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NAME OF AUTHOR/*NOM DE L'AUTEUR* WILLIAM BRADLEY BRIDGE

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THE UNIVERSITY OF ALBERTA

TEACHER BEHAVIOR IN TWO INSTRUCTIONAL SETTINGS

by

 WILLIAM BRADLEY BLOCKSIDGE

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled Teacher Behavior in Two Instructional Settings

submitted by William Bradley Blocksidge

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Supervisor

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ABSTRACT

The proliferation of outdoor education programs in Alberta and the increasing importance of a residential camp as part of many of these programs has resulted in a situation where different settings are being utilized in the education of many students. As yet, little is known of the effects of these programs on teachers and students. The literature on outdoor education is replete with statements regarding the benefits of these programs to both teachers and students, but there is little or no support in terms of research. The purpose of this study was to investigate whether certain aspects of teacher behavior changed as a result of a residential camp setting and to examine whether any changes which did occur remained constant following the camp. The framework used for the study was that provided by ecological psychology which suggests that settings coerce similar behavior from their inhabitants.

The instrument used in detecting possible changes was a High Inference instrument with eight categories divided into three general sections. Teacher management categories consisted of: Withitness, the ability of the teacher to communicate to students that he/she knows what is occurring in the classroom; Overlappingness, the degree to which the teacher can deal with more than one issue at the same time; Smoothness, the ability of the teacher to maintain a smooth flow of academic events; and Momentum, the ability of the teacher to maintain the pace of the lesson without undue slowing. Teacher instructional categories were: Clarity, the ability of the teacher

to be clear, precise and accurate when presenting material; and Persuasiveness, the ability of the teacher to motivate students. Teacher interpersonal categories were: Warmth, the ability of the teacher to convey evidence of caring or prizing to the student; and Empathy, the ability of the teacher to understand and reflect the student's feelings.

The instrument was used by two observers during the months of May and June, 1977 for four half-hour periods in each of three settings, pre-camp classroom, during camp, and post-camp classroom. Observations were made of three teachers. Inter-rater reliabilities were carried out in both classroom and camp settings. Additional information was obtained through use of a short questionnaire which provided teacher presage data, self-ratings on the instrument, and indications of changes in student-teacher relationships.

Results indicated that significant changes occurred in behavior of all teachers in all settings. Teacher A showed significant increases in all ratings but Empathy which decreased significantly during camp. After the camp he decreased significantly in all ratings but Warmth and Empathy. Teacher B decreased significantly in ratings on Overlappingness and Momentum during the camp and showed significant decrease in Smoothness following the camp. Teacher C showed significant increases in ratings of Overlappingness, Persuasiveness, and Warmth with a significant decrease in Clarity during the camp. He decreased significantly in ratings of Persuasiveness and Warmth and showed a significant increase in Clarity following the camp.

Teachers B and C generally tended to rate themselves lower than did observers on the instrument, while Teacher A's self-ratings were generally higher than mean observer ratings in the pre-camp setting.

All teachers indicated they felt that positive changes had occurred in student-teacher relationships and that they had revealed new facets of themselves to their students during the camp.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

STATEMENT OF THE PROBLEM

Introduction

"The school is not education; we must learn to think of it as merely the headquarters from which learning activities are directed" (Sharp, 1952, p. 20).

Outdoor education in all its many forms has experienced tremendous growth in the United States (Smith, 1960; Smith, 1968) and Canada (Passmore, 1972) in the last three decades. More recently, numerous programs have proliferated throughout Alberta (Risdon, 1974) and many of these have been programs which included overnight, weekend, or residential components. Along with the growth in number of residential camp programs, and partly to justify them, have come many statements about the educational value of such programs. Almost any writer whose major emphasis is outdoor education will list a number of benefits to be gained from embarking upon a residential outdoor education program. As Hammerman (1964) has stated:

> Educators make many claims for outdoor education. They claim that subject matter is enriched and made more meaningful through firsthand experience in the out-of-doors. They claim that a high degree of pupil-teacher rapport is established in the resident outdoor school situation. They claim that principles of democracy are better learned by living them in the total-living situation. They claim that significant changes occur in the social structure of a group while living at the resident outdoor school. (p. 89).

These claims have not changed significantly over time. In 1972, Passmore reported several values of outdoor education as

expressed by "many regional and provincial committees" (p. 14). He suggests that the following should be considered by teachers as goals for programs construction.

Outdoor education can:

Offer meaningful learning situations which should be an important part of every child's education.

Provide an opportunity for direct learning experiences which can enrich the school curriculum in all subject areas.

Stimulate students' curiosity and permit them to discover the excitement and satisfaction of learning out-of-doors.

Enable pupils to develop new interests and skills which can provide a basis for a lifetime of creative living.

Help them discover the important relationship that can and should exist between classroom instruction and outdoor learning.

Give them a much broader knowledge of ecological principles and their relationship to our quality of life.

Provide excellent opportunities to examine through personal experience many of our present social and cultural values.

Help pupils to develop a better understanding of themselves, their teachers, and their total education. (p. 14).

The number of outdoor education programs in Alberta has increased considerably since Passmore reported in 1972 that participation in secondary schools "is estimated at about 40%" (p. 51) and that "excellent progress has also been made in the elementary schools - about half of them are involved in some kind of outdoor program" (p. 51). The impetus and interest of teachers in this aspect of education has increased to the extent that, in March of 1976, a new specialist council of the Alberta Teachers' Association was created.

Along with the increase in number of programs has come a concomitant increase in one aspect of outdoor education - the residential camp experience. These residential camps vary in length from one overnight camp to week-long stays, usually in some relatively underdeveloped rural areas.

It is obvious that both teachers and students enjoy the experience but little is known of the reasons for the proliferation of programs. A cursory look at stated benefits of outdoor education and the sharp rise in occurrence of programs indicates that something different must be occurring.

Statement of the Problem

One of the benefits of outdoor education programs often mentioned by writers is an improvement in student-teacher relationships.

> The teacher, in addition to directing the learning activities, is eating three meals a day with his pupils, relaxing with them, helping them to bed - in a word, living with them. Furthermore, the total-living situation enables the classroom teacher to observe his pupils under a variety of conditions in which he would not ordinarily see them. Under these circumstances an entirely new pupil-teacher relationship is bound to be established. Deeper understanding and mutual appreciation are some of the positive outcomes. (Hammerman and Hammerman, 1973, p. 83).

Conrad points out that, "when teacher and class move out-of-doors, there comes a marked increase in friendliness reflected back and forth across the barrier" (1973, p. 355). He goes on to state that a large change in atmosphere occurs as a result of the change in relationship.

> Indoor education is noticeably improved when groups and classes begin circulating out of doors, or setting out on trips together. The contact with reality brings a wholesome spirit to circulate all through the school. Relations between teachers and students show a healthy improvement. (p. 356).

As well, other writers state improved student-teacher relationships as a benefit of outdoor education (Sharp, 1952; Stack, 1960; Gabrielsen and Holtzer, 1965; Mand, 1967; Vogan, 1970; Passmore, 1972; Smith et al., 1972; Masters, 1973).

One of the possible ways to investigate this oft-stated claim for improved student-teacher relationships might be to look at some categories of teacher behavior prior to and during a camp experience. If there is a change in student-teacher relationship, it may be reflected in these categories.

Another factor often mentioned in the literature is the need to use specific approaches in methodology in an outdoor setting. Sharp (1952) has stated that "Outdoor education is a method of teaching as well as a principle of using the out-of-doors wherever possible" (p. 20). He goes on to point out that "Some teachers take to outdoor teaching quite naturally. Others learn the new technique gradually" (p. 21). Knapp (1972) in his article challenging certain widely held beliefs in outdoor education admits "the outdoors does permit certain methods, which have been described as problem-solving, discovery, and inquiry, to function at a maximum" (p. 118). Miller (1972) agrees and says "Outdoor education can change the methods which teachers use to help youngsters learn" (p. 104).

What is it that produces this purported change? Does the fact that the teacher and student are in a different setting, away from the usual effect of desks in rows, books, pencils, blackboards and chalk, and into a more unstructured educational environment have any effect? Does the teacher's behavior really change in adapting to these new contextual influences?

Purpose of the Study

The purpose of this study was to investigate whether changes in teacher behavior do occur in a residential camp setting, and to attempt to describe those changes. The instrument used to detect a possible change was a High Inference instrument developed by a group of researchers at the University of Alberta.

Specific questions investigated included the following:

1. Does teacher behavior in a residential camp setting as measured by the High Inference instrument differ from a regular classroom setting?
2. If a change in behavior as measured by the High Inference instrument does occur, does it remain constant after the residential camp experience?
3. How do teachers' self-ratings on the High Inference instrument compare to observer ratings?
4. Do the teachers perceive any changes in their relationships with their students as a result of the residential camp experience?

Definitions

Outdoor education: Definitions of outdoor education abound in the literature. Sharp (1952) has defined outdoor education as "a method of teaching, as well as a principle of using the out-of-doors wherever possible" (p. 20). This does not mean artificially utilizing the out-of-doors for all or even most teaching for he states:

> There are some things, however, that can be learned better in the classroom. It is merely a matter of selection. For often, we find that the three essentials - teacher, learner, and the presence of the thing to be learned - operate very effectively under the open sky. It is out-of-doors that the greatest integration occurs in the process of learning: Sooner or later everything relates itself to everything else. (p. 20).

Mand (1967) agrees with Sharp but goes on to point out that outdoor education utilizes the total curriculum. "There is no limit to the choice of ordinary curriculum subjects applied to the outdoors other than the energy, confidence and imagination of the teacher" (p. 28).

He goes on to say:

> It should be underscored that outdoor education is not a new subject in the curriculum or in competition with the traditional material. It is simply a method of instruction just as the newly conceived modern media approach of television and other visual aid materials represent another new approach to improving instruction. (p. 28).

Gabrielsen and Holtzer (1965) define outdoor education as "learning that takes place away from the classroom, usually in the out-of-doors, in subjects related to the resources of nature" (p. 12). This is a somewhat narrower definition which represents some of the thinking of proponents of outdoor education during the last decade.

More recently, however, outdoor education has tended to be viewed as education in and for the outdoors. (Smith, 1970; Passmore, 1972; Donaldson and Donaldson, 1972). Smith (1972) identifies five components of outdoor education as follows:

> 1. Outdoor-related classroom activities and units of study using available outdoor materials and resources to extend learning opportunities. Weather study, bird and animal life, erosion and pollution, art from outdoor scenes, aquariums, rock collections are examples of the use of outdoor life and resources in the regular elementary and secondary programs.
>
> 2. The use of the school site and other outdoor areas as laboratories to extend the classroom. Field trips and outdoor projects are used to help achieve classroom objectives and affect learnings often impossible in the bounds of four walls....
>
> 3. Resident outdoor schools, in which students and their teachers use camp settings for learning opportunities achieved best in a camp community and outdoor laboratory. This is one of the most sensational and effective forms of outdoor education and offers extensive opportunities for learning centering around social living, healthful living, work experiences, outdoor skills and interests, and the application of many of the school's educational objectives and purposes. On school time and as a regular part of the curriculum, the outdoor school serves to motivate and vitalize learning and contributes greatly to the development of good human relationships, better understanding between students and teachers, and opportunities for democratic living....
>
> 4. The teaching of outdoor skills, usually in physical education, recreation and club programs, and the development of attitudes and appreciations through many activities in the curriculum are important aspects of outdoor education....
>
> 5. Work-learn experiences in outdoor areas for secondary school youth, such as the improvement of the land, forest and game management, construction of facilities, conservation projects to improve the natural environment, and learning outdoor skills and interests are challenging and effective forms of outdoor education. (pp. 30, 31).

The definition of outdoor education as used in this study is "the utilization of the out-of-doors as a laboratory for learning" (Hammerman and Hammerman, 1973, p. 9).

Outdoor education program: A series of outdoor experiences organized in one or more classes of a school.

Residential camp: A location away from home and school where students obtain structured learning experiences related to the school curriculum for periods of time longer than two consecutive days and including at least one overnight experience either in dormitories or tents.

High Inference instrument: The instrument used in this study was developed by a group of researchers at the University of Alberta during 1976 and consists of eight high inference scales. As a high inference instrument, it requires subjective observer judgment in contrast to low inference instruments which usually require compilation of objective observable characteristics. The eight categories of the instrument are:

1. Withitness: The ability of the teacher to communicate to students that he/she is aware of what is happening in the classroom with regard to deviant behavior, and his/her ability to deal with deviant behavior.
2. Overlappingness: The ability of the teacher to attend to more than one issue at a time during instruction.
3. Smoothness: The ability of the teacher to maintain a smooth flow of academic events or to prevent jerkiness during the flow of the lesson.

4. Momentum: The ability of the teacher to maintain the pace of the lesson without undue slowing.
5. Clarity: The ability of the teacher to be clear and precise when presenting material and giving instructions.
6. Persuasiveness: The ability of the teacher to motivate students to do work related to the objectives of the lesson.
7. Warmth: The ability of the teacher to communicate evidence of caring, prizing, or valuing of the student.
8. Empathy: The ability of the teacher to communicate understanding of student problems and feelings.

Procedure

The instrument was used for a total of six hours of observation time for each of the three teachers involved in the study. The six hours of time per teacher were divided into three segments of two hours each. One segment occurred prior to the residential camp experience, a second two-hour segment was coded during the camp experience and the third segment occurred two weeks following the residential camp. The data were analyzed to see if changes in the categories had occurred. To check for researcher bias, inter-rater reliability sessions in both environments were conducted.

Each teacher was also asked to fill out a data sheet which gathered information on training and experience relevant to outdoor education. As well, each teacher was asked to rate himself-herself

on the eight variables of the instrument and these were compared to mean observer ratings.

Assumptions

The following assumptions were made with regard to the study.

1. The presence of the coders had no effect on the behavior patterns of students and teachers.
2. It is possible to get accurate samples of the variables involved in the High Inference instrument used in the study.
3. The samples of behavior coded were representative of the teachers' behavior in the environment in which coding occurred. i.e. Behaviors coded at the residential camp were representative of all instructional behaviors which occurred at the camp for each teacher observed.

Limitations of the Study

1. The sample of teachers and lessons was small.
2. Random selection of teachers was not used.
3. No attempt was made to standardize lessons to control for environmental factors or content.
4. Classroom observations occurred during the latter stages of the school year and may not have been representative.

The limitations of this study dictate that the findings will not be generalizable beyond the teachers concerned.

Significance of the Study

If the conclusions of this study indicate differences in teacher behavior between the classroom setting and residential camp, further research may be needed to determine the causes of these differences and whether they are positively or negatively related to student attitudes and/or achievement. This follows the descriptive-correlational-experimental loop research paradigm outlined by Rosenshine and Furst (1973) in which descriptive studies can be used to identify important variables which can then be correlated with measures of student achievement and attitudes. These correlational studies are then used as a base for experimental studies which control and manipulate the variables considered to be important.

Should this study find differences in behavior occurring or continuing in the classroom after the residential camp experiences, this would indicate a need for studies which investigate the nature of this change and its effect on pupil attitudes and achievement. If it can be shown that behavior changes do occur, teacher training institutions may need to implement new programs or make adjustments to existing programs in view of the steadily increasing number of outdoor education programs. If the outdoor setting makes different demands on teachers in terms of their behavior, it may be feasible to provide opportunities for prospective teachers to acquire knowledge of these demands prior to their involvement in actual teaching situations.

Summary

This chapter attempted to provide a brief introduction to the problem and a discussion of the phenomenon of outdoor education. The statement of the problem mentioned several claims or statements about outdoor education as found in the literature and was followed by the purpose of the study which was to attempt to discover evidence of some of these claims. Some terms were defined and the limitations of the study stated.

Chapter II presents the theoretical background for the study and reviews related literature and research. Ecological psychology as a theory of environmental or contextual influence on behavior is discussed and outdoor education as a different set of contextual influences is presented. Finally, the chapter concludes with a justification of the eight categories of teacher behavior chosen for this study.

CHAPTER II

REVIEW OF LITERATURE AND RELATED RESEARCH

Introduction

Research on contextual or environmental variables which might influence teacher behavior has been very limited. Dunkin and Biddle (1974) have stated in their recommendations for researchers, "Of all variables that might be studied in research on teaching, context variables are least often considered" (p. 439). They suggest two reasons for this lack of research. First, "the study of context variation nearly always means that the sample of classrooms for which we collect data must be increased in size, which in turn increases the cost of the study" (p. 439). The second, perhaps even more important reason, is "teaching phenomena are normally presumed to be invariant as we go from context to context" (p. 439). While many reviewers of research in teaching have reported a plethora of studies using different criteria to examine teaching behaviors (Dunkin and Biddle, 1974; Rosenshine and Furst, 1973; Rosenshine, 1971; Good, Biddle and Brophy, 1975), few have reported studies designed to examine the teacher's behavior in different settings or contexts.

This chapter attempts to outline the work on the effect of environments on behavior, specifically the work done by ecological psychologists such as Barker and Gump (1964), Olszewski and Doyle (1976), and Doyle (1977). Current statements on outdoor education as

a different context for teaching and learning are then examined and an overview of current research in outdoor education is given. The remainder of the chapter is devoted to justification of the categories of the observational instrument used in the study.

Ecological Psychology - The Neglected Contribution

For over twenty years a group of psychologists at the University of Kansas led by Barker have been developing the theory of ecological psychology. The development of this theory began as an attempt to apply ecological concepts to the study of psychology. Ecology, as defined by Sells (1969) is "the interaction of organisms and populations with the embedding environment, which supports, influences, and determines limits of structure and function for the life that exist within it" (p. 15). Barker, dissatisfied with the directions psychology was taking, began to see that the ecological concept of environmental interaction was applicable to the study of psychology and that interactions between individuals and the environment were important.

In his studies of children in a small town, Barker observed that behavior of these children did not remain constant as the child's environment varied (Gump, 1974a). Current psychological theories did not explain or consider this phenomenon. As Barker (1969) states:

> One might think that in the course of its necessary concern with stimuli, psychology would have become informed about the human environment. But this is not the case. Psychology

> necessarily attended to those elements of the environment that are useful in probing its focal phenomena, namely, the behavior-relevant circuitry within the skins of its subjects, within psychology's black box. Psychology knows much about the physical properties and dimensions of the environment probes it uses - of distal objects of perception, for example, and of energy changes at receptor surfaces. But the problem is that, in the course of its investigations, it has excised these environmental elements from the contexts in which they normally occur.... (p. 32).

He goes on to assert that:

> In view of psychology's concern with such dismantled fragments of the environment, it is not surprising that general conceptions of the environment occupy a minor place in the science, and that these conceptions provide a distorted view of intact settings in which behavior occurs. The most common notion, which can hardly be called a theory, is that the non-behavioral ecological environment of man is an unstructured, probabilistic, and largely passive arena within which man behaves according to the programming he carries about inside him. (p. 32).
>
> However, this is not the case and, in fact, quite the opposite is true.
>
> Although these assertions are true within the limited environmental perspective of the science of psychology, they are not true within a wider perspective. It is the universal testimony of the physical and biological sciences that the ecological environment circumjacent to man is organized and patterned in such stable, improbable ways that it is, in fact, one task of these sciences to explore, describe, and account for the patternings. (p. 32).

Based on this line of reasoning, the Kansas group began to investigate and "serious scientific attention was turned to questions of how this environment might be described, how its coupling to individual behavior might be understood" (Gump, 1974a, p. 268). This attention resulted in extensive study and data-collecting of a town and its inhabitants and the environmental milieu in which they played, worked, and lived.

As a result of examining this "stream of behavior", several important concepts central to studying the individuals and their environments have arisen. Perhaps the most important of these is the concept of the behavior setting. Wright et al. (1959) describes the behavior setting as having several characteristics. One of these is "a set of environmental raw materials for behavior" (p. 189). These may be physical such as bases and a backstop on a baseball field, or social such as the players in the game, or both. Another characteristic is the "set of possibilities for action that are seen by the generality of persons living in the community..." (p. 189). Thus the behavior setting of the classroom, to some extent, dictates the types of activities which will happen there by the mere fact that people in the setting engage in those activities. This does not suggest that other, more abnormal, actions might occur by individuals in a behavior setting, only that the setting acts as a backdrop for these actions. Another point made by Wright et al. (1951) is that "behavior settings are coercive" (p. 190). They tend to exert pressure on the human inhabitants to behave in certain ways. This pressure does not preclude actions by individuals which are not normal to the situation, since each individual perceives these settings differently. It does, however, exert a force toward uniform behavior.

Each individual within a behavior setting also brings with him a set of needs, goals, abilities, and experiences which, together with the behavior setting form a "psychological habitat" (Wright et al., p. 190). This naturally occurring life space includes conditions in both the person and the behavior setting. "The coercive effect of a behavior setting, then is indirect. It stems only from the fact that every setting tends to bring about certain psychological habitats rather than others" (Wright et al., 1951, p. 190).

As an example, if all students are required to leave baseball equipment outside the classroom, it follows that the behavior setting of the classroom mitigates against the playing of baseball within the classroom boundaries. On the other hand, if the playground includes a ball diamond, then the behavior setting, by the very fact that it has bases and a backstop, encourages its inhabitants to play baseball.

Gump (1974a) calls this relationship between the milieu of the behavior setting and the behavior it encourages "synomorphic" (p. 269). In other words, they are similar in structure thus insuring a "fit" between the behavior and the environment.

> The concept of synomorphy helps describe the relation of the individual to physical aspects of habitat, to grounds, enclosures, and facilities. The individual is embedded in milieu-and-behavior environment. The pupil experiences not just playground but playgrounding. (p. 269).

