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The Ohio State University Ph.D. 1983

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THE EFFECTS OF INSERVICE EDUCATION ON THE TEACHING EFFECTIVENESS OF EXPERIENCED PHYSICAL EDUCATORS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

by

Mary M. O'Sullivan, B.Ed., M.A.

* * * * *

The Ohio State University
1983

Reading Committee:
Dr. Daryl Siedentop
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Dr. John Hough

Approved by

Department of Physical Education, School of Health, Physical Education & Recreation
To my MOTHER and FATHER, who have been
a constant source of love
and encouragement
ACKNOWLEDGEMENTS

I would like to express my deepest appreciation to Dr. Daryl Siedentop, my advisor and model of professional behavior and from whom I learned the importance of standards for the continued growth of our profession.

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Special thanks to Missy, Donna, Will, Richard, and Hans who helped collect the data. Their frequent words of encouragement were very much appreciated.

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VITA

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Studies in Behavior Analysis. Professor John Cooper
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CHAPTER I

INTRODUCTION

Declining enrollments in schools and uncertain economic conditions have led to a nationwide decrease in the number of new teachers employed and a stabilization of the current teaching staffs (Bunder, 1977; Anderson, 1982). Faced with the prospect of a more stabilized teaching force, Krajewski (1977) has suggested increased attention be afforded to develop further the skills of teachers presently in the schools. Wood and Thompson (1980) predicted the 1980's to be a decade of staff development in education. They argued that for schools to survive, staff development must become a major thrust. Demands on teachers for more academic knowledge and pedagogical skill increases, as the diversity of pupils increases, as parental concern about the quality of teaching becomes more acute, as schools assume responsibility for what were previously considered parental concerns, and as pedagogical and academic knowledge accumulates.

The result has been a rapid increase in inservice training programs over the last several years. The number of educators conducting and participating in inservice education is staggering. Joyce (1976) calculated there was about one inservice instructor for every eight teachers in American schools. Yet, when specific schools were studied intensively, it was found teachers received only a few hours of assistance per year.
Educators define inservice education in many different ways. To some it is an optional hour-long workshop after school. To others, it is a required year-long series of classes on a given topic. The purposes of inservice education are not clear either. Proponents of inservice education who consider the goal to be the development of teachers' teaching competencies, thereby increasing their effectiveness in the classroom, are rivaled by educators who viewed the goals of inservice going beyond what they term "mere technical training" to provide staff development for educators that incorporates life long professional growth and recognizes the need to respond to educators as developing adults. Answers to such questions as what ought to be the goals of inservice, who ought to set these goals, and how ought they to be evaluated differ sharply depending on one's philosophy. Haberman (1983:i) has attributed the "primitive stage of inservice education" to the sharp distinctions in philosophy among educators regarding these issues.

Much has been written about the topic of inservice education. The number of publications listed in Education Resources Information Clearinghouse (ERIC) currently numbers 9,200 (Stroher, 1983). Most of the papers published, however, are non-empirical. In a review of the literature on inservice training programs, Lytle (1983) concluded that much of the literature reflected "the accumulated wisdom" of the leading pedagogues rather than empirical findings from controlled settings. Nash and Ducharme (1983:34) reported that if the research demonstrated anything, it was that inservice education is a "virginal research area deficient in conceptual comprehensiveness and testable hypotheses." Larry Locke (1982:20), in a recent review of research in physical education, reported inservice education in physical education as "the single territory for
investigation which remains truly virgin." He suggested re­search of any kind, descriptive or interventionist, qualita­tive or quantitative, would be welcome.

The goals of the study described in this report derive from a concern to improve the teaching skills of experienced teachers within their work environment. The justification for such research on teaching to occur in the naturalistic setting is well documented (Berliner, 1976; Nixon & Locke, 1973). An inservice education supervision package was de­signed and implemented with three experienced physical edu­cators to elicit significant teacher behavior change which, in turn, would increase the amount of student learning during their physical education classes. There was an implicit assumption that improved teaching skills, demonstrated in the work environment, would lead to increased student ach­ievement. The success of the supervision program would be judged, ultimately, by its effect upon instructionally oriented (as distinct from managerially oriented) on-task student behavior in physical education lessons.

The teacher effectiveness literature was reviewed to ascertain which teacher, student, and class variables would be most appropriate for systematic observation. The specific variables chosen for observation, Teacher Verbal Interaction patterns with students, Allocation of Activity time within classes, and Student behavior during lessons have been the most promising variables to emerge from the last decade of teacher effectiveness research (Berliner, 1979; Rosenshine, 1979; Siedentop, 1983; Brophy, 1981). The supervision pack­age employed to improve the teaching skills of the experi­enced teachers in this study was chosen on the basis of a series of successful preservice supervision studies comple­t ed at The Ohio State University. The series of programmatic research projects demonstrated significant changes in student
teaching behavior during their practicum experience (Darst, 1974; Dodds, 1975; Cramer, 1977). The specific methodology of supervision (observation, analysis, and targeting of specific behaviors for improvement) drew heavily on the applied behavior analysis literature. The effectiveness of systematic data collection of teaching, the provision of specific feedback, and the setting of targets for behavior change have been successful procedures in modifying human behavior and, specifically, teacher behavior (Cooper, Thomson & Baer, 1970; Van Houten & Sullivan, 1975; Speidel & Tharp, 1978).

A critique of the literature on supervision evidenced a persistent neglect by researchers to study the direct impact of specific models of supervision on the teaching behaviors of their inservice teachers. Secondly, as Smyth (1981) had reported, there has been an unfortunate lack of interest in the findings of research on teaching by authors writing about supervision. The design, implementation, and evaluation of the supervision model for experienced teachers used in this study reflected a concern for the methodological limitations of previous studies. The intervention procedures employed in this study were drawn from the behavior analysis literature. The specific variables chosen for observation were drawn from the teacher effectiveness literature.

The use of systematic observation and intervention packages to improve the teaching effectiveness of experienced physical educators is a recent development in physical education research (Birdwell, 1979; Whaley, 1980; Beamer, 1982). The effects of the supervision process on increasing teacher and student behaviors have been mixed. The need for systematic replication of these studies is evident and a sense of understanding of the mixed results is vital to the future
work in inservice education. The first national confer­
ence on inservice programming in physical education (Dodds
& Rife, 1983) attests to the growing awareness of this im­
portant area of teacher education, physical education.

