the students appeared either to go to the bookshelves to select other books or get in line to receive their reading lists from the teacher. After everyone had selected an activity the teacher moved about the room checking on the students. To one group of four students she told them, "let's read with your partner," then she asked one of them what she would be doing. She next asked two girls who were sitting on the floor, "Who is going to read first? Who is going to be the listener?"

A few minutes after she initiated the activity, the teacher turned off the lights again and said in a very quiet voice, "Boys and girls, I don't hear enough reading." She then turned the lights back on and went over to the TV and turned it off and said, "Focus, eyes this way." She then told several students by name that "I need your help," and then reminded the class of their three choices that
they had for activities. Shortly after her reminder to the class, twelve students appeared to be reading books, three were working on their reading lists, two were watching TV and one student (Sam), the teacher had taken aside and was helping him with the words on his reading list. During the next ten minutes until 11:58 the students were responsible for selecting their own activity and were free to move about the room. It also appeared that they were able to talk to one another if their conversations were about the books that they were reading. The teacher during this time moved about the room helping students focus on the task that they were working on. Several students were working on their reading lists which consisted of the students adding words to a list of words that they had written on a piece of paper. After they added the words to the list, they would take it to the teacher and if they could read the words to her, she would place a "check" next to the words that they had read.

At 11:58 the teacher turned the lights off and those students who were reading or working on their lists, put their things away. These students then joined the other students who were watching TV. One student remained at the table working in a workbook on a counting exercise on the numbers 16 and 18. The Sesame Street show the students were watching covered a brief segment on Hawaii. The teacher asked the students, "Who are they talking about? Who lives in Hawaii?" and the students answered, "Us". She asked them a few more questions on the show and then at 12:00 turned off the TV and sent the students out of the room for recess.

At 12:15 recess was over and the students lined up outside to come into the room. The teacher turned off the light and the students filed in. As they entered the room most of them stopped talking. They went to their seats at the tables and put their heads down for what appeared to be rest time. The teacher commented to the class, "I see Carlton is ready, I see..." as the students settled into their seats. The students talked to each other quietly as the teacher moved about the room preparing for the next lesson. After several minutes, over half of the students no longer had their heads down and talked to each other quietly while the other students rested. At approximately 12:20 the teacher called the students by tables to sit on the rug on the floor in the front of the room. One student without being instructed to do so, turned on the light.

The teacher then introduced the activity which the students would work on next, completing the Mother's Day gift they had been working on that week. The students reacted to the announcement that the teacher had done her part by putting together the booklets by clapping and the students started to talk excitedly about the activity. The teacher waited and then told the class, "I see Alex waiting, thank you Alice..." and finally after the other students calmed down, "Thank you boys and girls." The teacher started the instructions for completing the cover of their Mother's Day booklet.
by talking to the students about the three dimensional objects they had completed earlier. As she talked she used one of the student's clay sculpture that was at the art center as an example. As she talked she asked the students questions about the differences between the clay sculpture and the picture on the front of a book that she used to illustrate two dimensional art. She then explained that the cover that they would be creating, of their mothers face, would be a combination of a two dimensional and three dimensional picture.

At 12:25 the teacher started to demonstrate for the students the steps that they would follow in finishing their projects. She first showed them how to cut off the edges of a piece of paper to create an oval for the face. She had taped a 8x11 sheet of paper on the board earlier and next showed them how they were to glue the oval on to the paper as the second step in the activity. She then explained how they were to add eyes, eye lashes, lips and hair, illustrating for them the steps they were to complete using the example on the board. As the teacher covered the steps she used words like "pair" and "pupils" as she gave the instructions. Through out the instructions the students participated in the discussion without raising their hands, spontaneously responding to the teacher's questions and remarks. When the students got too far off task the teacher asked them, "Can I have you focusing now?"

The teacher encouraged the students to offer their ideas on how to complete the activity as the teacher created the sample for them to follow. For example the teacher asked one student for her ideas on how to make the eye lashes. The student asked if she could show how it was done. The teacher told her no, telling her, "let me see if I can follow your directions." She then gave another student a chance to explain her way of making eyelashes and then asked the class, "How do Rhonda's eyebrows differ from Alice's?" The students offered answers and in the process covered words like longer, wider and narrow. The teacher continued the instructions giving the students ideas on using straight or curly hair and giving them options for the nose and mouth, using either crayons or paper and paste.

By 12:35 the teacher had completed the review of the instructions and told the students, "I am going to give you your books..." The booklets the teacher handed out to the students included things that the students had written and drawn for their mothers. The students moved to the tables after receiving the booklets and the pieces of paper for the face from the teacher and selecting the strips of paper for the hair. The teacher reminded them that they were only to take initially, the paper for the face and the hair and to make sure to check to see if their book was right side up before starting on the cover. By 12:40 everyone had received their booklet and the teacher had started to move about the classroom helping the students get started with the activity.
By 12:45 all the students were actively involved except one (Sam) who was writing the letter 'O' on the board. The teacher called him to his seat and helped him get started on his booklet gluing the oval on to the page. She next showed the class one of the students work as an example of what they were to do, saying "She has a nice beginning, she has her face here and is adding her hair now." During the activity the students appeared to be free to move about the room and talk to each other as they worked.

One of the students who was having difficulty staying on task received additional assistance from the teacher as she first helped him decide where he should put the glue on the paper. He indicated that he should place it in a oval around the edge of the paper. After the teacher left him he put a lot of additional glue in the middle of the paper and then glued it onto the cover. The teacher returned to him telling him, "Okay, we got started." She then looked at his work and realized that he hadn't followed the instructions they had discussed. He then told her, "I put too much glue," and she responded, "That's okay, what's next?" He indicated, "The eyes" and the teacher then moved on to another student.

As the teacher moved about the room examples of her comments to students were, "You're doing fine," "Isn't that nice, mommy does have straight hair," "Nice... you are curling her hair," and "I see some nice beginnings boys and girls." The students continued to work on their projects and at 12:50 all of the students except one were on task. He had left his table and was hiding in the corner behind the art center. The teacher noticed that he wasn't at his seat and after finding him, returned with him to his seat and worked with him on his cover. She then continued to move about the room helping students and keeping those who needed extra guidance on task.

By 12:55 all of the students were on task including those who had been off task earlier. A little later two of the students were playing with a pair of scissors and were reprimanded by the teacher before being sent back to their seats to get back to work. At 1:00 all of the students were finishing up their projects except one. He had completed his a few minutes earlier and was working with a set of construction blocks on the rug on the floor.

The observation, which ended at 1:00, covered the thirty minutes after lunch from 11:30 to 12:00 and the forty-five minutes after recess from 12:15 to 1:00.
References


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National Association for the Education of Young Children. (1986, September). Position statement on developmentally appropriate practices in programs for 4- and 5-year olds. *Young Children, 41*(6), 20-29.