As Barker sees the synomorphy of setting and behavior, there are several sources. Physical forces (such as doors) are coercive

of behavior or suggestive (paths make walking easier). Psychological processes (rain limits certain types of outdoor activity while encouraging others), and "physiognomic perception (smooth open places invite children's running, protected areas encourage social grouping)" (p. 270) also affect this synomorphy. Factors other than milieu also operate to determine the synomorphy. The imitation tendency (to copy observed behavior), social forces (behavior is influenced by such things as authority figures, peer pressure, rewards and punishments), learning (many behavior patterns occur as a result of being taught proper norms), person or setting selection (certain settings are selected by certain persons while, in other cases, the setting may select certain persons), and even behavior can create synomorphy by "molding the milieu (cars parked on the curbless street gradually encroach upon the grassy area; the area becomes hard packed and brown, thus encouraging an off-street parking space)" (p. 270).

Bronfenbrenner (1976) conceptualizes the possible educational environments as a "nested arrangement of structures, each contained within the next" (p. 5). To him there are several levels of environment to be considered. The smallest level is that of the micro-system which Bronfenbrenner describes as:

> an immediate setting containing the learner (e.g., home, day care center, classroom, etc.). A setting is defined as a place in which the occupants engage in particular roles (e.g parent, teacher, pupil, etc.) for particular periods of time. The factors of place, time, activity, and role constitute the elements of a setting (p. 5).

A second level which comprises the first and is broader in perspective is the meso-system which comprises the interrelations among the major settings containing the learner at a particular point in his or her life.

> Thus, for an American elementary school child, the meso-system typically encompasses interactions among family, school, peer group, television; for some children, it might include as well church, camp, or work place... In sum, stated succinctly, the meso-system is the system of micro-systems. (p. 6).

The next broader level is that of the exo-system,

> an extension of the meso-system embracing the concrete social structures, both formal and informal, that impinge upon or encompass the immediate settings containing the learner and thereby, influence and even determine or delimit what goes on there. (p. 6).

Finally, Bronfenbrenner describes the macro-systems which

> are the over-arching institutions of the culture or sub-culture such as the economic, social, educational, legal and political systems, of which local micro-, meso-, and exo-systems are the concrete manifestations.

This method of viewing the environment gives a somewhat broader perspective than Barker's and enables a more encompassing view of the possible subject-environment or environment-subject impacts. Barker's view of the behavior setting and his subsequent identification of behavior units or "segments of the stream of behavior" (1963, p. 1), provide a useful starting point for the examination of the effects of the environment on behavior.

Behavior units are seen by Barker as having boundaries which "occur at those points of the behavior stream where changes occur independently of the operations of tbe investigator" (p. 1). A

child working on a math problem is one example of a behavior unit. These are natural, self-generated instances within the stream of behavior, and can be studies or counted independently by an investigator.

This contextual setting, then, as seen by the ecological psychologist, has great potential for affecting the behavior of the inhabitants of the setting. In the same way that the availability of food affects the behavior and population of animals in a natural setting, so do the contextual influences of human settings affect the people operating within them.

Need for Naturalistic Research

These conceptualizations of ecological psychology have pointed out a need for research into real life situations. As Sells (1969) points out,

> Observations of behavior in its natural setting, without interference or manipulation by the investigator, not only frees psychology from insurmountable limitations due to experimental exclusion of complicating, but ecologically highly relevant variables; it also reduces the equally inescapable difficulty of iatrogenic influences on results, that is, the built-in effects of the experimenter's hypotheses expressed in his particular designs and procedures. (p. 25).

In 1951, Wright et al. made an early appeal for naturalistic research.

> Our knowledge of what pupils are likely to do under certain conditions and our devices for measuring what they are able or disposed to do leave us at this late date with a need for knowledge of their actual behavior and their actual conditions of life at school. This need can only be met by recording and analysis of field observations. (1951, p. 187).

Wright et al. (1951) suggest three reasons for this approach. First, research in naturally occurring settings should enable a better understanding of the relationships between personality formation and life in everyday situations. Second, this approach should widen current theories of social behavior and, third, it will provide a practical application of knowledge for teacher preparation programs (p. 188). This third reason will become the basis for later thought and research by Doyle (1977a, 1977b, 1978).

Barker (1965), himself, though thoroughly convinced of the usefulness of the naturalistic approach, identifies two necessary types of research in ecological psychology, each of which is important, but generates data of different significance for psychologists.

The first of these data-generating models proposed by Barker is one in which the psychologist acts as a tranducer (See Fig. 1) or encoder of the information he sees as an observer. Here the investigator only records and categorizes data resulting in a system which "produces data which denote a world the psychologist did not make in any respect; they signal behavior and its conditions, in situ" (1965, p. 2)/ These are called tranducer data systems and produce what Barker refers to as T data.

The second data-generating system is different in that the investigator not only acts as transducer, but also as an operator of conditions which then generate data to be analysed (See Fig. 2). This type of system is dominated by the operator or investigator in

the sense that he tries to create observable conditions in order to verify a hypothesis. In this way, the operator controls or regulates the situation he is studying. These systems are called operator data systems and produce O data.

The types of data generated by these two systems are considered by Barker to be mutually exclusive in that "the primary task of the psychologist as transducer is carefully to preserve phenomena that the psychologist as operator carefully alters, namely, psychologist-free units" (1965, p. 4). Likewise, O data "refer to phenomena that psychologists as transducers explicitly exclude, namely, psychological units arranged in accordance with the curiosities of the psychologist" (1965, p. 4). Barker then goes on to point that T data is at least as important as O data since it speaks about the real world and is not an artificially contrived situation.

In looking at both ecological psychology and behavioral psychology in an attempt to indicate common areas, Barker has summarized the need for naturalistic studies.

> The eco-behavioral science that will answer the pressing questions society faces today requires, above all, concepts and theories appropriate to the phenomena involved. But these will not arise de novo; they will be grounded upon empirical data concerning the patterns of events within the psychologist-free settings where people live their lives. (1969, p. 37).

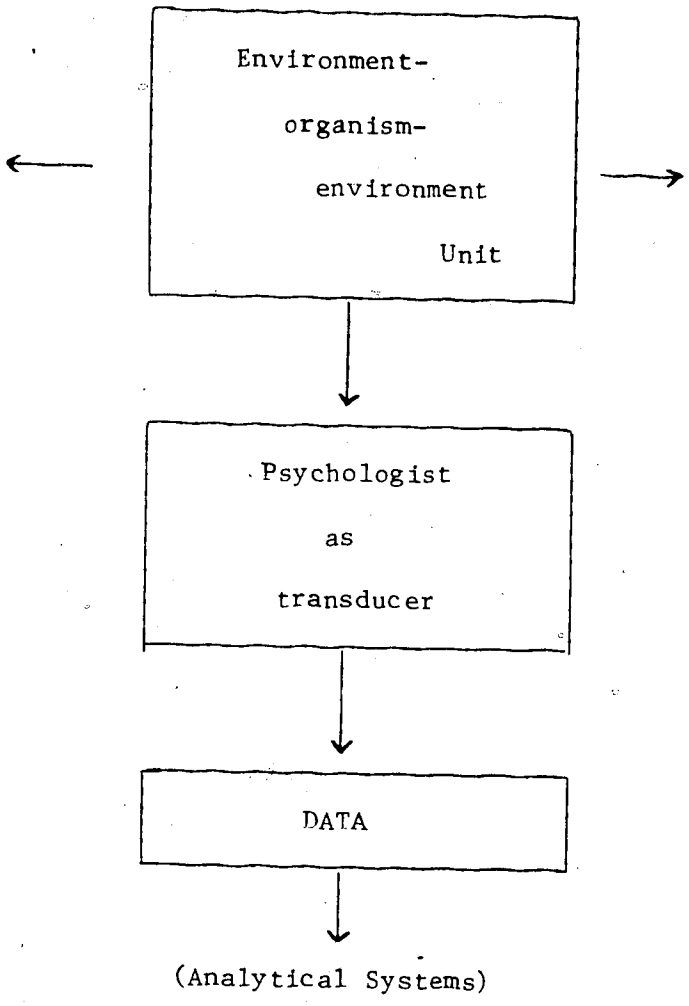

Fig. I. Data-generating system: Type 1, psychologist as transducer (Adapted from Barker, 1965).

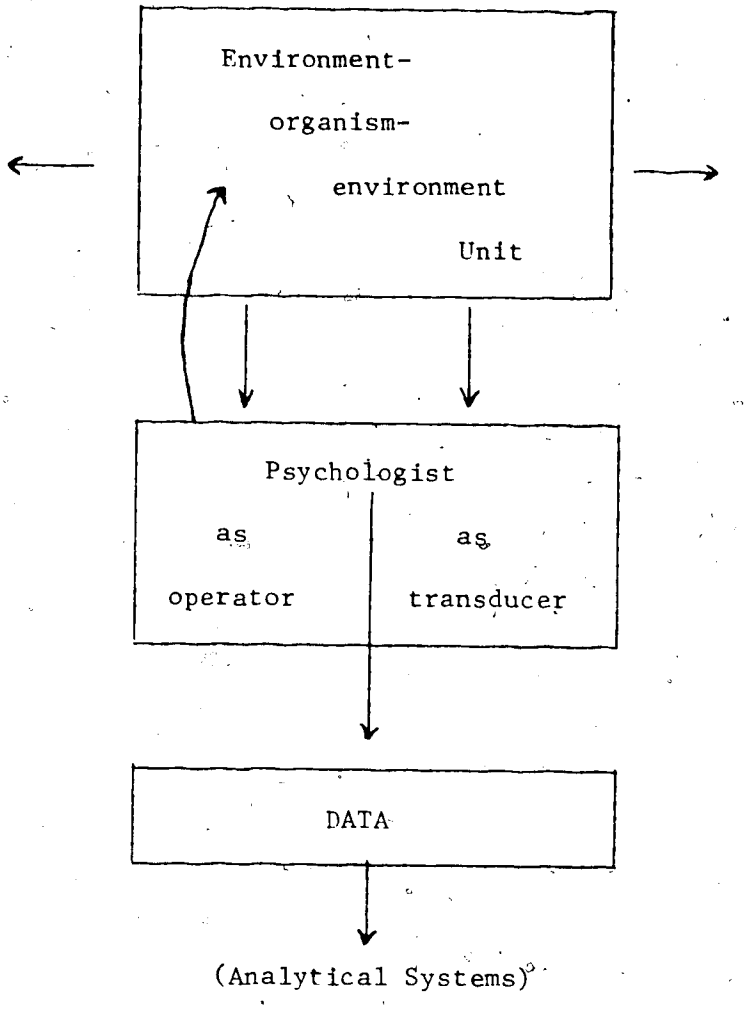

Fig. II. Data-generating system: Type 2, psychologist as operator and transducer (Adapted from Barker, 1965).

Recently, there has been a call for naturalistic research from other writers, researchers, and reviewers. Brandt (1972) lists three deficiencies of research which his book is designed to help overcome:

> the relative lack of carefully conducted, rigorously designed, empirical studies of human functioning in ordinary settings to complement the present heavy emphasis on laboratory research ...; ... the paucity of research replication...; ... observation as the primary approach to naturalistic research... (v, vi).

Many of the recommendations for needed research presented by Dunkin and Biddle (1974) are concerned with encouraging research in naturalistic contexts. Moos (1976) echoes Willems' (1969) call for needed naturalistic research by listing several important advantages to be gained through naturalistic research.

Willems (1969), while advocating naturalistic research, does not see an exact dichotomy between naturalistic and experimental methods of research. Rather, he sees the two types of research as ranging upon two independent dimensions (See Fig. 3). The first of these describes "the degree of the investigator's influence upon, or manipulation of, the antecedent conditions of the behavior studied" (p. 46). This, of course, may vary from low to high depending on the investigator's desires. The second dimension identified by Willems describes "the degree to which units are imposed by the investigator upon the behavior studied" (p. 46). Again the range is from low to high. It is Willem's contention that naturalistic and experimental studies can be identified within this two-dimensional space by the use of these two variables.

He goes on to say that studies which are usually referred to as naturalistic will occur at the low end of either or both of these scales and that studies of this type are advantageous for several reasons. First, they allow us to study individual behavioral achievements in the real world. They also provide us with a distribution of psychology's phenomena in the natural state, allowing us to observe the exact number of instances of a particular behavior over time as it actually happens. Another advantage is that they allow us to study the behavioral repertoires of humans over periods of time, thus allowing classification of behaviors both in number and over time. Where it is unethical or potentially dangerous to experiment, naturalistic research may provide a necessary option. Finally, naturalistic research provides for an accumulation of data which may be used by other investigators for different purposes at different times than was originally intended. In other words, production of a data bank is possible.

Naturalistic research into the area of teacher behavior has been encouraged recently by Doyle (1978). In his words, it is possible and desirable to "study effectiveness directly by trying to identify the most effective teachers or teaching acts that appear spontaneously in available classrooms" (p. 2). This naturalistic descriptive research is necessary to provide documentation of things as they are, to identify "useful solutions that have emerged spontaneously among practitioners" (p. 6), and to provide a "descriptive theory of classroom phenomena" (p. 7) such that it

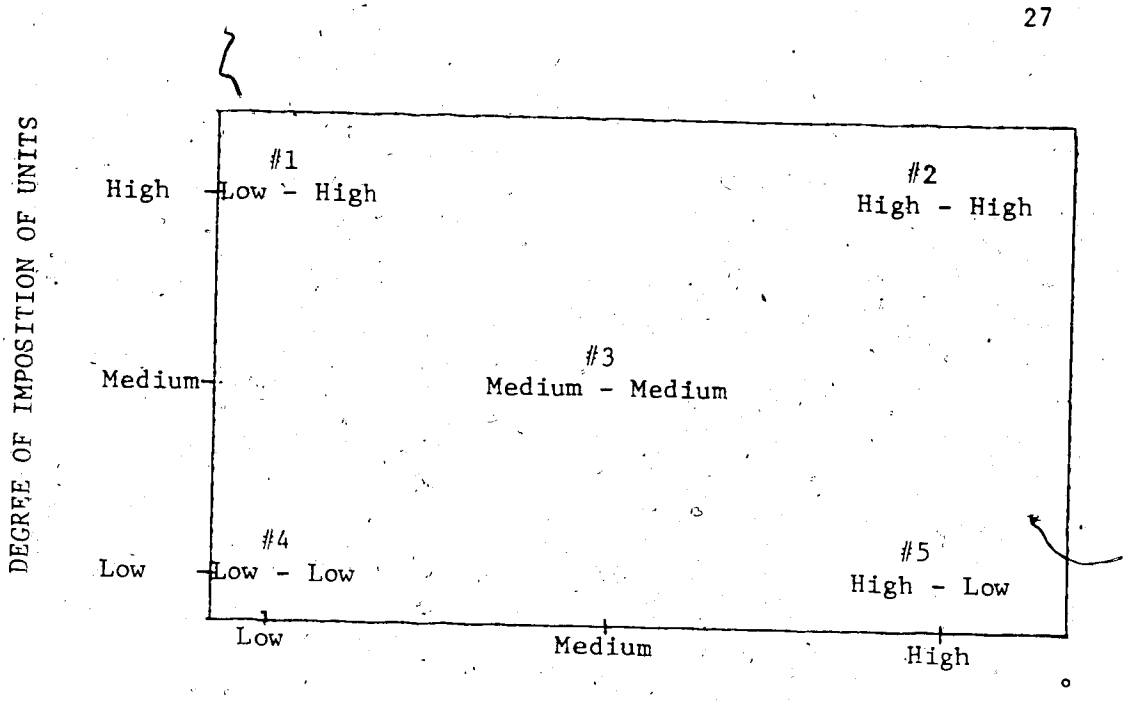

Fig. III. Two-dimensional space characterizing psychological research (Adapted from Willems, 1969).

mediates a connection between research and practice. Doyle would have us look into classrooms to judge the interactions, identify effective teaching behaviors and use these to build a descriptive theory of teaching which can then be used to train prospective teachers.

In their recent attempt to examine the efficacy of the Dunkin and Biddle (1974) model of research on teaching, Eggert et al. (1976), after reviewing the literature, listed as their first design criterion that, "research should be undertaken in a naturalistic setting." (p. 17). This was restated by Muttart (1977) "An essential ingredient of any investigation of teaching and learning should be the observation of teaching activities" (p. vi). He also states: "research on teaching should be carried out in naturalistic settings" (p. vii).

It would seem then, from the above, naturalistic examination of both pupil and teacher behavior has not only been happening for some time, but is being encouraged for many valid reasons.

Naturalistic Research into Ecological Effects

Ecological psychology can provide a basis for using naturalistic research to examine various aspects of behavior in real-life settings and some theorists claim that environmental or contextual settings may affect behavior. What research, then, has been done in this area?

Studies on Students. Perhaps the most classic example is the work of Gump and Barker (1964) in which they found that student participation in extra-curricular classes varied according to the size of the school. "The average number of extra-curricular activities and kinds of activities in which students engaged during their four-year high school careers was twice as great in the small as in the large schools" (p. 196). The students in small schools also reported stronger feelings of responsibility and more pressure to become involved. In a later report of this research, Gump (1974b) summarized the results of the studies on different sized high schools.

> (1) The larger the school the more variety of instruction offered. However it takes an average of a 100 per cent increase in school size to yield a 17 percent increase in variety. Furthermore, there is no clear evidence that the greater the variety in the large school results in the average student experiencing a broader range of academic classes.
>
> (2) Students in the larger school participate in a few more out-of-class activities than do students in the small school. On the other hand, students in the smaller school participate in more different kinds of settings.
>
> (3) Students in the small school participate in over double the number of performances of students in the large school. The chance to be essential, to gain the active or demanding role in activity comes much more often to the average small school student.
>
> (4) Students in the smaller schools experience different kinds of satisfaction in their out-of-class activity than do large school students. The small school yields satisfactions of developing competence, of meeting challenges, of close cooperation with peers. The large school yields more satisfactions which are vicarious and which are connected to being a part of an imposing institution.

> (5) Students from the small schools report more sense of responsibility to their school's affairs. Furthermore, academically marginal students in the large school are particularly lacking in reported sense of obligation to their school's enterprises. They appear to be social "outsiders". The marginal students in the small school, however, are just as likely to reveal responsibility attitudes as are the regular students. (p. 284).

The explanation given for these findings is that the small schools had approximately the same number of potential activities as the larger school, but fewer students to occupy the positions. Therefore, the environment created pressure on these students to occupy more roles per student than their counterparts in larger schools. This gave them a greater feeling of belonging.

Larson (1949) as reported by Willems (1964) provides support for this idea. He found, in his study of high school students' activities and relations to peers, that a higher percentage of students in small schools (as compared to medium and large schools) found it easier to make friends. Higher percentages of students in the larger schools reported little engagement in activities and stated that they experienced difficulty in becoming involved in activities. Willems also discusses an early study by Dowe (1934) on the effects of kindergarten size and seating position upon student participation in discussion. He reports:

> Among 433 children in groups ranging in size from 15 to 46, she found that when the number of comments by individual children during a controlled discussion period was tabulated, increasing size led to (a) decreased total amount of discussion, (b) decreased per cent of children who participated, and (c) decreased average amount of participation per child. Dowe also observed a strong interaction between seating position

(front, back, or center) and class size. Children in the front rows of small groups participated the most, while children in the back rows of larger groups participated the least. (1964, p. 34-35).

The sense of obligation toward participating in school activities versus school size was also tested by Willems (1969) who found that a sense of obligation among marginal and regular school students was higher in smaller schools with a small proportionate difference between groups of students. In larger schools, however, the difference was much greater. Willems replicated his study and found similar results.

Gump (1974a) reported results of a study of second grade students where contextual effects seemed to make a difference in behavior. The behavior of children in two settings was compared and Gump found:

> When second-grade children were observed in academic class, their behavior pattern involved organized activity, little change in position, slow tempo, serious mood, and limited variety; the same children, a minute later on the playground, showed behavior with less organization, a faster tempo, more exuberant mood and much variety. (p. 268).

Gump attributes many of these changes to the fact of settings being coercive in nature and, to some extent, determining or forcing their inhabitants to behave in particular ways.

Studies on Student Teachers. More recently, Doyle (1977a) in his study on student teachers has found that the student-teacher behavior varied with the dimensions of multidimensionality, simultaneity, and unpredictability. Multidimensionality is defined by Doyle as the variety of purposes, events, and processes "not all

of which are necessarily related or even compatible" (p. 9). These levels may occur singly or in interaction where one dimension influences another. This simultaneity of events and dimensions produces an unpredictability in the sequence of events to which student-teachers have to react. These three conditions evolved a discontinuity between current classroom demands and other environments experienced by the student teachers.

Doyle found that successful student-teachers developed sets of response patterns to reduce the demands on them by the complexity of the classroom. These pattern or strategies included:

1. chunking, or the ability to group discrete events into larger units;
2. differentiation, or the ability to discriminate among units in terms of their immediate and long-term significance;
3. overlap, or the ability to handle two or more events at once (this concept was adapted from Kounin's analysis of classroom management);
4. timing, or the ability to monitor and control the duration of events; and
5. rapid judgment, or the ability to interpret events with a minimum of delay. (p. 15).

He also found that successful student-teachers also acted to avoid teaching strategies which increased the complexity of the classroom environment and moved toward complexity reducing strategies such as "asking low option questions, interpreting student responses to fit predetermined patterns, increasing nonverbal clues for right answers, ignoring student answers which deviated from expectations and increasing the pace of the sequence." (p. 20). Doyle concluded

by pointing out that his research suggested that the classroom situation may be a more important factor in determining teacher behavior than previously recognized.

Studies on Teachers. In another study, Olszewski and Doyle (1976) compared teachers in two different environmental situations, an open-space school and a traditional, self-contained classroom school. Although they did not find any significant difference in range of teaching behaviors, they did find that a significant difference in shared teaching behaviors occurred. The teachers in the open-space school "shared more teaching behaviors with members of their grade levels than did teachers in the conventional structure" (p. 57). Using caution in interpreting the results due to the usage of intact groups and an ex post facto design, they suggest that the results may indicate an environmental effect on professional behavior.