Statement of the Problem

The last decade has provided a wealth of descriptive
data that is more similar than different on what is happen­
ing in the gymnasium of Canada, The United States, and Europe.
Teachers of Physical Education typically spend a great deal
of time "managing, getting organized, moving from place to
place, and getting equipment out and put away" (Siedentop,
1983:58). The greatest amount of student time is spent
waiting or transitioning from one activity to another. The
classroom atmosphere is one of frequent correction and little
praise.

The findings from the teacher effectiveness literature
have highlighted a pattern of teaching that produces high
rates of learning time and has been labeled direct instruc­
tion. When the above scenario is compared to the direct in­
struction strategy (Rosenshine, 1979), which involves suffi­
cient time devoted to instruction, where student performance
is monitored, feedback is frequent, immediate, and academi­
cally oriented, and learning takes place in a convivial aca­
demic atmosphere, the contrast is apparent. If physical
education teachers hope to have their students achieve a
level of proficiency in specific motor skills and to enjoy
such learning experiences, then the scenario just described
for physical education needs to be improved upon. It seems
the continued existence of physical education programs in
schools is dependent upon an improvement in the quality of
such programs. The problem to be addressed is whether ex­
perienced teachers can be provided with the necessary know­
ledges, skills, and attitudes through a systematic inservice
program that will hold them accountable for significant behavior change and answerable for the quality of programs they offer to students.

**Purpose of the Study**

The purpose of the study was to examine the efficacy of a behavioral model of inservice supervision toward the improved effectiveness of experienced physical educators with specific regard to the establishment and maintenance of a positive learning environment and increased class time devoted to activity and student involvement with the subject matter. The behavioral supervision model provided teachers with systematically collected data on their teaching behavior during a series of researcher-teacher conferences when new targets for teacher and/or student behavior were set and suggestions and strategies discussed on how these targets might be attained in subsequent lessons.

**Research Questions**

There are four specific questions this study attempted to answer through implementing a behavioral model of inservice supervision.

1. Can teacher verbal interaction patterns be modified to provide an increased focus on student skill responding?

2. Can teachers verbal patterns of behavior be modified to provide a more positive learning environment by increasing teacher praise and positive feedback to students while decreasing the frequency of desist behaviors?

3. Can teacher planning and the organization and
management of classroom events be improved through the intervention conference to increase the percentage of class time allocated to Activity.

4. Can the proposed intervention package increase student Task Engagement and ALT-PE(M) during Physical Education lessons?

Delimitations

1. This study was delimited to the observations of three experienced female teachers of physical education in an elementary, middle, and high school.

2. The study was delimited to the observations of students in suburban school settings.

3. The study was delimited to the behaviors of five high school students, three middle school students, and six elementary school students during their physical education lessons.

4. The study was delimited to the observations of the three physical education classes during 10 weeks of spring quarter physical activities.

Limitations

1. The observation of teacher and student behavior was limited to specific and precisely defined behaviors.

2. The observations were limited to a representative sample of teacher and student behaviors, using an interval recording procedure rather than continuous recording.
3. The observations in each lesson were limited to the three designated (target) students.

4. The results of the study were limited to the three teachers who enrolled in the course to work with the investigator in improving their teaching skills.

5. The researcher was one of the coders in the study.

Assumptions of the Study

The following were assumed to be true and pertinent to the study:

1. The selection of students for observation were representative of the students participating in the class.

2. The interval recording procedure employed in the observation of teacher and student behavior provided a representative sample of behavior to be found from continuous observation of behavior (Hall, 1971).

3. The teacher and student behavior observed were representative of behavior on those days not observed.

4. Increases in student involvement in the subject matter are positively related to increases in student learning.

5. That the behaviors observed for female experienced teachers and their students would not differ significantly from classes of male experienced teachers and their students (Siedentop, 1983).
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<td>- Holding individuals or groups responsible for the achievement of certain objectives (Halpin, 1979:201).</td>
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<td><strong>Activity episode</strong></td>
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<td>- Refers to class time when the primary focus is on motor involvement in physical education activities.</td>
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<td><strong>ALT-PE(M)</strong></td>
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<td>- Student engagement in a subject matter oriented motor activity in such a way as to produce a high degree of success.</td>
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<td><strong>Answerability</strong></td>
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<td>- The provision of an accurate account of one's actions without being liable to sanction for failure to meet specific obligations.</td>
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<td><strong>Behavioral Supervision Model</strong></td>
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<td>- The systematic observation and collection of data on teacher and student behavior in physical education classes. Presentation of the data was made to the teachers. Suggestions and targets to improve specific aspects of their teaching were discussed during conferences.</td>
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<tr>
<td><strong>Cognitive episode</strong></td>
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<td>- Refers to class time when the primary focus is on knowledge and the evaluation of knowledge related to physical activity.</td>
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<td><strong>Direct Supervision</strong></td>
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<td>- Models of supervision that involve direct observation of teacher and student behaviors in the work setting.</td>
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<tr>
<td><strong>Graphic feedback</strong></td>
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<tr>
<td>- The data for teacher and student behavior presented in graphic form to the teacher during the conference sessions.</td>
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**Indirect Supervision**  - Out of class services directed at the professional development of the teacher in terms of improving their knowledge of instructional design, planning, subject matter content, and classroom management techniques.

**Inter-observer Agreement**  - The percentage of agreement for how often two observers watching one subject and equipped with the same definitions of behavior, see it occurring at the same time (Baer, 1977).

**Inservice teachers**  - The three experienced teachers who signed up to take Physical Education 889 to improve their teaching skills and consented to be subjects for this study.

**Interval Recording System**  - A decision regarding teacher and student behavior and Class Context was made every 15 seconds. Each of the three target students was coded for five seconds during that interval.

**Intervention**  - Conference sessions held between the researcher and the teacher to discuss data collected from the teacher's lessons and to design strategies and set targets for specific teacher and student behaviors in subsequent lessons.

**Managerial episode**  - Refers to class time when students are not intended to be involved in physical activities.

**Reinforcement**  - Arranging for the presentation of the reinforcing event as a consequence of a behavior, resulting in an increase or maintenance of the behavior.

**Reinforcer**  - A stimulus contingent upon a behavior that increases or maintains the strength of the
Teacher Verbal Interaction

- The teachers verbal reaction to student behavior. Reactions were defined as either statements regarding general student behavior (Praise and Desists), statements on student skill responses (Positive or Corrective feedback) or teacher Prompts. Specific definitions of these components can be found in chapter III.