Subjects of instruction have also been found to be associated with changes in teacher behavior. Fitzgerald et al. (1978) using 64 classrooms found that teaching styles were markedly different for Reading and Mathematics. They report that Mathematics was four times more likely to be taught as a single lesson to an entire class. They suggest that reasons for this discrepancy might include less necessity for grouping in Mathematics and applying more effort to a more important subject (Reading). Other differences in teacher behavior in the two subjects were noticed as well. Teachers paid more attention to student behavior when teaching a single lesson

and teacher disapproval of behavior increased as did teacher disapproval of pupils' academic contributions.

The above findings with regard to behavior are supported by Bossert (1977) in his study of four teachers, two of whom used primarily recitation or single class instruction, and two used primarily class-task (individually or group performed tasks assigned to the whole class) and multi-task (generally individual or group tasks involving pupil choice in organization). Bossert found that the desist rate (control of deviant behavior) increased during recitation for all teachers involved. Likewise the desist rate dropped for class-task and multi-task activities. The teacher used differential treatment of behavior sanctions more often during class-task or multi-task situations, but used more impartial and consistent control during recitation activities. Bossert, therefore, concluded that the type of task the teacher chose determined, to some extent, her behavior during the activity.

In an analysis of teacher's interactive thought processes during instruction, Conners (1978) found that the teachers in his study were aware of ecological pressures on their teaching practices. Conners classified these into nine general categories.

> These variables were classified as temporal, spatial, class props, group size, grade level, class ability, organizational, administrative/managerial and climatic. These ecological or contextual variables influenced the behaviors of all teachers in all lessons by guiding the course of instruction and at times mediating the influence of teacher beliefs and principles. (p. 272-273).

With regard to these variables, Conners goes on to conclude that:

> The influence of ecological or contextual variables in this study confirm the importance that writers such as Gump (1969), Kounin (1970), Doyle (1977), and Barr and Duffy (1978) have attached to the importance of these variables as influences upon teacher classroom behavior. These writers suggest that the influences of ecological variables upon teacher behavior are as yet little understood and that extensive research is required in this area. The findings from this study support these views. (p. 276).

The studies examined above all suggest that settings for behavior provide a type of coercive effect on the behavior of the individuals in those settings. This effect is unique to each setting. In other words, each setting acts differently to coerce like behavior from its inhabitants and any given inhabitant moving from one setting to another will modify his/her behavior, to some degree, to adjust to the settings' contextual effects.

Outdoor Education as a Different Context

Outdoor education literature is replete with statements which reflect conscious or unconscious realization that different types of contextual interaction occur as a result of utilizing the outdoors as a formal educational setting. Basically, these statements fall into categories of possible contextual influence such as student behavior (including experiences and attitudes), teacher behavior (including experiences and attitudes), setting (physical differences from the classroom), instructional differences (including methods and materials), and interaction

differences (such as democratic behavior, learning to get along with others, and improved student-teacher relationships). These categories and the writings which list possible effects have been summarized in Tables 1 and 2. Further elaboration for each table will be discussed in terms of the categories identified and the claims made within each category. Some general comments are also provided.

General Literature

Most of the general writing in the field of experts indicates effects in all categories identified (Sharp, 1952; Smith, 1957; Hammerman, 1964: Gabrielson and Holtzer, 1965; Hug and Wilson, 1965; Smith, 1970; Miller, 1972; Passmore, 1972; Smith et al., 1972; Wilson, 1972; Hammerman and Hammerman, 1973b; and Lewis, 1975). Some mention effects in only four of the categories (Mand, 1967; Coburn, 1968; Knapp, 1972; and Wheeler and Hammerman, 1973), and three categories are mentioned by six writers (MacMillan, 1956; Garrison, 1966; Hopkins, 1973; Conrad, 1973; Masters, 1973; and Jacobson and Palonsky, 1976).

Student Behavior. One category containing statements by all writers was that of student behavior. The student behavior category used here includes statements regarding experiences, attitudes, skills, knowledge, and improvement in scholastic ability. Most of the statements made by writers in the field of outdoor education use what could be termed statements of "potential". In other words, the statement indicates a potential area of

Table 1

Possible Effects of Outdoor Education Given by Writers in General Outdoor Education Literature

Author	Date	Student Behavior	Teacher Behavior	Setting	Instructional Differences	Interaction Differences
Coburn	1968	X	X	X		X
Conrad	1973	X	X	X		X
Gabrielson and Holtzer	1965	X	X	X	X	X
Garrison	1966	X		X		X
Hammerman	1964	X	X	X	X	X
Hammerman and Hammerman	1973b	X	X	X	X	X
Hopkins	1972	X		X		X
Hug and Wilson	1965	X	X	X	X	X
Jacobson and Palonsky	1976	X		X		X
Knapp	1972	X	X	X	X	
Lewis	1975	X	X	X	X	X
MacMillan	1956	X		X		X

Table 1 - Continued

Author	Date	Student Behavior	Teacher Behavior	Setting	Instructional Differences	Interaction Differences
Mand	1967	X		X	X	X
Masters	1973	X		X		X
Miller	1972	X	X	X	X	X
Passmore	1972	X	X	X	X	X
Sharp	1952	X	X	X	X	X
Smith	1957	X	X	X	X	X
Smith	1970	X	X	X	X	X
Smith et al.	1972	X	X	X	X	X
Wheeler and Hammerman	1973	X		X	X	X
Wilson	1972	X	X	X	X	X

improvement rather than some fact established by research. "Potential" statements in the category of student behavior are extremely varied and supported by many writers. Improved attitudes toward school is one claim made by several writers (Sharp, 1952; Hug and Wilson, 1965; Hopkins, 1972; Wilson, 1972; and Conrad, 1973). Attitudinal improvement toward the environment, conservation, and development of a land ethic are important outcomes of outdoor education for Gabrielson and Holtzer (1965), Wheeler and Hammerman (1973), Smith et al. (1972), Hammerman and Hammerman (1973b), Wilson (1972), Hopkins (1972) and Lewis (1975). Other writers mention historical appreciation (Gabrielson and Holtzer, 1965; Masters, 1973), spiritual or religious attitudes (Garrison, 1966; Masters, 1973), and respect for authority (Garrison, 1966), as important student outcomes.

Many writers list general behavioral skills for students which can be developed in outdoor education. Hammerman and Hammerman (1973b), Smith et al. (1972), Gabrielson and Holtzer (1965), Hopkins (1972), Passmore (1972) Masters (1973) and Lewis (1975) all encourage development of recreational skills for leisure use. Academic skills such as problem solving (Hammerman and Hammerman, 1973b) and increasing powers of observation (Smith et al., 1972) are also given. Passmore (1972) lists creative skills as important. He also writes about outdoor education as providing meaningful learning situations. Development of the student in areas of self-reliance (MacMillan, 1956; Smith et al., 1972) self-realization

(Wheeler and Hammerman, 1973), self-respect (Hug and Wilson, 1965), willingness to assume responsibility (Gabrielson and Holtzer, 1965; and Hopkins, 1972), and self-control (Coburn, 1968), are found in the writings on outdoor education.

Some writers have indicated valuable experiences which they believe students obtain through outdoor education. Perhaps the most often mentioned is that of experiencing real situations, of learning by direct experience the practicalities of knowledge (Sharp, 1952; Smith, 1970; Lewis, 1975; MacMillan, 1956; Smith, 1957; Passmore, 1972; and Masters, 1973). Within this realm of real experience, the use of senses to gather data and develop attitudes becomes very important (Gabrielson and Holtzer, 1965; Hug and Wilson, 1965; Hammerman and Hammerman, 1973b; Smith et al., 1972; Smith, 1970). Several writers have indicated lists of experiences by subject areas which they feel are important to outdoor education (Smith et al., 1972; Hammerman and Hammerman, 1973b; Mand, 1967; Hug and Wilson, 1965; MacMillan, 1956; Garrison, 1966; Gabrielson and Holtzer, 1965; and Lewis, 1975). Unfortunately, these lists lack commonality and each reflects the writer's own bias so a list of experiences common to outdoor education programs does not exist. Many of the experiences provided by these writers could be carried out indoors as well, although the claim is made that they would not be as effective.

Claims regarding the effectiveness of outdoor education in the area of academic achievement are many and varied although most

writers are careful to avoid making claims regarding direct benefit in terms of increased academic achievement in the disciplines. Sharp (1952) and Smith (1957), however, do make this claim. Interestingly, Smith (1970) and Smith et al. (1972) are careful to suggest in these later writings that an effect may be present, while cautiously avoiding direct statements as to the efficacy of outdoor education in academic achievement. Improvement in the learning process is a claim made by some authors. Gabrielson and Holtzer (1965) and Hammerman and Hammerman (1973b) state that the learning process is speeded and retention is lengthened, while Hug and Wilson (1965) find that time for review is lessened and reteaching is not as necessary. Masters (1973) points to greater motivation as a result of outdoor education. A note of caution is injected by Knapp (1972) and Hammerman (1964) who point out that many of these claims are unsubstantiated and more research is necessary before they can be accepted.

Teacher Behavior. The second category identified in the general literature on outdoor education, and running parallel to student behavior, is that of teacher behavior. As with the student category, this category contains the skills, attitudes, experiences, knowledge and claims for improvement in teaching ability. Out of the twenty-two writers surveyed for this section, only fourteen made comments directly relating to the category. One of the reasons for this may have been that several of the sources were meant as manuals for teachers, and thus may have assumed that

the teachers using the manuals already had a commitment and appropriate sets of behaviors.

Sharp (1952) points out that some teachers "take to outdoor teaching quite naturally. Others learn the new techniques gradually" (p. 21). In attempting to discuss what these "new" techniques are, Sharp (1952) says that one technique is the ability to handle small groups out of doors. Another is the ability to question properly (Gabrielson and Holtzer, 1965; Hug and Wilson, 1965; and Hammerman and Hammerman, 1973b). Another technique is the ability to use the "teachable moment" (Hammerman and Hammerman, 1973b; and Passmore, 1972). Teachers need to be able to direct students in exploratory learning and problem-solving strategies (Hammerman and Hammerman, 1973b; and Hug and Wilson, 1965). Hammerman and Hammerman (1973b) add that teachers need to be flexible and imaginative in using the outdoors. Smith (1957) says the outdoor teacher needs an understanding of the interrelationships which are possible in the outdoor environment. He also says teachers should have the "techniques and understandings needed in teaching in an informal outdoor setting" (p. 121). Wilson says the teacher will "grow in wisdom and skill too" (p. 233) as a result of participating in outdoor education. One writer provided a partial list of competencies needed by a residential camp teacher:

1. An understanding of the underlying philosophy of school camping.

2. An understanding of the benefits derived from school camping in child development.

3. Skill in integrating pre-camp, and post-camp experiences in the classroom so that the child has a continuing and total meaningful experience rather than a 'one shot' isolated experience.

4. An ability to work effectively with groups and to provide children's groups with democratic experiences.

5. Skill in working with varying size groups in an informal setting and in the outdoors involving 'techniques of group structuring'.

6. An understanding of the philosophy inherent in work experiences in the camp program.

7. Familiarity with, and an understanding of, the natural world, outdoor living and conservation, and skill in integrating these activities with the school curriculum through direct experiences. (Gabrielson and Holtzer, 1965, p. 71).

Several writers suggested that outdoor education gave the teacher a chance to apply what she had learned about child development and learning theory (Miller, 1972; Smith et al., 1972; and Conrad, 1973). Smith (1970) points out that "A permissive situation is created where teachers dare to teach in accordance with what is known about human growth and the nature of learning" (p. 7). Smith (1970) and Hammerman and Hammerman (1973b) suggest that a teacher can learn more about his/her pupils through outdoor education experiences.

Smith (1957), Wilson (1972), and Lewis (1975) are convinced that the outdoor learning which takes place is a mutual affair with the teacher learning alongside the students. This will result, say Miller (1972) and Smith et al. (1972) in a new perception of self and others as well as becoming more creative (Lewis, 1975).

Several writers mentioned the affective qualities needed by a teacher of outdoor education. He/she must have guidance skills (Smith, 1957; Smith et al. 1972; and Lewis, 1975), be warm and responsive (Gabrielson and Holtzer, 1965; and Wilson, 1972), and he/she must be able to empathize with students who are experiencing difficulties with camp life (Gabrielson and Holtzer, 1965).

Knapp (1972) felt that outdoor education teachers, along with being competent in many of the above areas, should also be producers of knowledge for others to use. He states that research in outdoor education could easily become a function of the classroom teacher.

An area of fairly heavy concentration for several writers was teacher education in outdoor education (Smith, 1957; Gabrielson and Holtzer, 1965; Conrad, 1973; Smith et al., 1972; Passmore, 1972; Hammerman and Hammerman, 1973b; Mand, 1967; and Lewis, 1975). Without exception these authors called for more pre-service as well as in-service education. Many of them felt that universities and teacher education institutions were not doing an adequate job of pre-service and several possible in-service extensions were mentioned.

Several writers (Passmore, 1972; Wilson, 1972; Conrad, 1973; and Hammerman and Hammerman, 1973b) felt that experiencing outdoor education would be rewarding for a teacher and Smith (1957) suggested that teachers who experience outdoor education would then

arrange a program for their students. Hug and Wilson (1965) noted that, in order for a program to be successful, the teacher must be interested.

Not all teachers, however, seem to be interested in providing an outdoor education experience for their students. Sharp (1952) stated that some teachers completely resist the new approach. One reason for this stated by Gabrielson and Holtzer (1965) was a lack of preparation during pre-service, but they also suggested that fear of the outdoors and lack of knowledge may account for the reluctance of some teachers to become involved. Many teachers feel that they will not be able to answer questions regarding outdoor phenomena so they refuse to become involved in outdoor education.

One interesting point made by Smith (1957) was that the methods and techniques attributed to outdoor education were equally as effective indoors if utilized by a good teacher. This led Hammerman (1964) to ask for more research on teacher behavior in the outdoors as well as on outdoor related teaching competencies which might be included in pre-service education.

Setting. Statements, explicit and implicit, were made by all authors regarding this category (See Table 1). Although the literature takes note of the physical differences between the outdoors and the classroom, it does not explain what it is about the outdoors which is able to produce the effects mentioned in the other categories. Abundant reference is made to the

availability of direct experiences, the interrelationships of flora and fauna, and the opportunities for social development and group living. It would seem from the literature that the outdoors is everything the classroom is not. There are, perhaps, two points on which the major difference in setting rests. The outdoors is a place where students can see interrelationships between objects in nature as well as the effect of man on nature or nature on man. However, the case can be cogently made that, with today's efficient and extensive technology, these relationships can be recorded and brought indoors, where they can be viewed and reviewed at leisure. What is there, then, about actually being where the event is happening that is so much more meaningful? The authors do not say.

The second major difference and one which is mentioned without exception by each writer, is the concept of "groupness". Group living, democratic principles, community, laboratory of human relations, interaction, socialization - all these terms and more are used by the experts to identify something unique about the outdoor setting. The camp setting with its more lengthy period of togetherness, may provide the stage for development of learning and behaviors which the school setting, with its limited temporal features, cannot provide. Certainly, none of the authors are describing the same outdoor setting. Whether in New York, California, Toronto, or Edmonton, the only commonality about the settings mentioned in the literature is the fact of being away from school. Perhaps it is the fact of a new and different setting with new

and different expectations, where the common modes of thinking and acting are temporarily suspended, that is the real setting for outdoor education.

Instructional Differences. Perhaps the statement most often occurring regarding instructional and methodological differences between classroom and outdoor education is that the latter is not a new subject area (Smith, 1957; Gabrielson and Holtzer, 1965; Hug and Wilson, 1965; Mand, 1967; and Lewis, 1975) but a new method of education - one in which the primary object is integration of subject matter from other disciplines. This was first stated by Sharp (1952). "Outdoor education is a method of teaching, as well as a principle of using the out-of-doors whenever possible" (p. 20). This concept has been supported by Smith (1957), Hug and Wilson (1965), Mand (1967), and Lewis (1975).

Closely allied to this concept are those who think of outdoor education as a learning climate (Smith, 1957; Gabrielson and Holtzer, 1965; Garrison, 1966; Smith, 1970; and Smith et al., 1972). Smith (1957) has referred to outdoor education as both a method and a learning climate. At the same time he has also stated that "conservation is the subject matter of extended outdoor experiences. Participation in a democratic community, the living experiences of students working, studying, and playing together - these are method" (p. 23-24). If this appears somewhat confusing, it must be remembered that Smith (1957) was one of the early writers in the field and that outdoor education has developed from

a knowledge base about conservation to developing an attitudinal ethic (Lewis, 1975) or sense of stewardship as education has become progressively more concerned with the development of values in students.

Other instructional methods referred to in the literature include the use of problem solving (Hug and Wilson, 1965; Wilson, 1972; and Smith, 1972), direct teaching and experience (Mand, 1967; Smith, 1970; Passmore, 1972; Smith et al., 1972; Hammerman and Hammerman, 1973b; and Lewis, 1975), and activity (Gabrielson and Holtzer, 1965; Wilson, 1972; Passmore, 1972; and Hammerman and Hammerman, 1973b). Knapp (1972) does not agree that these are methods of outdoor education per se but rather that outdoor education allows them to function at a maximum. While not disagreeing with the methods of direct teaching and problem solving, Miller (1972) and Hammerman and Hammerman (1973b) point out that outdoor education functions primarily as a change agent in reorganizing and integrating the curriculum.

Lewis (1975) would agree with reorganization of the curriculum. Garrison (1966) would like to see the curriculum revised totally in line with the objectives of outdoor education. Smith et al. (1972) and Hammerman and Hammerman (1973b) do not agree. To them outdoor education is an enrichment of the existing curriculum.

To Wheeler and Hammerman (1973), the materials of the curriculum exist in the natural world, while Gabrielson and

Holtzer (1965) and Mand (1967) declare that materials for outdoor education are unlimited. Agreement on what should be the content of outdoor education is visibly absent as many writers present activities which they feel should be covered in outdoor education with little commonality (Hug and Wilson, 1965; Gabrielson and Holtzer, 1965; Garrison, 1966; Mand, 1967; Smith, 1970; Smith et al., 1972; and Hammerman and Hammerman, 1973b).

It is exactly this lack of commonality in materials and disagreement regarding methods of instruction that Knapp (1972) strikes out against. He argues that outdoor education does not have an adequate theoretical base and that instructional methods and materials should be based on research.

> Presently, outdoor education is functioning in a partial vacuum, almost totally devoid of current knowledge from other disciplines. Professionals must be aware of current knowledge concerning learning theory. They must know the implications of the many new curricular programs for their field. They must understand the complex problems that are entailed in the process of curriculum change and, more basically, of human change. (p. 117).

> Knowledge is often accepted on a basis of authoritarian value judgment alone. The outdoor curriculum has a valid place in the school; however, the selection of these learning experiences must be justifiable on a scholarly basis and eventually supported by valid research. (p. 118).

Interaction Differences. Only one writer did not note any advantages or disadvantages of outdoor education in this category. Generally the statements, comments and opinions can be divided into four subgroups: those dealing with democratic learnings; those dealing with group processes; those dealing with cooperative planning; and those dealing with student-teacher relationships.

Most authors provided statements on the efficacy of the outdoors in promoting democracy or democratic principles (Sharp, 1952; MacMillan, 1956; Smith, 1957; Gabrielson and Holtzer, 1965; Garrison, 1966; Coburn, 1968; Smith, 1970; Wilson, 1972; Smith et al., 1972; Masters, 1973; Wheeler and Hammerman, 1973; and Lewis, 1975). The essence of these statements seems to be that groups in situations where they are living together tend to develop principles of democracy and good citizenship. Activities such as running a camp store or bank, group decision-making in the daily planning process, and learning to accept the will of the majority were seen as contributing to development of democratic principles.

Closely connected with statements about democratic learnings were statements regarding the necessity and value of group processes in the benefits of outdoor education. Implicit in most statements was the idea that these processes either do not occur in the classroom or function minimally. Again the concept seemed to be that these group processes which strengthen character, teach relating one's self to others, and indicate willingness to assume responsibility, were facilitated by the total-living experience. Frequent mention was made to this effect of working, eating, sleeping, and interacting together as the facilitating arrangement (Sharp, 1972; MacMillan, 1956; Smith, 1957; Gabrielson and Holtzer, 1965; Hug and Wilson, 1965; Garrison, 1966; Mand, 1967; Coburn, 1968; Hopkins, 1972; Wilson, 1972; Miller, 1972; Passmore, 1972; Smith et al., 1972; Conrad, 1973; Masters, 1973; Wheeler and Hammerman, 1973; Hammerman and Hammerman, 1973b; and

Lewis, 1975). While not disagreeing with these statements, Hammerman(1964) wisely points out the need for research into peer relations and group social structure before their opinions can be fully accepted.

Fewer authors mentioned the role of pupil planning in the outdoors as one of the significant advantages of outdoor education, but those that did indicated that they felt this to be an extremely important factor in linking the students and teacher and contributing to the success of the outdoor program. All felt the planning experience should begin in the classroom and continue outdoors contributing to group cohesiveness and morale (MacMillan, 1956; Smith, 1957; Gabrielson and Holtzer, 1965; Hug and Wilson, 1965; Mand, 1967; Smith, 1970; Smith et al., 1972; Wheeler and Hammerman, 1973; and Hammerman and Hammerman, 1973b).

The final aspect of the integrativeness of the outdoor education setting to be dealt with here is that of student-teacher relationships. As early as 1952, Sharp pointed out that "with the spirit of observing together and learning together comes a better relationship between student and teacher" (p. 21). He goes on to say that:

> In the outdoor classroom the student stands beside the teacher; they are facing in the same direction, looking toward the object that is under observation; they are partners in learning. Teachers who have given outdoor education a trial are quite emphatic in saying it improves the chances for mutual trust and confidence. And they say further, that when they go into the indoor classroom with these same students, much of the stiffness has gone out of the educational process, to be replaced by a new kind of eagerness never before seen within those walls. (p. 21).

Smith (1957) says teachers and pupils have a "better understanding of each other" (p. 31). It would appear that the old adage 'the teacher becomes a human' applies here, and that students actually observe the teacher in a human role, eating, sleeping and relaxing with them. Hug and Wilson (1965) indicate that "Teachers and children begin to know each other in a way that produces mutual esteem, the basis of rapport" (p. 2), while Passmore (1972) agrees and extends the idea further by saying that "they can develop a completely new kind of teacher-pupil relationship without losing either the respect or control of their pupils" (p. 30). This improvement in teacher-student relationship is noted, as well, by other writers in the field (Gabrielson and Holtzer, 1965; Garrison, 1966; Mand, 1967; Coburn, 1968; Smith, 1970; Hopkins, 1972; Miller, 1972; Wilson, 1972; Smith et al., 1972; Conrad, 1973; Masters, 1973; Hammerman and Hammerman, 1973b; Lewis, 1975; and Jacobson and Polansky, 1976). Hammerman (1964) injects his usual note of caution and again asks for research in the area before these claims can be accepted.

It is clear, then, that writers in the field believe strongly that outdoor education has many beneficial effects on those who engage in this direct experience form of learning. It is also true that statements made by 'experts' are not always proven to be true. It is important to see if research can support the claims made in the general literature.

Selected Research Literature

The thirty-nine researchers mentioned in this section have been selected from the studies available, both complete and in abstract or periodical form, on the basis of their perceived relevance to this study (See Table 2). As in the previous section on general literature, the studies are discussed in five categories representing possible contextual effects exhibited or influenced by outdoor education. The categories are: student behavior (including experiences and attitudes), teacher behavior (including experiences and attitudes), setting (physical differences from the classroom), instructional differences (including methods and materials), and interaction differences (such as democratic behavior, learning to get along with others, and improved student-teacher relationships).

Student Behavior. Several sub-categories seem to be apparent within this larger context. Of the twenty-five studies which indicated effects or possible effects in this category, six mentioned skills, eight mentioned achievement, seven mentioned attitudes, six mentioned self-concept, while new experiences were reported once.

Both increased mental and physical skills have been reported. Coren (1970) concluded that campers in a six week, day camping experience made greater development than non-campers. This was true for both boys and girls. A study of children from deprived areas in camp situations by the Milwaukee Public Schools (1966)

Table 2

Possible Effects of Outdoor Education as Shown by Research

Author	Date	Student Behavior and Experiences	Teacher Behavior and Experiences	Setting	Instructional Differences	Interaction Differences
Becker	1977	X				
Beker	1960	X				X
Berger	1958		X			
Brekke	1977	X				
Christie	1972		X			
Chrouser	1970	X				
Cole	1957	X				
Coren	1970	X				X
Cowan	1972	X	X	X		X
Cragg	1953	X				
Davidson	1965	X				X
Davis	1960					X

Table 2 - Continued

Author	Date	Student Behavior and Experiences	Teacher Behavior and Experiences	Setting	Instructional Differences	Interaction Differences
Fletcher	1973	X				X
Gibson	1966	X				X
Hauserman	1963		X			
Holt	1973		X			
James	1969				X	
Jones and Swan	1972	X				X
Kranzer	1958	X	X			X
Krieger	1973	X				
Margulis	1952					X
McCormick	1967		X			
McNamara	1971	X				
Meropoulis	1978	X	X			
Millward	1973	X			X	X

Table 2 - Continued

Author	Date	Student Behavior and Experiences	Teacher Behavior and Experiences	Setting	Instructional Differences	Interaction Differences
Milwaukee Public Schools	1966	X				
Modisett	1971				X	
Peck	1975	X			X	
Pepper	1952					X
Reed	1969	X				
Rhead	1967		X			
Rhoades	1953					X
Risdon	1974	X			X	X
Rupff	1957	X				
Shaw	1969					X
Slater	1972	X				
Stack	1960					X
Thompson	1975	X				
Wilcox	1976	X				

indicated that these students gained by having new recreational and vocational opportunities. Risdon (1974) surveyed outdoor education programs and reported that personal growth in cooperativeness, judgment and responsibility were some of the major outcomes of the programs. Cragg (1953) reported greater intellectual development among campers, while Kranzer (1958) stated that low mental ability students showed an increase in critical thinking ability. McNamara (1971) also discovered an increase in critical thinking as a result of an outdoor laboratory approach in teaching Science.

Several researchers claim that outdoor education experiences increase learning and scholastic achievement. In 1969, Reed discovered that evidence of pupil gain from field trips was a major encouraging reason identified by teachers and administrators. Chrouser (1970) reported significant gains in student understanding of three science concepts, in the specific principles of laboratory biological investigations, and in understanding Science as a process, as a result of utilizing an outdoor laboratory approach in Science teaching. McNamara (1971) also found significant gains in single science concepts as a result of outdoor laboratory investigations. A significant increase in student understanding of three ecological concepts as a result of a field trip was reported by Slater (1972) and Jones and Swan (1972) surveyed parents of students involved in two camp programs and found reported increases in knowledge of conservation practices, ecology and

pollution problems. Cowan (1972) noted an increase in vocabulary as reported by the teachers he surveyed. In an experimental study using an outdoor education technique, Wilcox (1976) found significant increases in performances in Language Arts, Mathematics and Science by the treatment group. Greater cognitive gains were reported by Peck (1975) among students using outdoor settings to learn environmental education objectives. This was supported by Brekke who reported that the teachers he surveyed felt "outdoor education made classroom learning more meaningful" (p. 104).

Seven researchers reported attitudinal differences due to outdoor education. Jones and Swan (1972) reported that parents from the two camps surveyed felt their students' attitude toward school had improved. The same finding was reported by Cole (1957) in comparing groups of adolescent boys identified as potential dropouts. Gibson (1966) developed an instrument based on Guttman scales to measure attitudes of students exposed to a camp experience and found significant improvement in all areas tested. Improved student attitudes toward field trips were reported by teachers in a study by Reed (1969). This finding was supported in another study of teachers by Meropoulis (1978) whose teachers felt that outdoor education has a positive effect on student interest and student attitude toward the outdoor education approach. Attitudes of students toward outdoor concepts were significantly increased following a period at camp (Millward, 1973), and were even more positive three months later. Becker (1977) found increased

student attitudes toward conservation and human impact as a result of a residential outdoor education experience.

The area of improved self-concept was investigated by six researchers all of whom reported positive increases as a result of outdoor education experiences. Beker's (1960) experimental study showed more positive feelings toward themselves after a camp experience. The changes were of greater magnitude than the control group of non-campers. Davidson (1965) studied two camps with different curricula but found positive self-concept change as a result of both camps. The parents of students in both camps surveyed by Jones and Swan (1972) reported positive increases in self-concept in their children. In comparing groups of economically advantaged and disadvantaged students at a camp, Fletcher (1973) found positive increases in both groups. A study by Krieger (1973) showed significantly positive increases in self-concept as a result of a camp experience as did Thompson (1975) in her study of university students in a camp situation.

Rupff (1957), in examining the objectives of a school camp, found that the students reported new experiences such as eating new foods and learning about nature. Implicit in many of the studies mentioned above were new experiences for students, but, since the sources examined did not specifically report these, these sources have not been discussed.

Teacher Behavior. In contrast to the first category mentioned, only nine studies reported the influence of outdoor education on teacher behavior, experiences, or attitudes. Berger (1958) identified a number of competencies in the areas of basic camp skills and knowledge for teachers of outdoor education activities. This study was followed up in 1973 by Holt who listed 115 teaching competencies for outdoor education teachers. These were listed in the areas of subject matter, school camping, and adjustment of pupils to total-living camp situation. These studies suggest that there may well be some types of competencies necessary for teachers of outdoor education. Kranzer's (1958) findings seem to support this. He developed a rating scale for examining the effectiveness of teachers and concluded that the "camp improved the teacher's personal effectiveness" (p. 83). Hauserman (1963) found that student teachers with an outdoor education orientation were warmer and more personal and had a greater behavior pattern. McCormick (1967) reported that teachers using an outdoor laboratory changed their teaching practices, while in the same year, Rhead (1967) suggested teacher education training programs be developed as a result of his survey of existing programs. Several years later, Christie (1972) reported that outdoor education teachers show more flexibility in their teaching practices and that teachers with experience in outdoor education adequately met the needs of programs, but that teachers with experience and course work in outdoor education more than adequately met the needs of the programs. Two

surveys of Alberta teachers indicated that teachers become more involved in outdoor education as a function of their interest (Cowan, 1972), and practicing outdoor educators could vary their approaches more than teachers not active in outdoor education (Meropoulis, 1977).

Setting. Although effects of setting are implied in most, if not all, of the studies reviewed, only one researcher specifically mentioned it as a source of influence. Cowan (1972) in surveying teachers found that the use of outdoors (as a separate environment) put stress on students to be aware of the natural environment. He also reported that setting to provide "a more permissive atmosphere" (p. 103), and suggested it was "motivational for creative writing" (p. 104). The setting was also seen as a negative factor in that it influenced teachers not to use outdoor education because of the weather.

Instructional Differences. This category is somewhat similar to the teacher behavior category, but the emphasis in that category was on behavioral change while in this category it is on methods and materials specifically mentioned as being necessarily different because of outdoor education. James (1969) examined school curricula for Alberta in all subject areas in grade six for conceptual frameworks. She then provided specific activities for each of these frameworks. Most of these activities would require at least some time in the outdoors for their completion. Modisett (1971) surveyed teachers, principals, curriculum directors, and

supervisors to determine specific curriculum experiences for outdoor education. Though there was limited agreement on objectives to be included, respondents tended to place the experiences in a separate outdoor education course. Using these experiences, Modisett developed a college course in outdoor education. Millward (1973) attempted to experiment with the effectiveness of two different teaching methods in teaching students attitudes in outdoor education. Although the attitudes of the students changed significantly, there was no indication that the teachers were using the affective strategies presented to them through in-service workshops. Risdon (1974) found in his survey of outdoor education programs in Alberta, that most programs had teacher-prepared curricula. This suggests that, if unique outdoor education experiences do exist, they are not in a useable form for teachers. After comparing the effect of different settings for teaching specific environmental education objectives, Peck (1975) concluded that the outdoors could be an effective educational tool.

Interaction Differences. Due to the nature of the interaction differences in this category, it is divided into two sub-categories, one consisting of those studies which deal with social interaction among students, and one in which studies concerning student-teacher relationships are discussed.

Social growth of pupils in one form or another is reported in all studies examined in this category. Pepper (1952) found school

camping made significant contributions to social living. He found that learning to get along with others, making friends, good manners and social relationships to be among the campers' most important values. In his survey, Margulis (1952) found social living ranked first as an important outcome by his respondents. In a study of the Verona School camping program, Rhoades (1953) made recommendations for improvement of the camp. Sociometric shifts within classes after camp was one of his focuses. The main emphasis in Kranzer's study was on pupil behavior change as a result of camping. Scales and ratings used as well as interviews with personnel and pupils led him to conclude that important social changes do occur among pupils during camp. A study of self-concept change and patterns of social relationship in school campers by Beker (1960) indicated positive directions in social relationships. Davis (1960) investigated school camping and friendship choices and found that

> The results of this study bear out the contention that friendships in a participating class are affected significantly by a school camp experience. After camp, more children were named as friends than before camp. (p. 310).

Stack (1960) investigated attitudinal outcomes as well and came to the conclusion that school camps provide unique opportunities for social change. Positive social change was also revealed by Davidson in his study of camping. Gibson (1966) uncovered a slightly different version of the importance of social change. He discovered it was possible to manipulate the social change by grouping in cabins. Shaw (1969) investigated the effectiveness of

a travelling school camp and found that, here too, substantial growth occurred in social adjustment among both boys and girls. In comparing day campers to non-campers, Coren (1970) found that campers made greater progress in social-personal adjustment than non-campers. Jones and Swan (1972) reported improved peer relationships in both camps they studied, while Cowan (1972) discovered valid social significance in camping as reported by the teachers he surveyed. Fletcher (1973) found that both economically disadvantaged and advantaged students improved in their ability to cooperate with others and showed improved social growth. Millward (1973) also reported socialization change as a result of camp experiences. Risdon's (1974) survey of outdoor education programs in Alberta revealed social growth to be the main objective of most programs.

Student-teacher rapport is another important aspect of outdoor education and one which was mentioned often in the general literature. What does research reveal about this aspect of camping? Very little, really. Only four studies are concerned with student-teacher relationships. Rhoades (1953) lists it as a focus point in his list of recommendations on the Verona School program. Kranzer (1958) tried to investigate it and found that parent visitors and teachers stated that student-teacher relationships had improved. Stack (1960) surveyed pupils after a camp experience and found that student-teacher rapport had improved in their eyes. Finally, Cowan (1972) reported that greater student-teacher cooperation was an

important factor in influencing teachers to utilize outdoor education.

It would seem that, although there is a large number of studies dealing with outdoor education, most are of the descriptive variety. Many are surveys of reports of reactions to programs. These are important, however, since it is the first step in the descriptive-correlational-experimental loop described by Rosenshine and Furst (1973). It appears from the limited data available that we do not yet know enough about outdoor education to strongly support the claims made by writers in the field. We are still at the 'hunch' stage of research into this important field of education.

Literature Concerning the Instrument

This section of the chapter will focus on the eight categories used in the instrument and the literature relevant to each. The categories will be broken down into three major conceptual groups consisting of teacher management categories, (Withitness, Overlappingness, Smoothness and Momentum), teacher instructional categories (Persuasiveness and Clarity) and teacher interpersonal categories (Warmth and Empathy) (Eggert, 1977). Support from relevant literature for each will be presented. Finally, since the entire instrument was previously used in two studies, these two will be discussed separately.

Teacher Management Categories

The four categories involved in managing the classroom come from the work of Kounin (1970). "Withitness" indicates that the teacher is aware of what is happening in the classroom or has 'eyes in the back of her head'. "Overlappingness" refers to the teacher's ability to deal with more than one thing at a time. "Smoothness" represents the teacher's ability to control the flow of activities within the classroom. "Momentum" is the ability of the teacher to avoid slowing down the pace of the lesson. Dunkin and Biddle (1974) point out that Kounin was somewhat unique in his research in that he began by studying classroom discipline which led to research on five different qualities of teacher-control strategies. These, in turn, produced limited success in their use and Kounin judged he had been in error in his thinking. After re-analysis of his data, Kounin developed several concepts of group management, four of which were chosen for use in the High Inference instrument used in this study and others (Eggert, 1977; and Marland, 1977).

Kounin (1970) found that both withitness and overlappingness were related to managerial success in the classroom but that withitness was more strongly related. Although the correlations for overlappingness became insignificant when withitness was partialled out, Kounin concluded that

> Regardless of the type of theoretical linkage between overlappingness and withitness, the reality of classroom dictates that both relate to managerial success and,

> unless some other technique is available to obtain knowledge about what is going on except by attending, one can safely recommend that teachers engage in both manifest overlapping and demonstrated withitness. (p. 91).

The issue of movement management (lesson flow and time management) was divided into smoothness and momentum by Kounin. Results indicated a significant correlation with student work involvement and freedom from deviancy, but the correlations are higher for momentum. When smoothness was partialled out, momentum still remained significantly correlated with both work involvement of students and freedom from deviancy in recitation settings. However, the converse indicated that smoothness was not significantly correlated with either of the two dimensions of work involvement or freedom from deviancy. In seatwork settings, neither smoothness or momentum was significantly correlated with work involvement or freedom from deviancy. Nonetheless, Kounin concluded that

> Considering the reality - that teachers who avoid jerkiness also avoid impeding and slowing down movement - one must conclude that the dimension of movement management, including both smoothness and momentum is a significant dimension of classroom management. (p. 108).

Dunkin and Biddle (1974) in evaluating Kounin's work summarized the strengths and weaknesses of his studies.

> Among strengths: the concepts used are striking and original; the methods employed for classroom observation were sophisticated; reliability for coding judgments was high; and above all, the relationships found between teacher and pupil variables were strong. Among weaknesses: the methods used for operationalizing concepts in research were complex; classrooms studies so far have

> been confined to lower grades; and so far Kounin has not chosen to study, or at least to report findings for, process occurrence or presage-process or process-product relationships. Thus, we cannot know yet whether Kounin's variables are related to such outcomes as pupil achievement or attitudes or whether teachers can be taught to recognize, change, or "improve" their managerial skills. (We suspect that both kinds of relationships <u>can</u> be discovered, but the evidence is simply not in yet to check our suspicions). (p. 161).

This situation changed somewhat in 1976 when Brophy and Evertson conducted their study on teaching and remarked:

> In general, our data provide strong support for Kounin's, indicating that the qualities associated with successful classroom management are essentially those that he and his colleagues discussed. Furthermore, as it turns out, these qualities not only were associated with successful classroom management, but also with success in producing learning gains. The reasons seem obvious: teachers who have few discipline problems therefore have most of their time available for teaching and are more likely to teach successfully compared to teachers who spend significant amounts of time fighting for attention or trying to deal with severe disruptions and discipline problems. (p. 54).

In another study on teaching at the junior high school level, Anderson, Evertson and Brophy (1978), using high inference measures, found that classroom management variables were significantly related to achievement in Mathematics but not in English. This was true for general descriptions of management as well as for specific descriptions of student behavior and classroom routines. Listed variables achieving positive relationships were: student respect for teacher, student obedience, teacher consistency in enforcing the rules, teacher monitoring, and efficiency of transitions. Examples of variables negatively related to achievement were: high numbers of disruptive students, classroom interruptions, and time spent in fooling around.

Since Kounin's work was, to some extent, related to classroom ecology (Gordon and Jester, 1973) and since these variables appear to be particularly relevant to recitation settings (a common form of instruction in outdoor settings, it seems justifiable to include them in this study. Management of groups and discipline are common concepts to teaching generally and may prove to be useful in determining change in teacher behavior in different setting contexts.

Teacher Instructional Categories

In investigating the possibility of teacher behavior change in a different setting, two variables were used which reflected the teacher's ability as an instructor. "Clarity" measured the teacher's ability to provide clear, concise directions and material which was correct and suitable for the level of the students. "Persuasiveness" checked the teacher's ability to motivate the students to accomplish the tasks related to the lesson.

Clarity. This category was initially selected from a review of research by Rosenshine and Furst (1973) which listed a number of promising variables for investigation. Rosenshine and Furst (1973) evaluated seven studies which used the concept of clarity in rating scales by observers. In all cases, significant results were obtained. The concept of clarity varied somewhat in definition in these studies and Rosenshine and Furst (1971) list these differences:

1. "Clarity of presentation."
2. whether "the points the teacher made were clear and easy to understand"
3. whether "the teacher was able to explain concepts clearly ... had facility with her material and enough background to answer her children's questions intelligently"
4. whether the cognitive level of the teacher's lesson appeared to be "just right most of the time" (p. 44).

The concept of clarity used in this study uses all of the ideas stated above.

In another general review of teaching behaviors as related to student achievement, Rosenshine (1971) lists eight studies in which clarity was used. Significant results were reported for all eight studies. However, some confusion was present in the definitions - some referred to clarity of instructor's voice. Once these marginal definitions were removed, significant results were obtained in three studies and mixed results were found in a fourth. Rosenshine goes on to point out that high inference significant ratings of clarity receive strong support, while low-inference ratings do not appear as often, nor are they correlated as strongly. He concludes by saying that "variables such as 'clarity' are highly recommended for future study" (p. 107).

In 1975, Rosenshine reviewed two other studies which contained the concept of clarity. One of the studies examined college teaching and the ratings of instructor clarity yielded significant positive findings. The other study, using fourth grade teachers, resulted in positive but nonsignificant findings.

Rosenshine felt that "low correlations may have been obtained because primary grade teachers spend little time presenting material" (p. 24).

Brophy and Evertson (1976) reported in their study that "the clarity of the teacher's presentation during lessons proved to be somewhat important, particularly for low SES children, although not as important as had been predicted on the basis of earlier findings with older students" (p. 82). They went on to suggest that the reason for low correlations might be the lack of complexity in the material presented by the teacher in the grades in which the study was conducted (grades three and four), and that a reasonable supposition would be that clarity increases with complexity of curriculum.

Both the above explanations given for low correlations are somewhat weak. Brophy and Evertson (1976) may be correct in their assumption that clarity increases with curriculum complexity from their point of view. However, we have no reason to suspect that material normally presented to a third grade child is any less complex to him than material normally presented to a twelfth grade student is to that student. Similarly, Rosenshine's (1975) explanation of the low correlations in the study he reviewed is also suspect. While it may be true that primary teachers spend less time lecturing, they may not, in fact, spend less time presenting and explaining material. The reason for the low correlations in both cases may simply be that the definition of clarity used in

both studies was too narrow. Rosenshine (1975), himself, pointed out that broad definitions of clarity generally produce higher and more significant correlations.

Persuasiveness. This concept was defined as the ability of the teacher to motivate students to do the work or tasks related to the goals of the lesson. The dimension may relate somewhat to the concept of student-teacher relationship since a socially influential teacher probably has at least the respect of her pupils. It would be hard to imagine a harsh, severely [illegible] unreasonably demanding teacher as socially powerful.

Ryans (1968) proposed a systems approach to teaching in which he viewed the behavior of the teacher as information processing and the teacher as an information system. He identified five major categories for classifying teacher behavior:

1. Motivating - reinforcing teacher behavior
2. Presenting - explaining - demonstrating teacher behavior
3. Organizing - planning - managing teacher behavior
4. Counseling - advising teacher behavior (p. 33).

In his view, a significant amount of teacher behavior falls into each category and therefore, the first category, containing motivating behavior is important. Motivating behavior and the behaviors associated with persuasiveness are somewhat similar. If Ryans' model is useful for describing teacher behavior, it would seem that the category of persuasiveness is important in studying possible teacher behavior change.

Although no studies examined reported use of the concept of persuasiveness (except those which used the entire instrument), several studies used related low inference behaviors. Rosenshine (1975) reviewed several programs which studied teacher behavior and found that student attention to task was positively and significantly correlated to achievement in three studies and not significantly correlated in another. This would suggest that the students of a teacher who is able to motivate his students to do tasks relating to lesson objectives, will show increased academic achievement. The study also showed significant negative correlations on the variable of student inattention and misbehavior in three of the four studies.