Time out

- A procedure in which the teacher removes a student from access to the sources of various forms of reinforcement for a particular time period. This removal is contingent upon the emittance of a response.
CHAPTER II

REVIEW OF LITERATURE

This chapter attempts to place the study within the context of the literature on supervision and teacher effectiveness, demonstrating how the study evolved from a model of supervision that has been successful in changing student-teacher behaviors in naturalistic settings (Siedentop, 1981). The chapter begins with a general review of the educational supervision literature followed by a critique of existing models of supervision, and finally a review of the teacher effectiveness research reporting some specific teacher and student process variables found related to pupil learning. The organization of the chapter is intended to provide the reader with an understanding of why a specific supervisory procedure was chosen by the researcher to modify specific teacher and student process variables in an effort to improve the teachers teaching skills and increase student learning. The chapter is divided into four sections: a state of the art review of educational supervision; a critique of the Clinical Supervision model; the application of behavior analysis to the supervision process; and the implications of the findings of teacher effectiveness research for a model of supervision.

A State of the Art Review of Educational Supervision

This section traces the history of supervisory practice and theory, outlines the four distinct purposes most often
ascribed to supervision, clarifies the terminology used within the supervision literature and how such terms are used within this chapter, and critiques the research on supervision in an effort to tease out an efficient and effective model of supervision.

A History of Supervision

Supervision of the educational process began in the Boston area in the early 1700's. Layman were given the responsibility of making inspectional tours of the schools to evaluate school facilities, upkeep, and progress of pupils (Burton & Brueckner, 1955). Improvement of instruction was not considered part of their function (Alfonso, Firth & Neville, 1975:16). Dickey (1948) described initial attempts at supervision as characterized by

1. authority and autocratic rule
2. inspectional emphasis
3. conformity to standards prescribed by the layman committee

The growth of cities and city school populations in the nineteenth century necessitated the transfer of responsibility for supervision from committees and their superintendents to school principals. The role of "supervisor" remained unchanged, however, from the previous century. Alfonso, Firth & Neville (1975:18) reported that:

any recognition of the principal as a supervisor in terms of improving instruction or as a leader in instructional improvement was not at that time considered germane or important in terms of the principal's responsibilities.

One of the first statements to include improvement in instruction as part of a principal's responsibility was set
forth by the Cincinnati School Committee in 1841 (Alfonso, Firth & Neville, 1975). These duties included:

1. seeing that students were constantly and profitably employed during school hours
2. holding examinations at the end of the month to attest to progress in the grades
3. reporting to the directors the degree of effectiveness of teachers
4. cooperating with the superintendent in advising teachers as to the best modes of instruction

It seemed that the principal was responsible to train teachers by acquainting them with new material and techniques. In return, the teachers were expected to produce a uniform, coordinated school program.

The trend in the early twentieth century toward the inclusion of specialized subjects in the school curriculum brought the advent of supervisory specialists and more purposeful visitations to teachers' classrooms were emphasized. The 1930's and 1940's saw the application of "democratic" and "cooperative" approaches to supervision (Lucio & McNeil, 1972). Of most significance was the increased emphasis upon participation and the shared responsibility of the teacher and supervisor toward increasing instructional effectiveness. The objective of supervision became the "maximum development of the teacher into the most efficient person she is capable of becoming" (Kyte, 1930). Wiles (1955) concluded that the 1950's ushered in the concept of the supervisor as the change agent in a process of trying to improve the effectiveness of the teacher.

The contemporary view of supervision is that a supervisor's main objective in collaboration with the teacher is the attainment of improved instruction and ultimately increased student learning. While the results of the
supervision research may be inconclusive and non-significant in many dimensions (Mosher & Purpel, 1972; Locke, 1979), most authors in the field of supervision today are agreed that the improvement of instruction and increased student achievement are the main objectives of the supervisory process.

The Purposes of Supervision

Within the educational community, supervision has many different meanings. These meanings derive from the ways in which supervision is done, whom it is done by, and for what purpose. Locke (1979) has ascribed four purposes to supervision:

1. The evaluative inspection of school teachers in order to generate information used in such decisions as hiring, firing, tenure, promotion, and rewards.

2. Efforts by administrators and subject matter specialists to improve the instructional effectiveness of teachers.

3. The oversight and tutelage provided by a cooperating practitioner during the apprenticeship of a student teacher.

4. The visitations of a training program representative during that same exercise.

Locke (1979) suggested that the only characteristic to link the four purposes of supervision together is that each involves the roles of the observed (teacher) and the observer (supervisor). This chapter is a review of the supervision research related to categories two and four and, to a lesser extent, category one. The focus will be on inservice supervision research as distinct from preservice supervision in an effort to shed some insight on effective training strategies to improve experienced teachers teaching skills
and the motor engaged time of their students.

Definitions of supervision terms

The looseness with which terms are used in the supervisory literature has led to confusion in efforts to establish a framework with which to examine supervisory issues. *The Dictionary of Education* (1957) defined supervision as:

all efforts of designated school officials directed toward providing leadership to teachers and other educational workers in the improvement of instruction; involves the stimulation of professional growth and development of teachers, the selection and revision of education objectives, materials of instruction and methods of teaching, and the evaluation of instruction.

Terms used in the literature such as "educational supervision", "general supervision", and "instructional supervision" are labels that can be used interchangeably with such a definition. Alfonso, Firth & Neville's (1975:35-36) definition of general supervision is cited below to illustrate the point:

behavior officially designated by the organization that directly affects teacher behavior in such a way as to facilitate pupil learning and achieve the goals of the organization.

If examined closely, the process of supervision described in both cases may include such diverse activities as systematic observation of teacher and student behavior in the naturalistic setting, the provision of inservice workshops, conferences, or university courses, and/or a variety of
other activities a supervisor may consider to be beneficial to the professional growth of the teacher. Most authors of supervision literature have defined supervision in similarly broad terms (Mosher & Purpel, 1972; Harris, 1975; Wiles & Lovell, 1975).

Cogan's classification of general and Clinical Supervision, as representing out-of-class supervision and in-class supervision, respectively, has been helpful. Cogan defined general supervision as:

those operations that are centrally concerned with the selection and preparation of curricula and materials of instruction, the development of inservice courses and workshops, the evaluation of instructional materials and coordination of auxiliary services for instruction...focuses its efforts primarily on out-of-class operations that are intended to improve in-class instruction.

Clinical supervision was defined as:

those efforts to improve instruction that involve in-class and face-to-face interactive relationships between teachers and supervisors (Denham, 1977:33).