In reporting the findings of their study, Anderson, Evertson and Brophy (1978) reported that

> teachers produced more achievement when their behaviors indicated that they were concerned about achievement, offered much encouragement to their students to perform well, and urged them to take responsibility for their own work. (p. 7).

Although these findings were true for Mathematics, they did not occur in English. In another report concerned with the same study, Evertson and Brophy (1978) listed positive relationships with achievement for "student volunteering and attempts on the part of the teacher to get students to respond" (p. 4) and "criticism of nonresponsiveness" (p. 4). They conclude that "the picture is one of high task orientation, student obedience, cooperativeness, even to the point of tutoring others" (p. 4). In the same report

they provide information regarding negative relationships for academic achievement for "time spent in off-task behavior such as talking..." (p. 4). These results were again only true for Mathematics.

Student respect of teacher may have some influence on a teacher's ability to persuade students to work. Pritchett (1974) found that a significant positive correlation occurred between student attitude toward the appropriateness of school work and teacher's pupil control behavior. A significant positive correlation was also found between student attitude toward the teacher and the teacher's pupil control behavior.

Kounin (1970) also addressed himself to the concept of motivation and on-task behavior of students in the formation of his concepts of accountability, valence and challenge arousal, and seatwork variety and challenge. Accountability is defined as "communicated knowledgeability about children's task performances ..." (p. 123) and was found to have a significant positive correlation to student behavior in recitation settings. Valence and challenge arousal are seen as "direct attempts by teachers to get the children more enthusiastic, involved, or curious about academic activities" (p. 130). Significant positive correlations were found for children's behavior in both recitation and seatwork settings. Seatwork variety and challenge, defined as the degree to which pupils are given varied tasks to do, obtained significant positive correlations for pupil behavior in seatwork settings, but only for

"all grades combined or for grades 1 and 2 only" (p. 137). Although these categories do not equal the concept of persuasiveness, as used in this study, they do indicate the importance of considering it as a dimension.

Teacher Interpersonal Categories

It is widely recognized that education has more than cognitive effects on students. Good, Biddle and Brophy (1975) state that over 500 studies have been completed on self-concept and self-esteem in the past ten years. Most educational goal statements indicate the desirability of positively affecting students in non-cognitive ways. The measurement of teacher affective behavior and its effects on students has been a subject of much study and mixed results.

Warmth. In Rosenshine's (1971) review of studies of teaching behavior and student achievement, he lists sixteen studies in which "student or observer ratings on variables that might be characterized as 'teacher warmth' were related to measures of student achievement" (p. 84). Four studies were positively related, four were mixed and eight were characterized nonsignificant. He points out, however, that "there were clear, consistent, linear correlations between ratings on warmth and student achievement in only one study" (p. 91). Many of these researchers used categorizations of warmth which were quite different. Some used several dimensions which Rosenshine (1971) grouped for descriptive purposes.

Much the same approach was taken by Dunkin and Biddle (1974). Their method was to discuss the global concept of 'warmth'. They

then discuss the results of some 100 studies in three separate areas: praise, teacher acceptance of pupil ideas, and teacher criticism. In terms of the global concept, the first two should be positive components, while criticism should be negatively related. They concluded that all three components occurred frequently in the studies reported.

> Teacher use of praise and criticism are strongly associated with teacher attitudes toward, and expectations for, pupils, while evidence concerning these matters is missing for teacher acceptance. Experimental training appears to have the effect of inducing greater teacher acceptance, while few effects are reported for either praise or criticism. More relations are reported for the effects of criticism on product variables than for either praise or acceptance. (p. 127)

Indications are that the three dimensions represent independent concepts. Two other conclusions seemed to be relevant with regard to pupil achievement. High praise appeared to be a strong determinant of student learning, and teacher criticism is related in a non-linear fashion to achievement. Dunkin and Biddle (1974) conclude that "the case for warmth is also not yet demonstrated" (p. 132).

In another review of several more recent studies, Rosenshine (1975) found that

> Overall, teacher praise showed consistent, positive but low correlations with student achievement. Praise of student academic response had higher correlations than praise for student behavior. However, the results were not consistent for academic criticism - criticism following a student answer. (p. 63).

One study reported positive correlations for this category while another reported negative results for the same category.

While many of the studies discussed in the reviews mentioned have had mixed results, other studies have not. Johnson (1973) studied student-teacher interaction in a junior college and concluded that the ideal student-teacher relationship was characterized by an abundance of positive communication statements. In studying a high school attempting to personalize and humanize teacher-student relations, Barter (1974) found that academic performance and attitudes toward school showed improvement as student-teacher relations became more personal and humane. Borovetz (1975) examined students' perceptions of the way they thought their teachers felt toward them and compared these perceptions to achievement in Reading. He found that achievement scores in Reading improved when students perceived that their teachers regarded them positively.

Perhaps one of the reasons for the mixed outcomes of these studies on aspects of the global concept of 'warmth' is the widespread insistence on correlating affective measures with academic achievement. Perhaps more studies need to be done which correlate warmth with other attitudes or self-concept. At any rate, attempts to measure a teacher's affective behavior and its relationship to a change in setting seem justified.

Empathy. Understanding and reacting to a student's feelings is also an important part of the teaching process. Ryans (1968) supports this by the category of counseling - advising behavior" (p. 33) in his classification of teacher behavior. Carkhuff and Pierce (1976) support this view of the teacher as counselor. They see the teacher's role in counseling or helping as having four phases: "attending, responding, personalizing, and helping" (p. 9). If the teacher is to fulfill this role in helping the child to understand and react to his feelings, the teacher must have empathy or be able to empathize with the child. This is a most important ability, particularly in the 'responding' mode. The concept of empathy in a helping relationship comes from counseling psychology where it plays a major role.

> The control ingredient of the psychotherapeutic process appears to be the therapist's ability to perceive and communicate, accurately and with sensitivity, the feelings of the patient and the meanings of those feelings. By communicating 'I am with you' and 'I can accurately sense the world as you construe it', in a manner that fully acknowledges feelings and experiences, he facilitates the patient's movement toward a deeper self-awareness and knowledge of his own feeling and experiences and their impact. (Truax and Carkhuff, 1967, p. 285).

Carkhuff (1971) reports the results of research learnings on the helping relationship.

> They relate to what makes a parent-child relationship work. They relate to what makes a teacher-student relationship work. They relate to what makes a counselor-counselee relationship work.

> Briefly the findings are this. The relationship between the helper and the helpee constitutes the core of all effective learning or relearning experiences. The relationship conditions enable the helper to understand the helpee, and the helper to establish himself as an important influence or potent reinforcer of the helpee's behavior. In this context, the relationship conditions enable the helper to discover, develop, and implement courses of action or programs that are effective for the helper. (p. 164).

Carkhuff goes on to explain the conditions of the relationship. These are, he says "responsive or facilitative" and "initiative or action-oriented" (p. 164). He goes on to explain that the responsive or facilitative dimensions

> include dimensions such as empathic understanding, respect, and specificity or concreteness. The degree to which the helper offers high levels of these facilitative dimensions will be related directly to the degree to which the helpee can understand, respect, and be specific with himself and, ultimately, others. (p. 164).

What evidence do we have to support these statements of the importance of empathy in teaching? In their report of studies on social interaction in the classroom Withall and Lewis (1963) describe the results of one study. The researcher

> found that the more discriminating variables for assessing student-teacher relationships were similarity of social beliefs between teacher and students, mutual personal liking of student and teacher, the teacher's skill in developing harmonious relations with students, the teacher's effectiveness in counseling and the teacher's belief that he has an effective relationship with a student. (p. 695).

Dunkin and Biddle (1974) list only one study dealing with pupil self-concept, the results of which indicate that "higher teacher praise is associated with more positive pupil self-concepts"

(p. 122). It would appear that reviews of research have provided few studies relevant to empathy and the teacher's role as a counselor.

However, several studies not included in current reviews do indicate some support. Chang (1973) studied university students and their instructors and found that instructors rated high in empathy enhanced learning performance more than those rated low in empathy. Again at the college level, Johnson (1973) found in his study of teacher-student relationships that the ideal relationship was characterized by many positive communication statements, while the least desirable student-teacher relationship was characterized by a level where the instructor felt superior and looked down on his/her students. The emotional level of this relationship was one where the instructor drew away from the student. Similarly, in studying student attitudes toward teachers and school at the junior high school level, Pritchett (1974) found a high correlation between student attitudes and teacher control behavior, emphasizing the importance of interpersonal relationships in students' attitudes toward school. In Barter's (1974) study of organizational change in a high school, he found that student attitudes toward school and academic performance improved as relations between teachers and students became more humane and personal. In studying sixth grade students, Borovetz (1975) found their Mathematics achievement increased when they felt their teachers liked them.

Although mixed results were obtained by Anderson, Evertson and Brophy (1978) for emotive dimensions in their study of junior high students, students tended to react more positively to teachers who were warm and personal in their relationships. This seemed to be true of teachers of both Mathematics and English. Significant results for several interpersonal dimensions and achievement, however, were found only in Mathematics. Perhaps the effect of an intervening variable moderated the results obtained with student achievement or perhaps, as some researchers have suggested (Dunkin and Biddle, 1974), affective variables may be curvilinearly related to achievement.

Studies Which Used the Instrument

Two studies have used the instrument employed in this study. In a study on interactive thought processes of teachers, Marland (1977) used the High Inference instrument to code teacher behavior and reported little discrimination among the six teachers in the study. The variables he reported as showing the most difference were overlappingness, momentum and smoothness. Unfortunately, little use was made of the results except to show that ratings on empathy generally tended to be low, and one category, withitness, tended to support a conclusion regarding teacher's reported perceptions in stimulated recall interviews.

The second study, Eggert (1977), used the same data in examining teacher behavior related to pupil behavior, achievement and attitudes. More extensive use of the data was made in this study

which reported positive nonsignificant correlations among the classroom management skills and reading achievement, satisfaction, cohesiveness and self-concept. It appeared that teachers rating high on the scales of withitness, overlappingness and momentum encouraged:

1. reading achievement
2. happiness and enjoyment of the school and class (satisfaction subscale)
3. friendship and closeness with others in the class (cohesiveness subscale) and
4. positive school - academic self-concepts (p. 166).

Significant negative correlations were obtained between competitiveness perceived by students and withitness, overlappingness and smoothness. Negative, but nonsignificant correlations were also found between management skills and friction. In non-teacher directed settings, significant negative correlations were found between withitness and smoothness and student behaviors which were withdrawn, fearful and avoidant. A significant positive relationship was found between overlappingness and student behaviors which were social and productive. In teacher directed settings, a significant positive correlation was demonstrated between momentum and student behaviors which were adult dependent.

With regard to instructional skills (clarity and persuasiveness), significant negative correlations were found between persuasiveness and student behaviors which were withdrawn and peer oriented in non-teacher directed settings. Significant

positive relationships occurred between persuasiveness and adult dependent student behaviors in both settings. Clarity produced significant positive correlations in teacher directed settings with social productive behaviors and aggressive manipulative behaviors in non-teacher directed settings, while negative significance was found between clarity and absenteeism.

In the category of interpersonal skills, negative correlations were reported for warmth and competitiveness, and between warmth and other-directed, task oriented student behaviors in teacher directed settings. Warmth correlated significantly and positively with social productive behaviors in non-teacher directed settings. No significant correlations were found for empathy.

Eggert (1977) summarized his results with the High Inference scale by stating:

> In summary, teacher classroom management skills are positively related to a sense of well being by the students, social integrative behaviors, and adult-dependent task oriented behaviors. Teacher persuasiveness is positively related to more desirable task oriented behaviors. Where teacher warmth was in evidence students reported that they did not feel there was an over emphasis on being best or first. The behaviors of children where warmth was evident were more social and productive. (p. 169).

It would seem then that the High Inference instrument has the power to discriminate between teacher behaviors, and student behaviors and attitudes. Since it covers the global range of teacher behaviors in most areas of occurrence, it is deemed suitable for this study.

Summary

This chapter has dealt with three areas of importance to the study. In the first section, the theoretical framework of ecological psychology was explained and outlined. The second section included recent literature and research on outdoor education which indicate areas of ecological concern and illustrate possible sources of ecological effect on teacher behavior. The final section explained the categories of the instrument used and provided support for their use in this study.

Chapter III discusses the design of the study and the procedures used in collecting data. The schools, teachers and programs are described and the data-generating instrument explained.

CHAPTER III

DESIGN AND PROCEDURES

Introduction

The preceding chapter gave a description of the theoretical framework of ecological psychology on which this study is based. It also previewed the general literature and research in the area of outdoor education. The third section of the chapter dealt with the justification of the categories of the instrument used in this study and reviewed selected literature relevant to each category as well as the two previous studies in which the instrument was used.

Chapter Three outlines the procedure used in gathering data on selected aspects of teacher behavior in classroom and outdoor settings. It describes the schools and programs, the sample of teachers, the instrument used, the administration of the study and the method used to analyze the data.

Background to Data Collection

Since this study was originally intended to contribute to a larger study by another researcher, the decision was made to have both investigators trained in the use of the instrument. This provided several advantages. One of the researchers was concluding course work on a doctoral program and would have somewhat restricted availability for data collection in the classroom.

The availability of two coders for the residential camp situation meant that inter-rater reliability checks could be conducted. As well, each researcher was able to offer some time to conduct program activities for the participating schools, a form of cooperative payment eagerly accepted by the schools either to help reduce group size or provide preparation time for other staff, two areas of severely needed help for most programs.

The larger study was to utilize another instrument for data collection in addition to the one used in this study. This required hiring another coder resulting in some changes in scheduling which will be discussed in a later section of this chapter.

Identification of the Residential Camps

Several parameters were considered prior to selecting the residential camps to be studied. It was decided that camp programs should be an extension of the regular school program in that several disciplines which would normally occur in the regular curriculum should be represented in the camp situation. This concurs with the prevailing philosophy of outdoor education as an extension of regular schooling.

It was also decided that, although size of student groupings would probably be different than in a normal classroom, each teacher observed should be instructing groups which contained many of his/her own students. This reduced the possibility of changes occurring due to unfamiliarity with the group of students.

The size of the groups concerned was not perceived to be a confounding factor since most teachers deal with different group sizes in normal classroom operation. This, in fact, was perceived to be the case with the teachers selected for the study. Each one utilized several different group sizes in the classroom at different times for varying purposes.

It was felt that at the outset an attempt should be made to locate residential camps of sufficient length to allow for time both to observe differences in behavior change and for these changes to occur. For these reasons, an attempt was made to locate schools with residential camps of four days or more in length. After brief consultations with central office personnel in two large urban systems, the conclusion was reached that a different approach would need to be taken.

Accordingly, a list of operating camps in the Edmonton area was obtained from the Department of Parks, Recreation and Wildlife. These camps were contacted for the names of schools which had reserved the camp for four days or longer. The reasoning behind this approach was that, due to financial restrictions, most schools in the immediate area would use camps within a hundred mile radius of their school. It would also facilitate data collection for the investigators and coders since travel time would be reduced.

Unfortunately, it soon became apparent that the large majority of camps were only two or three days in length or were to occur either too early, thus preventing enough time for pre-camp

observation schedules, or too late, leaving no time for follow-up classroom observation.

In view of these obstacles, several camps were identified through personal contact. Two of these were rejected as they involved either programs or groupings not representative of normal school residential camp programs. One involved a small group of special class students whose program was not [redacted] to the regular school curriculum, while the other involved the teacher and a small group of students from a split class. Preliminary indications were that it was to be more of a holiday than a valid extension of school learning. One other school did not wish to participate in the study. This left two schools. One of these schools had scheduled a three day program while the second school planned a five-day experience. In this latter school, two teachers expressed willingness to be involved in the study. The decision was made to utilize the two schools and three teachers who indicated willingness to participate.

Description of the Schools and Programs

School A. School A was located within the Edmonton Catholic School System in a lower-middle class residential area of Edmonton. With approximately 14 staff instructing 260 students, it offered a traditional subject-centered curriculum in separate classroom units.

The residential outdoor camp program offered by the school included areas of study related to the school program such as mapping, tree study, arts and crafts, and Indian culture. Aspects included in the program which were not part of the regular curriculum were acclimatization, canoeing, orienteering and archery. These studies were offered in blocks to groups of approximately eleven students from the two grade six classes involved. The camp instructional time during the three-day camp was divided into seven time blocks each of which was one and one half hours in length. No instructor was required to teach more than four of these blocks. This meant that each instructional group saw each instructor or group of instructors (only for the canoeing activity) only once during the camp.

The school was fortunate in being able to arrange for nine instructors, not all of whom were teachers. This provided the flexibility required to schedule each staff member into only four out of the seven instructional periods. Non-instruction periods were utilized by the staff in helping with meal preparation, supervision, preparation for instruction, or other details associated with camp life.

This camp program required that students occupy tents at night, thus giving the students experiences in group decision-making and cooperative living. Each night at least two instructors supervised the camp area until the students were asleep.

Students were involved in planning for the camp experience for several weeks prior to their arrival and they were organized into groups for camp maintenance activities such as dish-washing, carrying water, bringing firewood, and cleaning up the camp area.

Instructional assignments begun at the camp were continued after the camp and finished at school.

School B. School B was a public school located in a middle-class urban area within the County of Strathcona. Enrollment was approximately 620 with 27 staff members. It, too, was characterized by a subject-centered curriculum and traditional self-contained classrooms.

The residential program offered by this school was initially intended to be five days and four nights in length with students leaving the school Monday morning and returning Friday afternoon. However, due to some type of wide-spread illness, the camp was shortened by one full day and the bus arrived to pick up the students Thursday noon.

The program philosophy was interdisciplinary in nature and included activities in the areas of Language Arts, Mathematics, Science, Art, Music, Social Studies and Physical Education. Eleven instructors were utilized, some of them only part-time. Eight instructional groups consisting of ten or eleven students were formed from the three grade six classes involved. The students participated in pre-trip planning at the school as well as

completing assignments after the camp during the regular school program.

Monday afternoon all students and staff participated in a hike to an historic monument where they were given an historical overview of the area as well as some instruction in Indian cultural aspects. On display were a number of historical artifacts and fossils. The remainder of the week was divided into twelve instructional blocks, one and one half hours in length. Four of these blocks were to occur each day with the final morning reserved for clean-up and packing. Each group was to participate in a full-day trip in vehicles to some unusual sites in the surrounding area. Tuesday and Wednesday were set aside for this and four groups with their instructors went each day.

This school decided to rent a camp with complete facilities. This meant that the students were housed in cabins and a central lodge was used as a dining area and general meeting place as well as the center for beginning a number of instructional activities. One staff member provided an overnight 'sleep under the stars' at a location away from the camp for interested students. Two staff members were on supervision duty each evening until the students were asleep.

An unusual feature of this camp was an evening in the middle of the week set aside for parent visitation. Families of the students were invited to visit the camp and have a cook-out supper with their children. Activities in which the whole family

could participate were provided by students and staff. One staff member was an Australian and had brought some boomerangs with him so the group was treated to a display and explanation of boomerang throwing.

The Sample

The sample for this study consisted of three teachers. Biographical data for each teacher was obtained by the use of a simple form (See Appendix A). Parts of the data obtained for each teacher are given below and also shown in Table 3.

Teacher A. Teacher A was a male, forty years of age, with six years of training and seventeen years of experience teaching grades three to twelve. He had three degrees with majors in Secondary Education and Economics. Experience included teaching all elementary subjects and Geography, Social Studies, Economics and Physical Education at the secondary level. Of the three teachers, he had the most training and experience.

This subject was, during the period of study, the principal of his school and has been an administrator for 12 years. As principal, he was not in full-time teaching contact with the students involved, but did teach Social Studies to one of the classes involved. The area of his responsibility at the residential camp was mapping, an area easily within the confines of the discipline he was teaching.

Other full-time jobs held included work in laboratory sales and refinery maintenance. He had worked with youth in several capacities with Cub Scouts and as a coach in community league hockey and soccer.

Teacher A had no formal preparation to teach outdoor education other than school board in-service activities and participation in some camping experiences. His major reason for participating in outdoor education programs was stated as interest.

Teacher B. Teacher B was female and twenty-three years of age. It was her first year of experience after completing a four-year education degree with a major in Special Education. Since it was her first year, the only grade she had taught was the grade six class currently being instructed. She was instructing her class in all subject areas except Science. Her area of instruction at the residential camp was in the field of Language Arts.

Although she had held no other full-time jobs, she had worked during vacations as a playground worker, an institutional aide in a mental institution, and as a substitute teacher.

Teacher B had no formal courses in outdoor education and this was her first experience in a residential camp situation. She did, however, indicate outdoor interests such as camping, canoeing and hiking.

Table 3

Selected Characteristics of Teacher Involved in the Study

Characteristic	Teacher A	Teacher B	Teacher C
Sex	Male	Female	Male
Age	40	23	29
Years of Post-Secondary Education	6	4	4
Degrees	B.A., B.Fd. M.Fd.	B.Ed.	B.A., B.Ed.
Major/Minor	Economics	Special Education	Psychology/ English
Years of Experience	17	1	3
Grade Levels Taught	3 - 12	6	3 - 6
Subjects Taught	Elem. - all Jr. High - Geog., S.S. Economics Sr. High - Phys. Ed.	all	all
Courses Taken in Outdoor Education	0	0	0
Number of other jobs held dealing with youth (full-time)	0	0	1
Number of other jobs dealing with youth (part-time)	2	3	3

Teacher C. This teacher was male, twenty-nine years old and had completed two degrees giving him four years of training. He had majors in Psychology and English and three years of teaching experience in grades three to six teaching all subjects. During the year in which the study was conducted, Teacher C taught all subjects except Music to his students and, during the camp period, his area of instruction included Language Arts and Science.

Teacher C had held former full-time jobs as a retail clerk, market gardener and as a child care therapist. Part-time jobs which involved working with youth included 'youth worker', recreation coordinator and lay counselor with Division I age children (6 - 9). This teacher's former experiences working with youth were the broadest of the three teachers involved.

This teacher, too, had no formal preparation for involvement in outdoor education, however, he did have experiences for several months camping with problem children whose ages ranged from six to sixteen. He also indicated a strong interest in outdoor recreation activities such as hiking, fishing and camping.

Rater Training

Training consisted of approximately six hours of initial discussion on the scales and their meanings in order to clarify the categories in the minds of the raters. The trainers were two of the researchers who developed the instrument so the relative meanings of the categories remained constant across the studies in

which the instrument was used. Practice in the use of the instrument was then carried out in several schools not used in the study. Approximately six to twelve hours of discussion relative to the scales was used for purposes of further clarifying the use and meaning of the categories and correcting any misunderstandings which may have occurred. During the process, trainees were required to think of specific examples of teacher behavior for each of the graduations of each of the scales.

Further practical experience was obtained in different situations, both indoors and out-of-doors by both raters to see if the instrument was practical in different environments. Practical training continued until both raters achieved the criterion level of 80% considered to be adequate by the developers. Raters were checked both against the developers and against themselves for agreement. A total of at least six hours of practical experience in coding was obtained for each rater.

Rating Procedures

Three ratings of three minutes apiece were taken on each of the first four categories of Withitness, Overlappingness, Smoothness and Momentum with one minute between each rating for the purpose of recording the ratings. It was felt that a period of three minutes was necessary to obtain an impression of teacher behavior sufficient to make a judgment in each of the categories. During each three-

minute period, the rater examined the behavior sample observed for evidence of behavior relating to the four categories being considered. During the one-minute interval between ratings, a judgment was made and recorded for each of the four categories. Following the ratings of the first four categories, three ratings of three minutes apiece were done for the last four categories of Clarity, Persuasiveness, Warmth and Empathy, again using one minute between observational periods for recording the ratings. This procedure required approximately one half hour of class time.

The three ratings obtained for each category were averaged to obtain a mean rating for each category for each class period observed. These means were used to obtain reliability checks when two raters were present and for purposes of data analysis.

Four half-hour rating periods were obtained for each of the three time periods for each school used in this study. This resulted in six hours of coding time per teacher, two hours prior to the residential camp, two hours during the camp and two hours following the camp.

Inter-rater Reliability

Inter-rater reliability was calculated using percentage agreement between the two raters using the formula:

$$\text{Percentage agreement} = \left(1 - \frac{R_H - R_L}{4}\right) \times 100\ \%$$

where R_H and R_L represent the highest and lowest mean ratings respectively on any one category for any one period of observation,

with 4 being the maximum different possible on the five-point rating scale.

Inter-rater reliability figures obtained during the training period are presented in Table 4. As well, reliability checks were made during two phases of the data collection period of the study to ensure consistency of ratings. These checks were made during pre-camp observation as well as during the observations at camp. No checks were made during post-camp observations since the two previous checks indicated a good level of agreement and due to observational scheduling problems which negated the possibility of both coders being in the same classroom at the same time. Inter-rater reliability figures obtained during data collection are presented in Table 5.

The Instrument

As stated in Chapter I, the instrument used in this study was developed at the University of Alberta by a group of researchers during the year 1976. This section deals more in depth with the categories of the instrument and its application in the study. Each of the eight categories is explained separately and then use of the instrument in the camp settings is discussed.

The first four categories deal with the teacher's ability to manage the class and relate to deviant behavior control, managing more than one event at the same time, maintaining a smooth flow of goal-oriented events and a good pace or movement of the

Table 4

Inter-rater Reliability Measures on Eight High Inference Rating Scales During Training

	Percentage Agreement										
Variable	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9	Trial 10	Average Over 10 Trials
Withitness	82.5	100	75	90	40	92.5	82.5	100	92.5	100	85.50
Overlappingness	85	82.5	65	82.5	90	75	97.5	92.5	100	82.5	85.25
Smoothness	92.5	90	85	65	75	65	75	85	100	67.5	81.00
Momentum	85	75	75	92.5	67.5	75	80	92.5	75	82.5	80.00
Clarity	92.5	57.5	67.5	92.5	87.5	82.5	65	100	100	92.5	83.75
Persuasiveness	100	92.5	82.5	82.5	82.5	100	82.5	100	90	85	89.75
Warmth	100	100	82.5	100	82.5	92.5	92.5	90	82.5	92.5	91.50
Empathy	82.5	90	100	67.5	90	92.5	92.5	92.5	75	95	87.75

Table 5

Inter-rater Reliability Measures on Eight High Inference Rating Scales During Data Collection

	Percentage Agreement	
	Trial 1 (Pre-camp)	Trial 2 (During Camp)
Variable	Teacher A	Teacher B
Withitness	90	87.5
Overlappingness	90	85
Smoothness	92.5	82.5
Momentum	92.5	92.5
Clarity	82.5	90
Persuasiveness	90	100
Warmth	92.5	100
Empathy	95	87.5

lesson. The fifth and sixth categories relate to the teacher's ability to motivate students and provide clear, unambiguous instructions, while the seventh and eight categories are concerned primarily with the ability of the teacher to relate to his/her pupils on a more personal basis and to exhibit feelings toward his/her students as well as an understanding of their feelings and emotional responses.

Withitness

This category was derived from the work of Kounin (1970). It is defined by Kounin as "a teacher's communicating to the children by her actual behavior (rather than by simple verbal announcing: 'I know what's going on.') that she knows what the children are doing, or has the proverbial 'eyes in the back of her head'" (p. 80). The emphasis in this category is on communication either verbally or by behavior, and is representative of the teacher's attempt to control deviant behavior.

Whereas Kounin coded each separate occurrence of deviant behavior and the teacher's reaction to it, this instrument codes all occurrences during a three minute period as one gross score on a five point scale (See Table 6). If no instances of deviant behavior (i.e. non-task oriented) were observed, then no score was recorded during that period. This held true for all of the scales of the instrument.

Several possible errors in dealing with deviant behavior were included in this category. These included over-reacting,

timing errors, target errors or errors in consistency. Over-reacting might occur if a teacher severely punished a minor deviant behavior. Timing mistakes (reacting later or not at all) consisted of two types: the deviancy spread before it was desisted; or it increased in seriousness before the teacher reacted to it. Target mistakes were also of two possible types: the teacher may react to the wrong child or include children who were not exhibiting the deviant behavior; or the teacher reacted to a less serious behavior and ignored a more serious one occurring at the same time. Consistency errors were noted as being occurrences where the teacher varied his/her reactions to the same type of deviant behavior. That is, he/she could react strongly to the first sample of deviant behavior and mildly to the second occurrence.

The score obtained by a teacher on this category reflected the number of mistakes made in controlling or dealing with deviant behavior in the three minute observation period (see Table 6).

Overlappingness

The second category in the instrument was also taken from Kounin's (1970) work and relates to the ability of the teacher to deal with more than one event in the classroom concurrently. It examines the way in which a teacher handles interruptions and intrusions during the regular course of a lesson or ongoing activity

Table 6

Scoring Range and Meaning for the Category Withitness

1. The teacher makes frequent errors in attempting to deal with deviant behavior. He/she may over-react to a situation, may react late or not at all (timing), may be off target in his/her reprimands and/or may desist a less serious deviancy while overlooking a more serious deviancy.

2. Between 1 and 3.

3. The teacher sometimes makes errors in attempting to deal with deviant behavior, i.e., over-react, timing, target and minor-major deviancy, and sometimes makes no errors in desist attempts.

4. Between 3 and 5.

5. The teacher makes few of the above errors in attempting to deal with deviant behavior.

in the classroom. Perhaps the best examples of this concept are the potential management techniques exhibited during a Reading lesson in which the teacher is required to deal with several groups simultaneously. The way in which these groups or individual interruptions are handled and the smoothness with which they are dealt with is a measure of the teacher's overlappingness skill.

The concept does not involve a judgment on the part of the observer as to the correctness or incorrectness of the way in which the events are handled, only with "whether she manifested some act that evidenced her paying attention to both issues or to only one of either of the two issues. The act of 'attention to' might be a remark, a direction, or a simple look" (Kounin, 1970, p. 86). In other words, handling more than one event simultaneously could involve either verbal or nonverbal behavior on the part of the teacher.

Evidence of a lack of overlappingness occurs when a teacher exhibits one of two possible behaviors when confronted with two or more events. He/she might ignore the intrusive event and concentrate entirely on the event or he/she might drop the original event and concentrate solely on the intrusive event, ignoring the other until he/she had finished dealing with the interruption. It is important to note that the intrusive event need not consist of deviant behavior on the part of one or more pupils but could be a legitimate question from a pupil, or a planned part of the lesson.

> An overlapping issue is also present during child intrusions and child 'bring ins' when these occur at the time the teacher is engaged in some activity with a subgroup of children. Thus, if a child from the seatwork setting approaches the teacher with a paper in hand to show her while the teacher is working with a reading group, this event constitutes an overlapping situation. At this time, the teacher has two issues to deal with: the ongoing reading task and the child with the 'bring in'. As was the case with desist events, if the teacher was open at the time of the child intrusive event then this was the only issue present at the time. Such one-issue child intrusion events were not coded for overlapping. (Kounin, 1970, p. 86).

Overlappingness was also not coded when the ongoing activity consisted of intrusive events such as a question and answer period. This type of activity was judged to be a single ongoing event.

In this category, the teacher was given a rating of between one to five for each three minute segment observed depending on the amount of overlappingness exhibited (See Table 7). Again, if no instances of overlappingness occurred, as in a silent reading period, then no values were assigned for that observational segment.

Smoothness

The third category, again taken from Kounin (1970), was labeled Smoothness and is related to the ongoing flow of academic events. In this category, actions of the teacher which are not related to the progress of the lesson are noted. Examples of stimulus-boundedness, thrusts, dangles and truncations, and flip-flops were noted in assigning a score for this category.

Stimulus-boundedness occurs when a teacher allows himself/herself to be easily deflected from the onward progress of the

Table 7

Scoring Range and Meaning for the Category Overlappingness

1. The teacher almost always attends to only one issue at a time. He/she either remains immersed in one issue or drops it and goes all out for another. For example, the teacher, while working with one group, ignores deviant behavior in another group, or ignores intruding children from another group, or goes all out and becomes immersed in the deviance or intrusion.

2. Between 1 and 3.

3. The teacher sometimes attends to more than one issue at a time.

4. Between 3 and 5.

5. The teacher almost always attends to more than one issue at a time. He/she, while working with one group, is able to deal with deviance and intrusions, verbally and nonverbally.

lesson. Each intrusion acts as a new stimulus to which the teacher becomes attracted.

> The conditions for coding a stimulus-bound event occur when the teacher is engaged in some ongoing activity with a group of children, happens to become aware of some stimulus or event that is minor and unrelated to the ongoing activity, becomes distracted by this stimulus, and reacts to it with sufficient involvement to warrant judging that she is immersed in it to the point of dropping her focus on the ongoing activity. To be coded as a stimulus-bound event the following characteristics must be present: (1) The teacher is engaged in an activity with a group of children - she is not open; (2) A stimulus (a child behavior or an object) just "pops into" the teacher's field of attention (i.e., the teacher just happens to walk by it, see, or hear it); (3) The stimulus is not intrusive or intense; (4) The teacher reacts to the event in such a manner as to warrant saying it pulls her to it much as a magnet pulls an iron filing to its field; and (5) The teacher must get into, or immersed in the stimulus-induced event, and deflected from the ongoing activity for a noticeable amount of time. (A side comment would be insufficient to warrant coding an event as stimulus-bound). (Kounin, 1970, p. 98).

A thrust occurs when a teacher suddenly bursts in to the ongoing activities with a statement or question with no consideration of the appropriateness of the action in terms of the readiness of the children to receive it. It is similar in nature to a stimulus-bound event except that the event is started by the teacher's intent, not by an external stimulus. The teacher, in this instance, exhibits no sign of being aware of the group's readiness to receive his/her communication. "A thrust has a clear element of suddenness as well as an absence of any observable sign of awareness or sensitivity to whether the target-audience is in a state of readiness" (Kounin, 1970, p. 100). Thrusts can occur during transition points in a lesson where the teacher changes

suddenly from one activity to another without warning, or during recitation periods when the teacher switches the focus of the activity suddenly. The thrust may be closely connected to the goals of the lesson but must act in the nature of a sudden interruption in the ongoing flow.

Dangles and truncations are similar in nature. A dangle occurs when the teacher suddenly drops an ongoing activity and pursues another for a short period of time, eventually returning to the original activity, while a truncation is the failure of the teacher to return to the original activity. Dangles differ from thrusts in that they lack the suddenness of a thrust, and are generally a "fading out". They may occur at transition points during a lesson or during a recitation period, and involve leaving the first activity in a state of suspension or incompleteness.

When an activity is, to all intents and purposes, terminated and another activity is begun, then a return is made to the former activity for a short period of time, it falls into the category of flip-flops. These only occur during transition points in the lesson, or the conclusion of one activity and the commencement of another.

Scoring on this category consisted of a value of one to five based on the number of interruptions or interfering behaviors exhibited by the teacher. (See Table 8).

Table 8

Scoring Range and Meaning for the Category Smoothness

1. The teacher frequently acts in a manner which interferes with the ongoing flow of academic events. Actions of the teacher are not goal-oriented. He/she may pay attention to irrelevant or undue attention to intrusive details (stimulus-boundedness). He/she may burst in on children's activities with an order, statement or question (thrusts). He/she may shift back and forth from one activity to another and back again leaving things hanging in mid-air (dangles and truncations).

2. Between 1 and 3.

3. The teacher sometimes acts in a manner which interferes with the ongoing flow of academic events. Actions of the teacher are sometimes goal-oriented and sometimes are not, i.e., some stimulus-boundedness, thrusts, dangles and truncations are evident.

4. Between 3 and 5.

5. The teacher rarely exhibits the above interfering behaviors.

Momentum

This category dealt with the ability of the teacher to maintain a consistent pace for the lesson and involved slowing down the pace by overdwelling or fragmentation. Again Kounin's (1970) research provided the basis for this category. It is a management category in the sense that a consistent pace through a lesson should reduce dragginess of an activity and reduce boredom.

Overdwelling occurs when a teacher continues to dwell on an issue or activity in excess of what is necessary for the children to grasp the substance of the point being made. For instance, if a teacher asked ten students individually to spell the same word after it was spelled correctly by the first student, he/she would be overdwelling. Similarly a lengthy discourse on the merits of paying attention in class which interrupted a lesson based on some other concept, would be considered overdwelling. Concentrating on a minor concept to the point of boredom while neglecting the major point of a lesson or spending an inordinate amount of time dwelling on props (handing out papers, etc.) are also considered overdwelling.

Fragmentation is another type of slowdown in momentum produced when a teacher breaks down "an activity into sub-parts when the activity could be performed as a single unit" (Kounin, 1970, p. 105). For example, if the teacher requested individual members of a group to perform an activity singly when he/she could have the entire group perform the activity as effectively, this would be considered

to be fragmentation. Likewise, fragmentation would occur if the teacher breaks down an easily understood instruction into several sub-parts so that an instruction to put away one set of materials and take out another set would be fragmented into individual instructions to put away each of the materials one at a time.

This category was also scored on a five point scale with frequent slowing behaviors producing a low score over the three-minute observation period. (See Table 9).

Clarity

This category was adapted from a scale developed by Emmer (1972) and was used to determine the adequacy of the teacher's communications to the students. It basically evaluated whether or not the teacher was accurate in his/her presentations of lesson material or instructions and was able to deliver the information with a minimum of extraneous talk and at a level of difficulty appropriate to the students.

A five point scale was also used to code this category. (See Table 10). A high score on this category indicated the use of clear, concise directions, instructions and presentations as well as checks on student comprehension of the material given. A low score, on the other hand, indicated lack of precision when giving directions, inadequate or inaccurate information, failure to check for student comprehension, or use of material not suited to the level of the students.

Table 9

Scoring Range and Meaning for the Category Momentum

1. Teacher behaviors frequently slow down the pace of the lesson inappropriately. This is done by overdwelling on pupil behavior, a subpoint rather than a main point, physical props rather than substance, and on instructions or details to the point of boredom. It is also slowed down by fragmentation, i.e., dealing with pupils one at a time when it is appropriate and more efficient to deal with them as a group, or dealing with props one at a time rather than en masse.

2. Between 1 and 3.

3. Teacher behaviors sometimes slow down the pace of the lesson by overdwelling and fragmentation.

4. Between 3 and 5.

5. Teacher behaviors rarely slow down the pace of the lesson by overdwelling or fragmentation.

Table 10

Scoring Range and Meaning for the Category Clarity

1. The teacher, when giving instructions, answering questions or explaining material to the class, is unclear in her presentations. The presentations may be too complex, ambiguous, or make use of unfamiliar or unrelated concepts and terms. Answers given are not specific but are vague and evasive. The teacher uses qualifiers (e.g. maybe, sometimes, it could be, etc.) excessively. The teacher rarely gives appropriate examples, uses illustrations, states objectives, summarizes, or checks for student understanding.

2. Between 1 and 3.

3. The teacher when giving instructions, answering questions or explaining material to the class, is sometimes clear and sometimes unclear in his/her presentations.

4. Between 3 and 5.

5. The teacher when giving instructions, answering questions or explaining material to the class, is clear in his/her presentation. Adequate use of examples and illustrations are made, objectives are clearly stated, main points are summarized, and adequate checks of student understanding are made.

Persuasiveness

The sixth category was derived from a scale of therapist persuasive potency resulting from the work of Truax. (Truax et al., 1968). It dealt with the ability of the teacher to motivate students to perform tasks related to the lesson being taught. Willingness of students to perform lesson-related tasks became an important aspect during observation of this category. If the students required considerable coercion through the use of threats or punishments, the teacher was thought to be lacking in persuasiveness. Students in a class observed with a teacher who had a high degree of persuasiveness worked quickly and willingly with minimal loss of time and effort during transition periods. This did not, however, indicate that a teacher need choose all lesson-related objectives or goals for the students or that total disciplinary control indicated development of a high level of persuasive skill. The potential of the teacher to be a highly persuasive individual in other social contexts, perhaps less structured in nature, was also considered during observation. Generally, willingness and eagerness of students to perform lesson-related tasks indicated persuasive skills working not because of force, but out of respect and caring and were considered to be more effective in achieving the goals of the lesson.

Again, a five point scale was used to indicate the observed persuasiveness of each teacher in the study. (See Table 11).

Table 11

Scoring Range and Meaning for the Category Persuasiveness (Teacher's Ability to Motivate)

1. The teacher is the kind of person that communicates a socially weak and uninfluential person. He/she is frequently unable to get students to do work related to the objectives of the lesson.

2. Between 1 and 3.

3. The teacher is the kind of person that communicates an average persuasively powerful person. He/she is sometimes able to motivate students to work and sometimes unable to do so.

4. Between 4 and 5.

5. The teacher is the kind of person that communicates a socially influential or persuasively powerful person. He/she is almost always able to get students to do the work related to the objectives of the lesson.

   NOTE: This level does not imply that the teacher has chosen all the goals or objectives for the student.

Warmth

This category was also taken from the work of Truax (1971) and was based on his concept of non-possessive warmth in therapist-client relationships. This category indicated, basically, how the teacher felt about his/her students, and could be observed in her reactions, both verbally and nonverbally, to his/her students. Indications of negative responses and feelings toward students were looked for as were feelings of deep concern and caring. Verbal reactions to student behaviors and comments were examined for evidence of warmth by using the content of the verbalization as well as the tone as indicators. Posture, manner, facial expression, and other aspects of "body language" provided still further indicators of the teacher's relationship with his/her students.

A five point scale as indicated in Table 12 was used to code each teacher and to ascertain the level of warmth exhibited. The scale indicates both extreme rejection and extreme caring of students in the observation setting.

Empathy

The last category considered was that of empathetic understanding of the student by the teacher and was measured by the Carkhuff revisions of the Truax scales for Empathetic Understanding. (Carkhuff, 1969, p. 174-175). This variable assumes that a teacher acts as a helper in much the same way as a therapist does in a client-centered relationship in counseling.

Table 12

Scoring Range and Meaning for the Category Warmth[1]

1. The teacher gives explicit evidence of rejection of the student, his/her ideas, experiences, opinions or feelings. Criticism is harsh and gives explicit evidence of a negative feeling for the student expressed by the teacher.

2. The teacher is mechanical and/or passive in his/her responses. Mild criticism, a lack of concern or ignoring, provide implicit evidence of disinterest in the student.

3. The teacher provides no explicit or implicit evidence of dislike or rejection of the student. He/she does not criticize nor is there a clear expression of warmth, i.e. there is interest shown but not warmth.

4. The teacher accepts, allows pupil ideas, experiences, opinions, and feelings. There is implicit evidence of warmth and respect through praise and encouragement.

5. The teacher gives explicit evidence of a deep caring, prizing, and valuing of the student, and this is made clear to the student. Expectations of the student's highest and best is pressed for, indicating a deep respect. Voice tone and manner give evidence of a close relationship.

[1]Adapted from scales authored by C.B. Truax.

The category itself examines the way in which a teacher relates to his/her students by understanding their feelings and represents a deeper form of communication than is examined by looking at clarity or persuasiveness alone.

It deals specifically with the ability of the teacher to communicate to the student that he/she knows what the student is feeling and furthermore, that he/she understands the student's feelings. This, too, was coded on a five point scale (See Table 13) and, as with the other seven categories, if no instance of empathetic communication or potential empathetic communication presented itself, no coded number was given. There were many coding periods in which opportunities for empathetic understanding did not occur. This was partially due to the nature of normal classroom procedure where the teacher is usually involved in dealing with groups of students. Coding of a category such as empathy requires that a teacher deal with individual students. For example, if one of the three-minute coding sessions occurred during an independent research period in which no child communicated with the teacher, no opportunity for empathetic understanding by the teacher presented itself and therefore no coded number was given.