The principal data of Clinical Supervision include records of classroom events: what the teacher and the students do in the classroom during the teaching-learning process.

While Cogan's distinction has been useful, a note of caution is necessary. The term Clinical Supervision not only describes a specific type of supervision, but it implies adherence to, and therefore acceptance of, a set of assumptions about how in-class supervision ought to be carried out.
The assumptions are listed below.

1. That improvement of instruction can be achieved only through a collaborative effort between the supervisor and the teacher. The helper-helpee relationship may be needed but ought not to become the dominant and characteristic style of interaction.

2. That Clinical Supervisors clearly divorce themselves from the role of rater or evaluator. It has no place in the supervisory model. Cogan (1973) has claimed a difference between evaluation as a function of teaching and evaluation as a judgmental assessment. This seems more a semantic differentiation than a practical one.

Because of the implicit value judgments associated with Clinical Supervision, the out-of-class and in-class processes of supervision will be termed "indirect" supervision and "direct" supervision, respectively. Direct supervision includes all models of supervision that involve direct observation of teacher and student behaviors. Such models may involve a more directive role by the supervisor in the supervision process and may also involve some form of evaluation of the teacher's instruction during and at the end of the supervisory period. Indirect supervision involved out-of-class services that are directed at the professional development of the teacher in terms of improving their knowledge of instructional design, planning, subject matter content, and classroom management techniques. The major focus of this review is on direct supervision techniques.

Research on supervision

Literature in the field of educational supervision abounds. Most of the literature has been devoted to the study of student teaching supervision (Andrews, 1964;
Johnson & Perry, 1974; Hunter, 1976; Ishler, 1977). There are, however, several books, articles, and some dissertations that deal with supervision beyond the bounds of preservice education (Goldhammer, 1969; Mosher & Purpel, 1972; Cogan, 1973; Alfonso, Firth & Neville, 1975; Lucio & McNeil, 1976; Blumberg, 1980). Much of the supervision literature was developed largely from "the experiences of those occupying supervisory positions and not from an empirical data base" (Alfonso et al., 1975:43). The research base upon which Alfonso et al. (1975) built their theory of supervision was educational leadership theory, communication theory, and change theory. The development of their theory of supervision without reference to the teacher effectiveness literature seems strange.

Even though there is much literature on supervision, the research base is small and often of poor quality. Mosher and Purpel (1972) and Alfonso, Firth and Neville (1975), among others, are critical of the empirical basis of much of the literature on supervision. Harris (1963), in a discussion on the quality of supervision research, commented that neither the quality nor the significance of the studies to that date warranted much more replication. Mosher and Purpel (1972) had a similar criticism regarding the methodological limitations of the studies in supervision. They typically employed checklists, mailed questionnaires, and recall as well as being "unsystematic and of a very limited scope" (Mosher & Purpel, 1972:49). Mosher and Purpel (1972) formulated a broad classification of existing supervision research as follows:

1. Questionnaire studies of factors in the selection and training of supervisors.

2. Questionnaire studies of supervisor role expectations.
3. Evaluation studies of individual supervisory programs.

4. Correlational studies of supervisor ratings and measures of the supervisor's personality and experience.

5. Correlational studies of the supervisor's ratings and measures of the teacher's personalities.

6. Comparisons of ratings by different supervisors.

Perhaps an analog to this type of research in the teacher effectiveness literature was the early research that sought to describe effective teachers in terms of specific personality characteristics and other pressage variables (Dunkin & Biddle, 1973). That line of inquiry in teacher effectiveness did not prove to be very fruitful (Medley, 1979). It has not been a very successful line of inquiry in supervision research either. Alfonso, Firth and Neville (1975) concluded, on the basis of a review of educational leadership theory, successful leadership was not a result of, and may not be predicted on the basis of, any known single personality trait or pattern of traits. While caution is urged here in generalizing findings in industrial and administrative personnel research to supervision research, no evidence to date has indicated that specific traits of supervisors will produce more effective supervision in education.

Mosher and Purpel (1972:50) commented on the available literature of research on teaching saying:

the inescapable conclusion to be drawn from any review of the literature is that there is virtually no research suggesting that supervision of teaching, however defined or undertaken, makes any difference.
The problem may lie, they suggest, with the "low validity and low reliability" of the supervisor's analyses or evaluations of teaching (p. 50). Mosher and Purpel (1972) suggested three reasons for such variation in the analysis of teaching behavior. First, there is an absence of consensus on what is the "right" way to teach. Second, is the unreliability of the rating instruments used in supervision. Rating scales have been the most common type of instrument used in supervision. Such scales have been described as examples of "vagonotic measurement" (Johnston & Pennypacker, 1980:73) and have been strongly criticized by Medley (1982). Third, variation may be attributable to supervisors themselves who either see different behavior when observing a class or, in seeing the same behavior, evaluate it differently.

A number of books and articles on supervision have provided a series of supervision theories, some of which have no data base (Wiles, 1950; Blumberg, 1980), while others (Alfonso et al., 1975; Lucio & McNeil, 1977) based their theories on research findings in the social sciences. The generalization of the results to education is a basic assumption of the authors. No evidence of the validity of such an assumption was presented.

The search for a model of supervision continues today. Such models include Clinical Supervision, action research in education, and a behavior analysis model. The behavior analysis model will be discussed in greater detail later, as will the Clinical Supervision model. Action research has been a method adapted for educational supervision from Kurt Lewin's social psychology research after World War II. While its use has risen and declined among educationalists, it has been implemented extensively in the United States,
Europe, and Australia. The major thrust of the supervision research in Australia has included both the action research model and Clinical Supervision (Kemmis, 1980; Henry, 1981; Smyth, 1981). Australians have used the action research model with indirect supervision activities and the Clinical Supervision model to try and improve the in-class instruction of the teachers. To date, the only available data suggest that actual behavior change of the teacher and the students in the classroom is not a focus of their data collection techniques (Smyth, 1980).

The focus of much of the supervisory research in recent years has been an attempt to establish an efficient method of supervision. The analogy could be made to the "methods research" described by Medley (1979) in the teacher effectiveness literature, a line of research that has been discontinued in that field because it did not lead to any real understanding of what made for effective instruction and what led to less effective teaching. The results were often inconclusive and, at times, contradictory. Medley (1979) suggested the reason for this was that while describing a "method of teaching", the unit of analysis was often the student and seldom, if ever, could the reader be sure that the "method" described was ever faithfully implemented by the teacher.