It is also important to note that the description of the scoring scale for this category (Table 13) indicates that teacher behavior is also considered when scoring for the category. For example, if an opportunity for expression of empathetic understanding occurred, but the teacher ignored it, this could represent a score

Table 13

Scoring Range and Meaning for the Category Empathy[1]

1. The verbal and behavioral expressions of the first person either do not attend to, or detract significantly from, the verbal and behavioral expressions of the second person in that they communicate significantly less of the second person's feelings than the second person has communicated himself/herself.

2. While the first person responds to the expressed feelings of the second person, he/she does so in such a way that he subtracts noticeable affect from the communications of the second person.

3. The expressions of the first person in response to the expressed feelings of the second person are essentially interchangeable with those of the second person in that they express essentially the same affect and meaning.

4. The responses of the first person add noticeably to the expressions of the second person in such a way as to express himself/herself.

5. The first person's responses add significantly to the feeling and meaning of the expressions of the second person in such a way as to (1) accurately express feeling levels below what the person himself/herself was able to express or (2) in the event of ongoing deep self-exploration on the second person's part, to be fully with him/her in his deepest moments.

[1]Carkhuff Revisions of the Truax Scales.

of one on the scale. Likewise, behavioral expressions of students could be considered to be opportunities for empathetic understanding on the part of the teacher. If a student, for instance, while working on a problem at his/her desk exhibited facial expressions of anger, frustration, unhappiness or enjoyment, these could be construed to represent codable situations. If these occurred, however, while the teacher was otherwise occupied and was unable to observe the student's expressions, no opportunity to code was considered present, In other words, to code the category, the teacher must be in a position to be aware that a given student has feelings to which he/she could respond empathetically.

Administration of the Instrument

Once the schools and teachers had been identified, and training in the use of the instrument commenced, it became necessary to schedule observation periods. Accordingly, the timetables of all teachers were obtained and examined for suitable observation periods. As well as the six hours of coding time necessary for data collection, a total of one hour was spent in each of the three classrooms prior to the actual data collection. This familiarization period was used to acquaint the students with the observers and their presence in the classroom as well as to answer student questions. The observers had met and talked with each teacher prior to this and both students and teachers were requested to ignore the presence of the coders as much as possible.

The observers made every effort to be present in the classroom prior to the start of the period to be observed and were generally seated near the back of the classroom to reduce the possibility of interference in the lesson. Observer movement in the classroom was kept to a minimum and only occurred when the teacher moved to a position where coding from the back of the room would have been impossible.

When scheduling for observational visits, only those periods were considered in which the subjects were taught which would also be taught at the camp. Since Teacher A only taught Social Studies and would be teaching mapping at the camp, his timetable was acceptable. In the case of Teacher B and Teacher C, however, subjects such as Mathematics, Music, Art, and Physical Education were eliminated from their timetables so consistency of behavior across disciplines could be maintained. Teachers were also consulted as to the possible occurrence of periods of testing, or other unrepresentative types of periods which would reduce the effectiveness of the observation and these were also eliminated.

Since it had been decided to maximize the time between coding periods to provide time for changes to stabilize, at least one full week was allowed between observational periods. The remaining time after completion of these requirements was randomized using a table of random numbers (Tuckman, 1972, p. 369-370). The teachers were notified regarding the periods chosen and schedules were produced for the coders to cover the

required periods. Blocks of instructional time at the camps were randomized in the same manner as were the coding periods in the post-camp observational period. These schedules were not changed with the exception of coding at the camp of School B. Reorganization of the schedule at this camp was necessitated by the occurrence of widespread sickness which resulted in the camp ending one full day sooner than was expected. One observational period was shortened for the same reason.

Since the final week of school during the year is generally not representative of typical classroom interaction (report cards given out, room cleanup, examinations, etc), it was decided to attempt to have all coding completed prior to that week. Table 14 shows the coding schedule used for both schools.

As mentioned previously, this study was originally to form part of a larger one yet to be completed. Use of a second instrument in conjunction with the one used in this study necessitated the hiring of two coders trained in the use of that instrument. These coders were available only at specified times and scheduling therefore had to reflect their availability.

Method Used To Analyze Data

Data obtained during this study from the observational instrument were analyzed using descriptive and inferential statistics and the results are explained in Chapter IV. Since the instrument itself generates means, t tests were employed

to determine if significant differences occurred. Some self-reporting techniques were used and are reported in this chapter as well as Chapter IV.

Summary

This chapter gave a description of the schools and teachers involved in the study. The instrument used was identified and each of its variables discussed. Methods of rating and inter-rater reliability were explained as were the procedures for gathering the data and analyzing it.

Table 14

Coding Schedules for Data Collection

	Pre-Camp	Camp	Post-Camp
School A	May 16 - 27	June 8 - 10	June 20 - 24
School B	May 9 - 13	May 30 - June 3	June 13 - 17

Chapter IV presents the data collected and the results of analysis. A comparison of observational ratings with teacher self-ratings on the instrument used in the study is presented. Teachers' perceptions of changes in student-teacher relationships are also discussed.

CHAPTER IV

RESULTS AND DISCUSSION

Since comparisons between teachers would be questionable due to the small number of teachers studied and since the object of this study was to see if behavior changed, results are presented by teacher and category within each setting. Results are also presented for each teacher's self-rating on the instrument and compared with mean ratings by observer for the initial classroom setting. Finally, questionnaire results regarding the teacher's perception of changes in the student-teacher relationship are presented and discussed.

Results of Comparisons of Observer Ratings

Teacher A

Withitness. Table 15 shows Teacher A's average mean scores for each setting. Teacher A indicated that he was more 'withit' during the camp than either before or after the camp. In fact, the teacher returned to exhibiting the same amount of withitness following the camp that he portrayed prior to the camp. The change in average mean score for this category was significant ($p < .01$) for both settings. In other words, Teacher A was significantly higher in withitness during the camp when compared with before, and significantly lower in withitness after the camp compared with during the camp.

Overlappingness. Teacher A increased significantly ($p < .01$) in overlappingness during the camp when compared with before the camp (see Table 15). This indicated that the teacher increased in his ability to deal with more than one issue concurrently. After the camp, the teacher's average mean score dropped significantly ($p < .05$) for overlappingness, although it was still significantly higher ($p < .05$) than prior to the camp.

Smoothness. A significant increase ($p < .05$) occurred in smoothness during the camp as compared with before the camp, indicating that the teacher was less subject to stimulus-bound events, thrusts, dangles and truncations, and flip-flops (see Table 15). The teacher was more able to maintain a smooth flow of academic events during his lessons at camp. The average mean score dropped significantly after camp ($p <$ [redacted]) to a level below that recorded prior to the camp, although the difference between the average means prior to and after the camp was not significant.

Momentum. The ability of Teacher A to maintain the pace of the lesson increased significantly during the camp ($p < .01$) and decreased to the previous level following the camp (see Table 15). This decrease was also significant at the .01 level, and indicated more frequent periods of overdwelling and fragmentation.

Clarity. Teacher A also rated higher in clarity during the camp (see Table 15) and returned to the same level following the camp. Both the increase and decrease in clarity in both settings were significant at the .05 level of confidence.

Table 15

Summary of Average Means in All Settings

Teacher A

High Inference Category	Average Mean Before Camp	Average Mean During Camp	During vs. Before	Average Mean After Camp	After vs. During	After vs. Before
Withitness	3.2	4.3	**	3.2	**	
Overlappingness	2.9	4.2	**	3.5	*	*
Smoothness	3.4	3.8	*	3.0	*	
Momentum	2.7	3.9	**	2.7	**	
Clarity	3.3	3.9	*	3.3	*	
Persuasiveness	3.5	4.0	**	3.1	**	
Warmth	2.7	3.3	**	2.8		
Empathy	1.5	1.0	*	1.3		

*Significance claimed $p < .05$

**Significance claimed $p < .01$

Persuasiveness. An increase in the ability of Teacher A to persuade students to do work related to the goals of the lesson was noted in the camp situation (see Table 15). This difference was significant at the .01 level of confidence. A decrease in this ability, also significant at the .01 level, was recorded following the camp. The level of persuasiveness exhibited by the teacher after the camp was lower than prior to the camp, but was not found to be significantly different.

Warmth. Teacher A exhibited greater warmth during the camp (see Table 15). This change was found to be significantly different to behavior shown prior to the camp ($p < .01$). Although he returned to approximately the same average mean level following the camp, the range of mean scores for the four observation periods precluded significance being obtained (see Appendix B).

Empathy. A lower average mean score was recorded during the camp on the empathy category (see Table 15). This difference was found to be significant at the .05 level. While an increase in empathy was shown following the camp, this increase was not great enough to achieve significance. This category was the only one for this teacher which showed a decrease during the camp situation and a corresponding increase following the camp. The increase after the camp was not great enough to match the average mean for observations prior to the camp.

In general, Teacher A showed significant increases in scoring on all categories except empathy during the camp when compared with average mean ratings shown prior to the camp. The empathy category worked in opposition to the trend for the other categories by decreasing significantly. The trend reversed following the camp and all categories except warmth and empathy showed significant decreases in average mean ratings. Warmth followed the trend but was not significant, and empathy increased but also failed to attain significance.

A comparison of average means for pre-camp and post-camp periods indicated a change significant at the .05 level only for overlappingness. This indicated that Teacher A exhibited a greater degree of the ability to attend to more than one issue concurrently after the camp period than prior to the camp period.

Teacher B

Withitness. No significant differences were observed on the average means for this category in any of the settings (see Table 16). This teacher did not indicate any change in her ability to deal with deviant behavior. The average means for each setting were quite high indicating that she made few errors in dealing with deviant behavior. She did, however, exhibit a greater range in the means of observed sessions at camp (see Appendix B), with the first observation period scoring lowest and the final period scoring highest.

Overlappingness. Teacher B decreased in the camp setting in her ability to deal with more than one issue concurrently. This decrease was significant at the .05 level (see Table 16). The average mean at camp remained the same following the camp.

Smoothness. The high rating for Teacher B on smoothness obtained before the camp was maintained during the camp, but dropped significantly in the period following the camp ($p < .05$). This decrease was found to be significant at the same level when the average mean for the post-camp period was compared with the pre-camp period (see Table 16). In other words, the teacher's ability to maintain a smooth flow of academic events decreased following the camp. In this case the range of means of observed instruction periods following the camp was greater than the ranges for the other two settings (see Appendix B).

Momentum. The average mean rating for this category dropped during the camp period and this decrease was found to be significant at the .05 level when compared with the average mean rating for the periods of observation prior to the camp (see Table 16). The average mean rating for momentum dropped still further after the camp, but was not significant when compared to the observed periods at camp. Significance was obtained ($p < .05$) for the comparison of the pre-camp and post-camp means. Teacher B, therefore, exhibited a reduced ability to maintain the pace of the lesson during the camp and this ability was reduced further after camp. Again, the range of means for each observation period

Table 16

Summary of Average Means in All Settings

Teacher B

High Inference Category	Average Mean Before Camp	Average Mean During Camp	During vs. Before	Average Mean After Camp	After vs. During	After vs. Before
Withitness	4.1	4.1		4.0		
Overlappingness	4.3	3.8	*	3.8		
Smoothness	4.3	4.3		3.5	*	*
Momentum	4.0	3.5	*	3.1		*
Clarity	3.8	3.8		3.9		
Persuasiveness	3.6	3.6		3.9		
Warmth	3.4	3.5		3.7		
Empathy	1.8	1.8		2.1		

*Significance claimed $p < .05$

was greatest in the post-camp period (see Appendix B).

Clarity. Teacher B showed no significant changes in her ability to provide clear, concise, accurate directions and information to students in any of the three settings (see Table 16). The range of means for observed periods was smallest during the camp, and greatest following the camp (see Appendix B).

Persuasiveness. Again no significant differences were found in comparing average means for any of the settings (see Table 16). This teacher did increase slightly in the post-camp period in her ability to persuade students to do tasks related to the objectives of the lessons.

Warmth. The teacher's ability to indicate feelings of caring for her students increased slightly from the pre-camp period to the camp period and showed another slight increase from the camp period to the post-camp period (see Table 16). None of the differences in average means was found to be significant.

Empathy. Average mean scorings on this category showed no difference between the pre-camp period and the camp period. A slight increase was noted in the average mean for the post-camp period indicating that Teacher B was more able to respond empathetically to student feelings after the camp (see Table 16). No significant differences were found in average mean comparisons for any of the settings.

The analysis of average mean scores for the three settings showed few significant differences for Teacher B and no strong trends in behavior change were noted. There was a slight tendency for Teacher B to score lower during the camp and even lower in the post-camp setting on management categories of Overlappingness, Smoothness, and Momentum. The average mean scores for teacher instructional and interpersonal categories rose slightly during the post-camp period.

Teacher C

Withitness. Teacher C's average mean scores rose during the camp period and dropped during the post-camp period to the same level as prior to the camp (see Table 17). None of the average mean differences was significant. It should be noted, however, that Teacher C was rated at the highest possible level for this category on two of the four observation periods at camp (see Appendix B). An unusual feature of the coding on this category for Teacher C is the absence of rating for the fourth observation period in the camp setting (see Appendix B). As was mentioned earlier in the discussion of the procedures for using the instrument outlined in Chapter III, if no example of the variable is shown during the three minute coding period, no score is given in that variable. Due to the nature of the instructional session and the period of the session in which the coding was done, no opportunities arose for the teacher to display behavior relating to this category. Although segments of other categories for other

Table 17

Summary of Average Means in All Settings

Teacher C

High Inference Category	Average Mean Before Camp	Average Mean During Camp	During vs. Before	Average Mean After Camp	After vs. During	After vs. Before
Withitness	3.8	4.4		3.9		
Overlappingness	3.7	4.3	*	4.5		**
Smoothness	4.1	4.1		4.3		
Momentum	4.0	3.6		4.2		
Clarity	4.1	3.5	**	4.6	**	**
Persuasiveness	3.3	4.6	**	3.8	**	
Warmth	3.8	4.8	**	3.8	**	
Empathy	2.3	2.5		2.1		

*Significance claimed $p < .05$

**Significance claimed $p < .01$

teachers and in other settings also received no value for the reason stated above, in only two cases did the entire coding time for one session pass without a rating occurring for at least one segment for that category.

Overlappingness. The average mean score during camp for this category rose significantly ($p < .05$) when compared with the pre-camp period suggesting that the teacher become more able to deal with more than one issue concurrently (see Table 17). The average mean score continued to rise slightly after the camp although it was not significant when compared with during the camp. A significant difference ($p < .01$) was noted, however, when the average means for the pre-camp and post-camp periods were compared. In other words, the rising trend of this category became even more significant after the camp when compared to before the camp. The final average mean of 4.5 indicated that this teacher exhibited a very high degree of overlappingness after the camp.

Smoothness. No significant differences were observed in any of the comparisons of average mean scores for any of the settings. Teacher C exhibited a fairly high level of smoothness which was consistent across the three settings with a slight tendency to rise in the post-camp period (see Table 17).

Momentum. Teacher C's score on this category was highest after camp and lowest during camp indicating that he had the most trouble maintaining the flow of the lesson while at camp (see Table 17). None of the differences between the means was significant for

the category. Even though his lowest score was obtained at camp, the two other means were 4.0 and 4.2 indicating a high degree of momentum in the classroom setting.

Clarity. The average mean rating for this category dropped significantly ($p < .01$) for the period at camp compared with the pre-camp period (see Table 17). The rating then rose to a higher level after the camp and was found to be significant ($p < .01$) when compared with mean ratings for the pre-camp and camp periods. This teacher was, then, more clear when giving directions and presenting material after the camp than he was in either of the other two settings.

Persuasiveness. [illegible]nificant change in the ability to motivate students to do work relating to the objectives of the lesson was noted during the camp period (see Table 17). This change indicated a greater degree of persuasiveness and was significant at the .01 level. Following the camp the average mean rating dropped from 4.6 to 3.8, again significant at the .01 level. However, the difference in pre-camp and post-camp average mean rating was not found to be significant.

Warmth. Again a significant increase from the pre-camp to the camp period in average mean ratings was noted ($p < .01$). The average mean rating for this teacher of 4.8 during the camp was the highest rating for any teacher in any setting and represents a high degree of caring for students. This rating was not maintained after camp and dropped to 3.8 which was found to be

significant at the .01 level when compared with the average mean rating during camp.

Empathy. No significant differences in average means were found for this teacher on this category. There was a slight rise from the pre-camp to the camp setting, and the average mean rating dropped after the camp to a point lower than either the camp or pre-camp periods.

Few general trends were noted for Teacher C although significant increases were found in the categories of Overlappingness, Persuasiveness, and Warmth during the camp compared with prior to the camp. Increases in overlappingness and clarity were significant when the post-camp average means were compared to those from the pre-camp period. A significant decrease was noted for the category of Clarity during the camp compared with prior to the camp, and Persuasiveness and Warmth dropped significantly following the camp.

Within the group of teacher management categories, all categories tended to remain the same or rise during the camp with the exception of Momentum which dropped. The teacher instructional categories were not consistent, with Clarity decreasing and Persuasiveness increasing. The interpersonal categories, however, both rose during the camp, but only Warmth was significant.

Teachers' Self-ratings on the Instrument

The comparison of self-ratings on the high inference instrument with observer ratings was made only for the initial pre-camp classroom setting since this setting seemed to be most indicative of the teacher's normal classroom behavior. Accordingly, when they were asked to rate themselves, the teachers were instructed to consider their normal classroom behavior. Rating comparisons with the camp setting were not done due to possible ecological effects, while rating comparisons with the post-camp period may not be representative due to the recent camp influence.

Teacher A.

Teacher A rated himself close (less than .5 difference) to observed mean ratings on the categories of Overlappingness, Smoothness, Momentum, and Warmth (see Table 18). Overestimations were made on Withitness, Clarity, Persuasiveness and Empathy. The largest difference between observer ratings and self-ratings was an overrating of 1.5 for Empathy.

Teacher B.

This teacher was close only on Warmth. She consistently under-rated herself on all categories except Empathy where she overrated herself by 2.2. She also had the largest difference of all the teachers on Overlappingness where she was 2.3 points lower than the observed average mean rating. This teacher generally had

Table 18

Self-Ratings of Teachers Compared to Observer Ratings in the Pre-Camp Setting

High Inference Category	Self Rating	Observer Rating	Self Rating	Observer Rating	Self Rating	Observer Rating
Withitness	4	3.2	3	4.1	4	3.8
Overlappingness	3	2.9	2	4.3	3	3.7
Smoothness	3	3.4	3	4.3	3	4.1
Momentum	3	2.7	2	4.0	2	4.0
Clarity	4	3.3	3	3.8	3	4.1
Persuasiveness	4	3.5	3	3.6	3	3.3
Warmth	3	2.7	3	3.4	4	3.8
Empathy	3	1.5	4	1.8	4	3.3

high ratings prior to the camp, but rated herself as average or lower except for Warmth.

Teacher C.

Self-ratings on Withitness, Persuasiveness and Warmth were close to observer ratings for this teacher (see Table 18). Other self-ratings were generally lower than observer ratings except for Empathy which was rated higher by 1.7 than the observer rating. The highest difference for this teacher occurred in the Momentum category where the difference between the self-rating and the higher observer rating was 2.

In summary, the general trend was for Teachers B and C to rate themselves lower than observer ratings with Teacher B rating herself lower in seven categories and Teacher C rating himself lower in five categories. Teacher A, on the other hand, rated himself higher than observer ratings on seven categories.

Teachers' Perceptions of Changes in Student-Teacher Relationships

Several questions on the Teacher Data Sheet (see Appendix A) which gathered teacher presage data and self-ratings on the instrument, were oriented toward establishing whether or not the teacher perceived a change in his/her relationship with the students.

All teachers indicated that they felt their relationship with their students had improved, although Teacher A felt his position as director and administrator of the camp interfered

somewhat with this relationship. Teacher B felt that the relationship had improved through sharing common experiences, while Teacher C felt that his pupils thought he was more 'human' and the opportunity to spend more unstructured time with his students had contributed to this.

All teachers felt they had shown facets of themselves which they were not able or willing to do in the classroom. Teacher A felt he was "a little more loose" in relating to his students but mentioned he was conscious of his role as an administrator and that this hampered him. He also mentioned that he felt his age was a factor in not "letting go". Teacher B felt she was able to show a more personal side of her life to her students while Teacher C saw many ways in which he related differently "from a simple change in clothes, i.e. hiking boots, to joking and personal interaction possible only in smaller groups". Only Teacher A felt that he minded showing these facets to his students and, again, he suggested this was possibly a function of age.

Summary

This chapter has presented the results of examination of raw data from the observations in which the High Inference instrument was used. A summary of the significant changes in behavior for each teacher in each setting is provided below.

Teacher A:

1. increased in "withitness" during the camp. ($p < .01$)
2. decreased in "withitness" after the camp. ($p < .01$)
3. increased in "overlappingness" during the camp ($p < .01$)
4. decreased in "overlappingness" after the camp ($p < .05$)
5. was higher in "overlappingness" after the camp than before the camp. (p .05)
6. increased in "smoothness" during the camp. ($p < .05$)
7. decreased in "smoothness" after the camp. ($p < .05$)
8. increased in "momentum" during the camp. ($p < .01$)
9. decreased in "momentum" after the camp. ($p < .01$)
10. increased in "clarity" during the camp. ($p < .05$)
11. decreased in "clarity" after the camp. ($p < .05$)
12. increased in "persuasiveness" during the camp. ($p < .01$)
13. decreased in "persuasiveness" after the camp. ($p < .01$)
14. increased in "warmth" during the camp. ($p < .01$)
15. decreased in "empathy" during the camp. ($p < .05$)

Teacher B:

1. decreased in "overlappingness" during the camp. ($p < .05$)
2. decreased in "smoothness" after the camp. ($p < .05$)
3. decreased in "smoothness" after the camp compared with before the camp. ($p < .05$)
4. decreased in "momentum" during the camp. ($p < .05$)
5. decreased in "momentum" after the camp compared with before the camp. ($p < .05$)

Teacher C:

1. increased in "overlappingness" during the camp. ($p < .05$)
2. increased in "overlappingness" after the camp compared with before the camp. ($p < .01$)
3. decreased in "clarity" during the camp. ($p < .01$)
4. increased in "clarity" after the camp. ($p < .01$)
5. increased in "clarity" after the camp compared with before the camp. ($p < .01$)
6. increased in "persuasiveness" during the camp. ($p < .01$)
7. decreased in "persuasiveness" after the camp. ($p < .01$)
8. increased in "warmth" during the camp. ($p < .01$)
9. decreased in "warmth" after the camp. ($p < .01$)

Results of teachers' self-ratings on the instrument were compared to observer ratings in the school setting before the camp and presented as well as teachers' perceptions of improved student-teacher relationships.