While several theories and methods of supervision have been disseminated to educators, little, if any, data on their effectiveness in demonstrating change in either teacher or student behavior has been provided with these theories and methods. The lack of such evidence has been a concern to some authors in the field in recent years (Mosher & Purpel, 1972; Denham, 1977; Neagley & Evans, 1980). If one is to judge present research in direct supervision by the comments of Sullivan (1980), things do not seem to have
changed much. She concluded that research on in-class supervision was totally inadequate and the only "on-going" line of research seemed to be a few annual doctoral dissertations. This, she argued, was not sufficient to answer the major questions of supervisory practice and was unlikely to lead to improved instruction and increased student learning.

Two major areas of supervision research will be outlined in the following sections. Clinical Supervision as a model of supervision is critiqued and the problems associated with it as a behavior change agent are discussed. The behavior analysis model of changing teacher behavior will be described and its implications for effective supervision of both preservice and inservice teachers outlined. The significance of these studies to this investigation was that they formed the empirical basis upon which the specific intervention package for this study was developed. These components will be outlined in more detail later in the chapter.

Teachers' perceptions of supervision

Evidence to date suggests that a paradox exists among educators as to the value of direct and indirect supervision (Fisher, 1959; Mosher & Purpel, 1973; Brimm, 1974; and Arnsworth, 1976). In a study of teachers in four small districts in California, Fisher (1959:504) noted:

teachers as a whole saw the supervisor's job as an inspirational, thought-provoking role in which the supervisor takes the responsibility to stimulate a broad look at the curriculum....(however) With a single exception among them, the teachers rejected
the idea that a supervisor's job is to make suggestions for changes in teacher behavior.

Cogan (1973) categorized teacher behavior as exhibiting two kinds of responses. The first he termed "an emotional allegiance to the concept of supervision" (p. 16), while teachers simultaneously responded with "an apprehensive rejection of all but a narrow range of approved supervisory behaviors" (p. 17). Cogan (1973:17) concluded that teachers try "to earn for themselves the blessing of supervision without any of the discomforts of classroom intervention." It seems teachers are more accepting of indirect than direct supervisory procedures.

The paradox may be understood in terms of teachers desire for help in improving their curriculum and instruction while at the same time perceiving the supervisor as being potentially dangerous (Heichenberger & Young, 1975). In surveying elementary teachers in Western New York about the kind of relationship they would like to have with supervisors, they found that 62 percent wanted a "helping relationship", 36 percent desired a "collegial relationship" while only one percent selected an "evaluator" or "rater" relationship (p. 210). It has not been possible to determine how these supervisory roles would differ specifically as definitions were not provided in the report.

The reviews of teacher resistance to supervision also are inconsistent. While Mosher and Purpel (1972:21) concluded that "by and large, teachers massively resist supervision, are suspicious of it, and are reluctant to consider its positive dimensions", Harris and Hartgraves (1972:78) concluded that "supervisors are highly valued, when teachers have close contact with them in project or other task-oriented situations." These findings are not contradictory
if one understands the difference between the direct and indirect methods of supervision. Teachers seem less receptive to direct supervision with its focus on specific teacher and student behaviors in the activity setting.

Mosher and Purpel (1972) criticized teachers' reluctance to have their teaching subjected to professional criticism. While authors, poets, scholars, and scientists are subject to active interchange of ideas, public examination of teaching is considered "an invasion of academic privacy" (p. 24). It seems the only form of control exerted on teachers is by their students. Such teacher resistance to supervision, Mosher and Purpel (1972) suggested, "derives, in part, from an historical identification of supervision with inspection and, in part, from the strength of the counter-tradition of "democratic supervision" (p. 24). This concept of democratic supervision emphasized the maintenance of:

the integrity of the individual at all times...and supervision techniques should stress warmth, friendliness, and leadership as a shared responsibility. They should avoid threat, insecurity, and didacticism" (p.17).

Holding teachers accountable for their teaching did not seem to be a priority.

Wood and Thompson (1980) tried to explain the paradox suggesting that such negative attitudes towards supervision may be a function of negative attitudes and administrators toward the teachers' commitment to professional improvement. Walker's findings from a survey of 113 Georgia teachers on what they considered irritating supervisory behaviors showed that "teachers perceived supervisors had little respect for their opinions, had a lack of integrity, and poor decision-making ability" (Walker, 1976:350).
Cogan (1973) summarized the many findings on teacher-supervisor relationships into the following themes:

1. A clear ambivalence about supervision existed between teachers. There was a dramatic contrast between a strong commitment to the principle of supervision yet a harboring of a deep seated distrust of direct supervisory intervention in the classroom.

2. A generalized rejection by teachers of supervision designed to work directly on changes in the classroom teachers' behaviors.

3. A desire to focus supervision on inspirational leadership and on broad objectives rather than on specifics.

4. A need for some teachers to seek protective anonymity of a group through a focus on group work rather than on individual programs of improvement.

5. A demand for self-supervision or for supervision mainly by invitation.

The nature of direct supervision can be best understood as a process that highlights the teacher's strengths and weaknesses. Direct supervision can be either a reinforcing or punishing experience, depending on the willingness and effectiveness of the teacher to improve their instructional and managerial skills.

How do supervisors view their work with teachers? Blumberg, Amidon and Weber (1967) reported that supervisors viewed their work in a very positive way and few felt their work with teachers as a waste of time. Blumberg concluded that supervisors and teachers seem to be caught in a curious bind of which not many people in education are aware. Teachers say they find supervision of little value. Supervisors say they find their work has substantial value. The
latter want to spend more of their time doing what their clients (teachers) consider to be relatively useless. The title of Blumberg's book *Supervision and teachers: a private cold war* (1980) seems an appropriate description of this paradox.

**Clinical Supervision as a Behavior Change Model**

Perhaps one of the most well known supervision models in recent years has been the Clinical Supervision model. The birth of Clinical Supervision is attributed to Morris Cogan and his colleagues at Harvard in the early sixties in their attempts to help preservice and inservice teachers improve their instructional effectiveness (Cogan, 1973). In the intervening years, it has been adopted and adapted by other researchers in the field of supervision (Gwynn, 1961; Goldhammer, 1969; Moore, 1970; Harris, 1975; Simon, 1977; Boyan & Copeland, 1978; Acheson & Gall, 1980).