Chapter V discusses the findings in terms of the problems outlined in Chapter I, and presents conclusions and recommendations for further research.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary

Introduction

Using ecological psychology, which basically suggests that the behavior of individuals changes in different settings as a result of environmental pressures, as a theoretical base, this study has attempted to determine whether or not the behavior of teachers changes in a residential camp setting compared with the classroom setting. It also attempted to determine if any changes carried back to the classroom setting. Two additional analyses were done of teachers' self-ratings on the instrument used in the study as compared to observer ratings, and on the teachers' perceived changes in the student-teacher relationship. The instrument used was an eight category high inference observation schedule developed by a group of researchers at the University of Alberta in 1977. The eight categories consisted of:

1. Withitness - the ability of the teacher to communicate to students that she is aware of what is happening in the classroom.
2. Overlappingness - the ability of the teacher to deal with more than one issue concurrently.
3. Smoothness - the ability of the teacher to maintain the flow of the lesson, avoiding irrelevant or intrusive details.

4. Momentum - the ability of the teacher to maintain the pace of the lesson without slowing or fragmentation.
5. Clarity - the ability of the teacher to provide clear, concise directions and information.
6. Persuasiveness - the ability of the teacher to persuade students to do work relating to the goals of the lesson.
7. Warmth - the ability of the teacher to provide evidence of prizing and caring for his/her students.
8. Empathy - the ability of the teacher to display evidence of understanding student feelings.

Procedure

Coding for this study was done on three teachers at two residential camps by two observers trained in the use of the High Inference Instrument. Each teacher was coded for a total of six hours, two hours in class prior to the camp, two hours during the camp and two hours following the camp. Each coding session was one half hour in length and consisted of three three-minute observations for each of the eight high inference categories. The first four categories were coded together, followed by the second four categories. Mean ratings for each category for each coding period were established and average mean ratings for each of the three settings were determined. These average ratings were then compared to determine if any differences were significant. The results of

this analysis were presented in Chapter IV. Each teacher was also requested to provide background information as well as a self-rating on each of the eight categories of the instrument. Finally, several questions pertaining to perceived changes in the student-teacher relationship were answered by each of the teachers.

Conclusions

Problem 1

The object of Problem 1 was to determine if changes in certain aspects of teacher behavior occur as a result of a residential camp experience. All three teachers observed in this study exhibited some changes in behavior in terms of the categories used in the observation instrument. Teacher A showed the greatest number of changes in the outdoor setting. These changes in behavior were apparent in all categories and were significant at least at the .05 level of confidence. All changes were toward a higher rating level in each of the categories with the exception of Empathy which decreased in rating. Teacher C exhibited changes in four categories which were significant at least at the .05 level of confidence. Overlappingness, Persuasiveness and Warmth categories increased in rating while the rating for Clarity decreased. Teacher B showed the least number of behavior changes with decreases in Overlappingness and Momentum ratings.

It would appear from the changes mentioned that the outdoor setting produced changes in behavior of all teachers, but those changes were not necessarily related to similar categories or in similar directions. Generally, Teachers A and C increased in ratings, while Teacher B tended to decrease. Perhaps the fact that it was Teacher B's first year in teaching contributed to the small number of changes she exhibited. Certainly the two teachers who were more experienced both in teaching and in dealing with children demonstrated more behavior changes at the camp.

Problem 2

The second object of this study was to attempt to determine whether or not any changes in behavior at camp as measured by the instrument remained constant or continued when the teacher returned to the classroom. In Teacher A's case, all eight categories of behavior returned to ratings close to those obtained prior to the camp except for one category - Overlappingness - which was found to be significantly higher than the pre-camp rating, yet significantly lower than the rating obtained during camp. The decrease in Warmth to the pre-camp level and the increase in Empathy to the pre-camp level were not found to be significant, even though they were consistent in direction with the other ratings.

Again, Teacher B failed to show many significant changes except in Smoothness, where she showed a significant drop. The two categories which dropped during the camp, either remained at the same level (Overlappingness) or dropped further (Momentum). Except for the ratings for Overlappingness, Smoothness, and Momentum, Teacher B's behaviors were reasonably consistent across all three settings. The four management categories which had quite high ratings prior to the camp did show a tendency to decrease after the camp, while the teacher instructional and interpersonal categories showed a slight tendency to increase after the camp, but not significantly.

Teacher C showed only three significant changes in the post-camp period compared to the ratings made at camp. Two of these, Persuasiveness and Warmth, decreased in rating, while Clarity increased. Values for the other categories were not changed sufficiently to achieve significance; however, all categories reflected some movement.

While few of the changes in ratings for Teacher B and C achieved significance, it should be noted that only one of the ratings for any of the teachers remained the same after the camp compared with during the camp.

Therefore, it appears as if increases or decreases in the type of behavior measured by the instrument in this study did not remain constant following the residential camp.

Problem 3

The results of the self-ratings of the teachers in this study compared to observer ratings were presented in Chapter IV. Teachers B and C tended to rate themselves lower on most categories than did the observers. Teacher A tended to rate himself somewhat higher on all categories, yet more of his ratings were closer (within .5) to observer ratings than either of the other teachers. Teacher B in particular tended to rate herself much lower than observer ratings found her to be. Perhaps this reflection on her self-image with respect to these categories of behavior was a function of her lack of experience in the classroom. Both of the more experienced teachers rated themselves somewhat closer to the observer ratings. Caution must be used when interpreting the results of this comparison, however, and it must be realized that none of the teachers had the background in category meanings possessed by the observers.

Problem 4

All of the teachers in this study indicated that they perceived improved student-teacher relationships as a result of the camp experience. They all felt they had revealed facets of themselves which their students had not seen before, but only Teacher A minded revealing these facets. As far as the teachers in this study were concerned, the residential camp had a beneficial effect on their relationships with their students.

Implications

What implications seem to be present as a result of this study? What can be said about residential camps and their effects on behavior? What possibilities exist in terms of behavioral investigations in different settings? This section outlines some of the possible implications that the findings of this study have suggested with regard to teachers, residential camps, and the High Inference categories used in this study.

Implications Dealing With Teachers

It seems clear from this study that at least some behaviors of teachers change in a residential camp setting. What this concept could mean in terms of teaching and pre-service preparation is extremely important. The results of this study seem to support the theories of ecological psychologists such as Barker (1965) and Gump (1974a) who suggest that different environments coerce different behaviors from the individuals inhabiting those environments. It seems clear that we need to know more regarding these effects in order to prepare teachers to be able to utilize setting coercive effects in efforts to provide a better education for students. If teachers are affected by different settings and their behavior changes, and through the work of Barker and Gump (1964) it is clear that student behavior is different in different settings, then we must acquaint teachers with this knowledge so they are able to structure environments to enhance learning.

Unfortunately, not enough information is yet available to tell us what effects different environments will have. Studies are yet to be done categorizing the elements of settings to find commonalities which can be used in the structuring of environments. It is the "Stone Age" of ecological psychology. It seems Barker (1969) was correct when he called for an "archives" of data on ecological effects. This archives or data bank could provide data on types of settings, characteristics of settings, and, more importantly, types of behaviors elicited by those settings.

Furthermore, while Gump's (1974) concept of synomorphy suggests that different people in the same setting should tend to exhibit similar behavior, the fact that teachers in this study did not tend to exhibit behavioral changes in the same manner on the eight categories seems to indicate lack of support for his concept. In other words, there was little or no consistent, similar change in behavior as measured by the instrument which was common to all teachers. Each teacher changed in behavior in a different manner and in different categories. The only category in which significant changes occurred for all the teachers was Overlappingness during camp. Similar changes did not occur for even this category since the ratings of two teachers rose during camp while the rating for Teacher B fell during the same period.

However, the apparent lack of support mentioned above may not actually exist. As Wright (1951) pointed out, each individual brings with him a set of background experiences which may affect his behavior in any given setting. It is clear, then, that before sweeping statements regarding the differences of teachers in the same setting can be made, more must be known of that teacher's background. This has already been suggested by examining the behavior changes of Teacher B in this study. It is possible that the small number of significant behavior changes is due to her background. That is, she may have been influenced by the fact that it was her first year of teaching and she may have been fearful of allowing the environment to influence her. Obviously, we need more data on which to judge these environmental effects. It is possible, too, that consistent synomorphic behaviors were exhibited by the teachers in this study and perhaps by many other teachers in similar programs, but the limited scope of the study and the limited range of behaviors examined did not result in the discovery of consistent behavior patterns.

Implications Regarding Residential Camps

The proliferation of outdoor programs (Passmore, 1972; Risdon, 1974) necessitates study into possible environmental effects. This is particularly true if student-teacher interaction and relationships are improved by outdoor residential programs. Perhaps the timing of these programs has been wrong. Most occur

near the end of a school year and, if the effects teachers can have on students are improved through use of these programs, they might better occur early in the year.

Results of this study have implications, too, for residential camp programs in which the teacher is more of a bystander than a participant. It appears that it is important for the teacher to be totally involved with students in the program in order to achieve maximum benefit from relations with the students. Much of this effect may be lost if programming is done by persons other than the regular classroom teacher.

The type of teacher participating in these programs may also be important. Some teachers are less willing to change than others and it would appear of little benefit to coerce teachers to become involved who are not interested or resist change. This concept was of paramount interest to Brekke (1977) who studied the "readiness" of teachers for outdoor education in Whitehorse. He concluded "That the decision to be involved in outdoor education should be of either an individual or collective type seems very important when the long-range effects are considered" (p. 110). It seems obvious that a better camp will result from people willing and committed to carry it out.

Implications Regarding the High Inference Categories

Although the use of the categories of the instrument used in this study seemed appropriate, the results indicate that some changes and extensions are necessary. The basic three category classification of management concepts, instructional concepts, and

interpersonal concepts is a useful one, but the eight categories identified for study do not provide enough information. Results indicating changes in rating in different directions for different teachers are not sufficient to be able to make specific statements regarding potential changes. A low inference category of behaviors corresponding to the high inference concepts needs to be coupled with the original instrument to ascertain specifically what aspects of the teachers' behaviors changed. Perhaps there were specific behaviors which changed and were common to all teachers, but due to the nature of the instrument used, these were not identified.

Furthermore, the category of Empathy, while still a useful concept in light of the findings regarding student-teacher relationships, would appear to need revision to be effective. Although the sample size in this study was small, no teacher in the study scored over 3 on the rating scale and therefore only one significant difference was found. This same problem was encountered by both Eggert (1977) and Marland (1977) who also found low ratings on this scale. Marland (1977) found that

> All ratings on the empathy scale were below three, indicating that the teachers' verbal responses to the expressed feelings of students did not mirror the affect and meaning conveyed in the original student expressions. (p. 160)

Eggert (1977) discovered no significant relationships between empathy and the product measures used in his study and stated:

"High level empathic responses as defined by the scales used in this study were rarely heard" (p. 169). The Empathy scale also produced the largest number of coding episodes where no value was given due to a failure to observe empathic behavior during that episode. In fact, out of a possible 108 coding episodes for all teachers, 42 were not coded for Empathy. Perhaps this may have some relation to the Principle of Suppressing Emotions identified by Marland (1977) and Conners (1978) whereby teachers seem to withhold showing their emotions to their students. If the principle does, indeed, occur in the classroom, the Empathy scale may need considerable revision to be able to identify empathic episodes. Basically, unconscious use of this principle by teachers means that for differing reasons, such as for classroom management or to maintain pupil self-concept, teachers do not express the emotions they may be feeling. Perhaps it operates as part of the teacher "role" in the classroom and is related to the synomorphy of the classroom setting and the expected behavior of teachers toward students. The category of Warmth may also require revision in light of this principle, although all three teachers increased in their ratings of Warmth during the camp as compared with prior to the camp. The revised Scales may indicate that the Principle of Suppressing Emotions does not function in the same manner at a residential camp.

Recommendations for Further Research

The results of this exploratory study appear to raise several questions which might well indicate necessary further investigation. The following list poses some of these possible studies.

Questions Related to Theory

1. What is the relationship of behavior setting theory to differing types of residential camp environments? Are there different camp settings and what differences in coercive effects do they produce?
2. What specific behaviors of teachers are connected with increases in student-teacher rapport? Can these be measured in terms of Gump's (1974a) behavior setting units?
3. What specific behaviors are encompassed by the High Inference instrument and how are these related to achievement of educational goals?
4. What effect would a residential camp experience with students have on the role perceptions of a teacher in training? Would a beginning teacher modify the image he/she holds of "teacher" as a result of such an experience?
5. Does the importance of the three general categories of teacher behavior used in this study change in a camp

situation? For example, do interpersonal categories become more important than management categories?

6. What is the effect of formal instructional periods during the camp on student-teacher interaction? Are there role differences in instructional and noninstructional periods for students and teachers? What are the attitudes of students and teachers toward each other during these periods?
7. Is an in-depth longitudinal study of an exploratory nature on one teacher in both classroom and camp settings possible? Would this produce any basic principles of behavior different in these two settings?
8. What other instruments exist for determining differences in behavior of teachers in the two settings? Do these instruments reflect a different, perhaps more appropriate, theoretical base for explaining these differences?

Questions Related to Practice

1. What effect do changes in teacher behavior as a result of outdoor education programs have on pupil product measures? What effect do they have on pupil affective development?

2. Is there a typology of camp settings? Do different camp settings produce or coerce different teacher behaviors?
3. What effect do camp settings have in terms of coercing synomorphic behaviors of pupils? How can these be manipulated?
4. What is the situation at present regarding residential outdoor education programs in Alberta?
5. What is the optimum length of time for a residential camp program? Do positive effects decrease with a longer program?

Concluding Statement

This study seems to indicate that teacher behavior does change in a residential camp setting. This information should provide an incentive for further study into these changes and the effects they may have on both teachers and students. In this way an appreciation may come for the learning possible with the understanding and use of the outdoor classroom. It seems appropriate to conclude with a statement by Sharp, one of the foremost advocates of outdoor education.

> Camping stands at the very peak of outdoor education: and school camping, in many school systems, has come to play a very important part in the learning process. School camping is not something to do when school is over; but something you do in order not to miss the benefits that are so easy to gain when a group goes into the open to live and study together. (1952, p. 21).

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APPENDIX A

TEACHER DATA SHEET

1. Name: _____

2. Age: _____

3. Post-secondary education
   a. Degree(s): _____ Year(s) completed: _____
   b. Major/minor: _____
   c. Route (Plan B, B.Ed. after degree, etc.): _____

4. Teaching experience
   a. Number of years: _____ b. Grade levels: _____
   c. Subjects taught: _____

5. Occupation of father, mother: _____

6. What other full-time jobs have you held? _____

_____

_____

7. What other positions have you held which enabled you to work with youth? _____

_____

_____

8. What preparation have you had for outdoor education? _____

_____

a. In courses? Please elaborate: _____

_____

_____

b. In experiences? Please elaborate: _____

_____

_____

9. Do you feel the outdoor experience improved your relationship with your pupils? If so, in what way(s): _____

_____

_____

a. What about students from other classes which you normally do not teach? _____

_____

10. Do you think that you revealed facets of yourself which the students in general had never seen at school? Please explain:

_____

_____

a. Did you mind revealing such facets? _____

11. Did you perceive students behaving in ways different from the ways you normally associate with them at school? Illustrate, if possible, with examples that pleased you, displeased you, or merely confounded you. _____

_____

_____

12. To what extent were your academic objectives met through the outdoor school experience? _____

_____

_____

13. To what extent were the student's learnings enhanced by the outdoor setting? _____

_____

_____

a. To what extent did the setting detract from the learning experience? _____

_____

14. To what degree were the students able to progress in the affective or motor domains as a result of the outdoor experience? Were there planned and unplanned events in the two domains which you could use as examples?

_____

_____

_____

15. Kindly consider the following items and circle the rating which indicates the degree to which you display the behavior indicated.
NOTE: It is not intended that you should infer that 'good' teaching is represented by a rating of 5 in any or all areas. This is only an attempt to describe some teaching areas.

a. WITHITNESS - the degree to which the teacher communicates to the students that he/she knows what is happening in the classroom. This is not to say that the teacher does not know what is happening, only the degree to which this is communicated to the students.

little communication — great communication

1 2 3 4 5

b. OVERLAPPINGNESS - the degree to which the teacher is able to deal with more than one issue at a time.

little overlappingness — great overlappineness

1 2 3 4 5

c. SMOOTHNESS - the degree to which the teacher interrupts the ongoing flow of academic events.

many interruptions — few interruptions

1 2 3 4 5

d. MOMENTUM - the degree to which the teacher slows down the pace of the lesson through dwelling on pupil behavior, a sub-point, physical props, or on individuals and small groups.

great slowing — little slowing

1 2 3 4 5

e. CLARITY - the degree to which the teacher is clear and explicit in answering questions or presenting material and in checking student understanding.

little clarity great clarity

1 2 3 4 5

f. PERSUASIVENESS - the degree to which the teacher is able to get students to do work related to the objectives of the lesson.

little persuasiveness great persuasiveness

1 2 3 4 5

g. WARMTH - the degree to which the teacher gives explicit (observable) evidence of warmth (caring, prizing and valuing) toward students.

little warmth great warmth

1 2 3 4 5

h. EMPATHY - the degree to which the teacher is able (through vocalization) to empathize with student feelings and problems.

little empathy great empathy

1 2 3 4 5

APPENDIX B

MEANS FOR OBSERVATION PERIODS IN ALL SETTINGS - TEACHER A

High Inference Categories	Before Camp				During Camp				After Camp			
	1	2	3	4	1	2	3	4	1	2	3	4
Withitness	3.7	3.0	3.3	2.7	4.0	4.3	4.7	4.3	3.3	4.0	-	2.3
Overlappingness	3.7	2.0	3.0	3.0	3.7	4.3	4.7	4.3	3.7	4.3	3.3	2.7
Smoothness	3.3	4.0	3.0	3.3	3.7	4.0	4.3	3.7	3.7	4.0	2.0	2.3
Momentum	3.3	3.0	2.7	1.7	3.3	4.3	3.7	4.3	3.3	3.7	1.3	2.3
Clarity	3.3	4.0	3.0	2.7	3.7	4.7	4.3	3.0	3.3	3.7	3.0	3.0
Persuasiveness	3.3	4.0	3.3	3.3	4.3	4.0	4.0	3.7	3.7	3.7	2.7	2.3
Warmth	3.0	2.3	2.5	3.0	2.3	3.0	4.0	3.7	3.3	3.0	2.7	2.3
Empathy	2.0	1.3	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.7	1.3

MEANS FOR OBSERVATION PERIODS IN ALL SETTINGS - TEACHER B

High Inference Categories	Before Camp				During Camp				After Camp			
	1	2	3	4	1	2	3	4	1	2	3	4
Withitness	4.0	4.0	4.5	4.0	3.7	4.0	4.0	5.0	4.0	3.7	4.0	4.3
Overlappingness	3.7	4.3	4.5	4.7	3.3	3.7	3.7	4.3	3.7	3.3	3.3	4.7
Smoothness	4.3	4.0	4.7	4.0	3.7	4.7	4.0	5.0	3.7	2.7	3.0	4.7
Momentum	4.0	3.7	4.0	4.3	3.0	3.0	4.0	4.0	4.3	2.3	2.3	3.3
Clarity	4.0	4.3	3.0	4.0	4.0	4.0	3.3	4.0	5.0	3.3	3.7	3.7
Persuasiveness	4.0	3.3	4.0	3.0	3.0	4.0	3.7	5.0	4.7	4.0	3.7	3.3
Warmth	3.7	3.3	4.0	2.7	3.7	3.3	3.7	3.0	4.0	3.3	4.0	3.3
Empathy	1.5	1.7	3.0	1.5	2.0	2.0	1.0	2.0	3.0	3.0	2.3	1.0

MEANS FOR OBSERVATION PERIODS IN ALL SETTINGS - TEACHER C

High Inference Categories	Before Camp				During Camp				After Camp			
	1	2	3	4	1	2	3	4	1	2	3	4
Withitness	4.3	4.0	3.3	3.7	5.0	5.0	3.3	-	3.7	4.0	3.3	4.0
Overlappingness	4.0	3.7	3.3	3.7	4.0	5.0	3.0	5.0	4.3	4.7	4.3	4.7
Smoothness	4.0	4.0	3.7	4.7	4.0	5.0	3.0	4.3	4.3	5.0	3.3	4.3
Momentum	4.3	4.0	3.3	4.3	3.0	4.0	2.7	4.7	4.3	4.0	4.0	4.3
Clarity	4.0	4.0	4.3	4.0	2.7	3.3	4.0	4.0	4.3	4.7	4.7	4.7
Persuasiveness	4.3	3.0	3.3	2.7	4.3	5.0	4.0	5.0	4.0	3.3	3.7	4.0
Warmth	3.7	3.7	3.7	4.0	5.0	4.5	4.0	5.0	3.7	4.0	3.5	4.0
Empathy	2.5	2.0	2.3	1.0	2.0	2.0	2.5	3.0	2.0	1.0	3.0	2.0