Clinical Supervision was described by Cogan (1973:20) as "an applied practical, professional operation" and he advocated a reliance upon the behavioral sciences to improve the quality of teacher performance. The degree to which Cogan was prepared to adhere to the scientific method is unclear. The following illustration may serve as an example of the seeming contradiction in his rationale. Cogan (1973) argued Clinical supervisors ought to limit their work to the domain of their professional competence and by that he advocated a concern with the professional behaviors of the teacher and not with the personal concerns of teachers as is advocated by the counseling model of supervision (Wells, 1980). Yet Cogan argued in another section of his book that:

> even within his own domain, the supervisor's work with the teacher stops when it threatens
the teacher's sense of his own dignity or human worth. For example, the analysis of a teacher's classroom behavior stops when implications of such analysis seem likely to threaten the teacher's security or seriously damage his concept of himself (Cogan, 1973:25).

While Cogan (1973) was willing to advocate the systematic analysis of teacher and student behavior in the classroom, it is unclear the degree to which Cogan was prepared to hold teachers responsible for improvement of their own instruction and, ultimately, the behavior of their students.

The main characteristics of the Clinical Supervision model are the emphasis upon systematic data collection and objective analysis of classroom behavior, the development of a collegial relationship between the supervisor and the supervisee, and the absence of an evaluation component within the supervision model (Cogan, 1973). The helper-helpee relationship between the supervisor and the supervisee may be needed but ought not to become the dominant and characteristic style of interaction. The supervisor and the teacher ought to develop a mutual sharing of ideas where ultimately the teacher may no longer depend on or need the supervisor's help.

The formal cycle of supervision as developed by Cogan (1973) included eight phases:

1. Establishing a teacher-supervisor relationship
2. Planning with the teacher a lesson or series of lessons
3. Planning the strategy of observation
4. Observing instruction
5. Analyzing the teaching and learning process

6. Planning the strategy of the conference

7. The conference

8. Renewed planning

Cogan has suggested that some of these phases may be altered or omitted.

Cogan (1973) developed Clinical Supervision from two basic notions. Instructional supervision could only be improved by direct feedback on something of direct concern to the teacher (Reavis, 1976). Secondly, the ownership of a problem by the teacher is a prerequisite to the teacher's improvement of their teaching behavior. It was from the feedback literature specifically that enthusiasts of Clinical Supervision chose the notions of direct feedback as a change agent and a systematic collection and analysis of data as the basis of that feedback to be the framework for the concept and process of Clinical Supervision.

The Empirical Studies from When Clinical Supervision Derived

In the sixties, Orme (1966) demonstrated the effectiveness of feedback in improving teaching skills in the classroom. Tuckman and Oliver (1968) reported teacher behavior could be changed through the use of detailed feedback. Tuckman, McCall and Hyman (1969) tried to determine if teachers, whose self-perceptions of teaching differed from their behavior as recorded by an observer, would change their perception, their behavior, or both as a result of feedback. They concluded behavior and self-perception of experienced inservice teachers could be changed by invoking a discrepancy between a teacher's observed behavior and his
own perception of his behavior and then making him aware of this discrepancy via verbal feedback. Verbal feedback by a supervisor had to be added to self-analysis before changes in behavior were observed.

Acheson (1965), McGraw (1965), and Joyce (1976) demonstrated that feedback in the form of audio and video playback was effective in changing teaching behavior. Borg, Langer, and Kelly (1970) found permanence of fine tuning skills in a delayed post-test after an initial training that included modeling, practice, and feedback.

Good and Brophy (1974) reported that teacher behavior toward two different student groups was altered by presenting teachers with information about their previous interaction with target students. The treatment which involved direct feedback of systematic observation data resulted in greatly altered quantitative and qualitative aspects of teacher interaction with the target students. They concluded that the easiest way to change teacher behavior was to make teachers more aware of it through feedback.

In a summary of the importance of feedback in changing teacher behavior, Peck and Tucker (1973) and Joyce and Showers (1980) concluded that the findings on the relationship between feedback and teacher behavior seem to be fairly consistent. Teachers did learn and could demonstrate skills and strategies, if opportunities for any combination of feedback, modeling, or practice was available. Whaley (1980) concluded that feedback had been demonstrated as cost efficient and effective as a method of changing teacher behavior.

However, there are some exceptions to these results. Breyer and Allen (1975) showed that information provided to a teacher on an intermittent basis (every second day) was
insufficient to increase her positive comments and decrease her negative comments. Cossairt et al. (1973) found feedback to be ineffective in increasing the use of praise by a teacher.

**Has Clinical Supervision an Empirical Base?**

The number of articles and books devoted to discussion, review, and synthesis of literature on Clinical Supervision is not lacking. On closer examination of this literature, one is struck by the obvious lack of empirical evidence to support the assumption that Clinical Supervision does, in fact, bring about the improvement of instruction (Cogan, 1973). Denham (1976) was highly critical of the neglect of such in-class research to assess how much (or whether) Clinical Supervision has improved instruction. Research with the Clinical Supervision cycle as an independent variable and observable teacher behaviors in the classroom as dependent variables has been almost non-existent. There are so few studies on this aspect of supervision that it is impossible to conclude whether Clinical Supervision has been effective or indeed an impediment in improving instruction. From existing evidence, the process allows teachers to pursue concerns that may have little or no relationship to the effectiveness of the teacher's instruction. Sullivan (1980) reviewed 90 items on Clinical Supervision. All but a few were written since 1970. She found that only four of the items related to the examination of the "expected benefits" of using the model towards improving teacher behavior and subsequently student outcomes.

All four studies reported changes in teacher behavior in directions specified by the researchers as desirable. On closer examination of the dependent variables in each of these studies, it was discovered that only one study
included a specific measure of teacher behavior within the classroom. This involved using a systematic observation system to determine if any change could be observed over the course of the study (Skrak, 1973).

The purpose of Skrak's study (1973) was to test a behavioral engineering model which was to make it possible for a clinical supervisor to utilize immediate secondary reinforcement during classroom teaching observations to increase the frequency of specific teacher behaviors which both teacher and supervisor had agreed should be modified. The criterion for success was the degree to which behavioral change was effected with immediate secondary reinforcement over and above the change effected in a Clinical Supervisory model with secondary reinforcement. Three student teachers and two experienced teachers were involved in the study. Specific behaviors for modification were chosen and change was monitored by collection of data on that specific behavior during their lesson. Successful results (modified teacher behavior) were observed in both preservice and experienced teachers. However, Skrak (1973) concluded that the use of immediate secondary reinforcement (oral or visual signal to teacher) during teaching observations in Clinical Supervision does not guarantee a greater degree of behavioral change than do clinical supervisory procedures which do not employ such immediate feedback.

A study by Kerr (1976) investigated the use of feedback data, within a Clinical Supervisory model, to facilitate teachers' selection, implementation, and evaluation of individualized instructional processes. It was not possible from the source to determine the kind of data collected during teacher observations. Kerr concluded, from an analysis of the data, that teachers used the instruments and feedback data as a basis for evaluating instructional processes and for selecting and implementing individualized teaching
strategies in the programs. It must be pointed out that judgment of implementation of individualization strategies during lessons was done by the teachers completing paper and pencil instruments assessing the degree to which they perceived a greater degree of individualization in their reading programs, and not by systematic observation of teacher behavior change.

A third study was an investigation of Clinical Supervision to explore its effects upon: 1) change in student perception of the class and of the teacher-student relationship and 2) teacher growth, defined in the study in terms of "critical self-analysis skills", "positive attitude" about their profession and being "more open to their own experiences" (Shuma, 1973). The findings lent support to the hypothesis that a Clinical Supervision model could significantly change student perceptions of the class and the teacher-student relationship. During the study, teachers progressed upward toward self-supervision, moving from a concentration at Stage 4 to a concentration at Stage 9 in a nine-stage continuum of supervisor and supervisee autonomy. The systematic data collection to monitor actual modification of teacher behavior or student behavior is not included as part of the study. The assumption was that a helping relationship between teacher and student, as perceived by the students, contributes directly or indirectly to improved instruction and student outcomes. No support for this assumption was presented, however.

A study by Krajewski (1976) investigated the degree to which the Clinical Supervision model could improve teacher instruction and more accurate self-perceptions of their own teaching. Both control and experimental groups were pre-tested and post-tested on the Minnesota Teacher Attitude Inventory Self-Rating Scale. The experimental
group received Clinical Supervision, using the Flanders Interaction Analysis System for data collection during teacher observations. The control group received a "traditional" mode of supervision. Krajewski reported that the experimental group became more "indirect" in teaching (Flanders, 1970) in that there were more student initiated behaviors. The experimental group also exhibited more accurate self-evaluations of their own teaching than the control group. He concluded that while Clinical Supervision was an ideal way toward guided self-improvement for teachers, many supervisors lack the skills to analyze teacher behavior, a vital component in the success of the total process.

From this study, many questions about the effectiveness of the various components of the process emerge. Denham (1976) goes to the core of the issue by pointing out the total lack of research within each phase of the clinical supervision model. Data based answers are almost nonexistent. She raised the following questions for possible future inquiry: How can teachers and supervisors more effectively and efficiently establish rapport? What kind of agreement about an observation system is necessary or desirable? What are the best procedures for analysis of instruction? What evidence is available to support the inherent assumption in clinical supervision that careful analysis of observed lessons leads to more helpful, positive, and constructive conferences with teachers?

It seems that two major issues remain unanswered. Research is needed to examine whether Clinical Supervision enables teachers to change their behavior when such change is needed to implement new curricula and/or increase the effectiveness of the teacher. Secondly, validation of the Clinical Supervision model needs to be completed in terms
of teacher outcomes. Researchers ought to determine whether Clinical Supervision can bring about significant changes in cognitive, affective, or psychomotor responses in learning units because as Goldhammer (1969:364) concluded:

innovations in supervision and instruction
must ultimately be expressed as beneficial
changes in pupils experiences and behavior.

It is not suggested here that the Clinical model is an in­
effective model of supervision, but that too little research
evidence exists to judge it to be effective or ineffective.
A further question that needs to be asked is whether Clin­
cal Supervision is the most efficient method of improving
instruction and student learning. Perhaps some components
of the package may be integrated with other components to
achieve similar results. Perhaps certain components could
be deleted without adversely affecting teacher and student
improvement. In contrast, Harris (1976)suggested supple­
ments to Clinical Supervision to overcome what he termed to
be "setting, personal, and strategic" limitations. These
supplements include group discussion, role playing, and
film viewing focusing on simulated rather than personal pro­
blems. This way one might encourage less than highly moti­
vated people to join in group discussions rather than
individual conferences that may be aversive.

Smyth (1981) has listed several advantages to the Clini­
cal Supervision model.

1. It allows the teacher to see more of
their own performance, that is, their
strengths and weaknesses.

2. It encourages self-analysis and self­
 improvement.

3. Provides a form of professional develop­
ment for teachers which is school based,
colloquial, workable, relevant, and in­
formal.
4. It provides opportunity for the administration to show teachers that they are concerned about teachers' professional development.

He has also listed several disadvantages to the model.

1. It assumes that all teachers have a desire to improve their own performance.

2. Assumes the voluntary participation of teachers in the process.

3. It is a very time-consuming process.

4. It requires "selling" to others, especially those who need it.

5. Raises questions about the sources of new ideas for the teacher and supervisor involved. It may be that an outsider's perspective on the problems or issue is required.

Smyth (1981) argued that there may be an over-reliance in Clinical Supervision on participant intuition and experience as the major source of new ideas and that there are limits to how far introspection can result in changed teaching behavior that improves pupil learning. Finally, he cautioned potential users of the model, as did Denham (1977), that there is little evidence to substantiate Clinical Supervision as a process of supervision that improves instruction or enhances pupil learning.

It seems that if more time, energy, and money are to be devoted to training supervisors to become proficient in the skills of Clinical Supervision, it must be done in the full knowledge of its research base to date.
Application of Behavior Analysis to Teaching Supervision

The behavior analysis literature in education was reviewed to ascertain what methods were found to be successful in changing teacher behavior. The most successful methods in changing teacher behavior involved the use of feedback to improve specific teaching behavior (Saudergas, 1972; Cooper, Thomson & Baer, 1970), social reinforcement (McDonald, 1973), prompting (Van Houten & Sullivan, 1975; Hall et al., 1968; Dodds, 1975), and instructions and lectures (Hall & Copeland, 1972).

The studies that used feedback as a change agent were of specific interest as they relate to the major focus of this study. Very few studies used feedback as the sole change agent. It has been difficult and often impossible to assess the specific contribution of feedback alone on the dependent variables. Several studies that have used feedback as one component of an intervention package have been successful in modifying teacher behavior.

Cooper, Thomson and Baer (1970) attempted to increase teacher attention to desirable child responses. The intervention provided the teacher with a daily percentage of time the teacher spent attending to appropriate child responses plus a daily failure frequency of not attending to appropriate child responses. Also provided after each lesson were examples of appropriate child responses. They found an increase in teacher attending behavior to appropriate child responses subsequent to the onset of the experimental feedback.

Cossairt, Hall and Hopkins (1973) attempted to increase teacher praise for student attending behavior through the
use of experimenter's instructions, feedback, and feedback plus social reinforcement by the experimenter. For conditions A and B (instructions and feedback) the results were inconclusive. With the introduction of experimental praise to the teacher, contingent upon increased teacher praise of student attending behavior, the teachers demonstrated more praise for student attending than in either of the other two conditions. They concluded that it took more than instructions and feedback to teachers to change their behavior.

Van Houten and Sullivan (1975) used audio cueing over the classroom's public address system to increase the teacher's rate of praise to students. A second intervention was also tried that required the teachers to self-monitor their praise rate during class. The findings demonstrated the efficacy of auditory prompting as a method of increasing teacher praise. Self-recording was relatively ineffective.

Saudergas (1972) found video-tape feedback to teachers increased their praise rate and altered their attention patterns to students. Speidal and Tharp (1978) designed a three-day training program to increase the use of positive verbal feedback by experienced classroom teachers. The components of the program included lecturing, discrimination training, modeling, guided practice, and audio-tape feedback. No attempt was made to test for differential effectiveness of each component. They found that the rates for the trained behaviors (academic and management praise) were significantly higher than the non-trained behaviors.

There are some studies, however, that have not been as successful in modifying teacher behavior (Rule, 1972; Breyer & Allen, 1975). Breyer and Allen (1975) demonstrated that information provided to a teacher on an intermittent basis (every second day) was insufficient to increase her
positive comments and decrease her negative comments.

Whaley's (1980) study of experienced Physical Education teachers was unsuccessful in modifying teacher behavior through the use of graphic feedback within a formal supervision model. This study will be discussed in greater detail later.

Behavior Change and Supervision in Physical Education

Research in supervision of Physical Education could be described as "methods research". Locke (1979) reported that three supervisory models are being used in Physical Education; the interaction analysis model as developed by Cheffers (1977), the behavior analysis model (Siedentop, 1981), and the "traditional" paradigm, with its characteristic emphasis on teacher weaknesses and feedback based on anecdotal or eyeballing techniques.

The use of interaction analysis as a supervisory procedure (Keilty, 1975; Getty, 1977) has produced significant changes in the behavior of student teachers.

The use of a behavior analysis model of supervision at The Ohio State University demonstrated significant change in the teaching behavior of student teachers (Rife, 1973; Hughley, 1973; Dodds, 1975; McKenzie, 1976). Similar changes were observed when university supervisors and cooperating teachers worked as a team (Darst, 1973; Hamilton, 1973). This programmatic research demonstrated the feasibility of cooperating teachers assuming the role of supervisory change agent (Hutslar, 1976; Cramer, 1977). Locke (1979) cautioned that the maintenance of such behaviors over time has yet to be demonstrated. These studies are, however, "the first absolute confirmation that is possible to induce
any specific behaviors in a group of working Physical Education teachers" (p. 11).

The behavior analysis model of supervision has been applied in working with experienced Physical Education teachers (Birdwell, 1979; Whaley, 1980; Beamer, 1982). One of the purposes of Birdwell's (1979) study was to modify teacher behavior in an attempt to increase student Academic Learning Time-Physical Education (the time students spent engaged in the subject matter at an easy level of difficulty). Her intervention consisted of short instructional clinics. The following example is used to illustrate the specific type of intervention used. When efforts were made to decrease the teacher's management time, the supervisor offered two suggestions that might decrease the teacher's management time: a more efficient roll call method and the use of an initial class activity. Instruction was then given pertaining to the implementation of the two procedures. A second facet of the intervention involved feedback from the researcher to the teacher regarding performance. Before the next teaching session, teachers were provided with feedback in the form of a percentage of time the teacher spent on that specific variable. The teacher would then graph the data provided by the researcher. This cycle of behavior would begin again with each new intervention on a teacher behavior. Birdwell (1979) intervened on management time, teacher feedback, and student non-engaged time with each of two teachers. Management time included such class activity as Waiting, Transitioning, and Non-Academic Instruction. These are specific behaviors in the Academic Learning Time-Physical Education (ALT-PE) observation instrument (Birdwell, Metzler & Siedentop, 1979).

By implementing the described intervention, Birdwell (1979) decreased the teacher's management time from 26.1
percent of class time to 6.3 percent of class time during the study. The second teacher's management time decreased 11.7 percent to 4.1 percent of class time by the end of the study.

Student non-engagement was a second dependent variable. This variable was determined by counting the intervals in which any of the Non-Engaged categories (Interim, Waiting, and Off-task) were coded for each of three target students. This number was then divided by the total number of intervals for each target student to obtain a percentage of student non-engaged time. Using a similar cycle of intervention, Birdwell's first teacher decreased student non-engaged time from a mean of 21.2 percent for the three students to a mean of 16 percent by completion of the study. However, one must be cautious how one interprets these data. In the case of teacher two, reduction in baseline of student non-engaged time was a function of change in activity from gymnastics to badminton to table tennis. During this switch in activity, student non-engaged time dropped from a mean of 45.4 percent for a gymnastics unit to a mean of 36.6 percent for the badminton and the table tennis lessons. However, a change from a baseline of 36.6 percent for badminton and table tennis to an intervention mean of 13.8 percent was then recorded. Birdwell (1979) argued that such a change was sufficiently strong to predict that the intervention was responsible for the significant change.

Using the short instructional clinic and regular feedback by the researcher, combined with teacher self-graphing of their daily teaching behavior, Birdwell demonstrated an increase in teacher feedback (which was the percentage of the number of intervals where feedback occurred over the total number of intervals) from 12.1 percent of the intervals to 26.2 percent for teacher one and from 13.3 percent to 38.7 percent for teacher two. Birdwell (1979:101)
concluded that:

 instructions and daily feedback to teachers were a successful and cost effective method for changing teacher behaviors and for helping teachers to change student behaviors.

Systematic replication of the study was recommended by Birdwell. This was done by Whaley (1980) and Beamer (1982). Both were unsuccessful in bringing about similar changes in either teacher or student behavior.

Whaley (1980) investigated whether daily monitoring and graphic feedback to inservice teachers and later to their students on various aspects of the ALT-PE variables could increase the class time spent in Physical Education content and increase student engaged time. The first phase of the intervention involved presenting graphic feedback to the teacher on specific aspects of the class activity and individual student performance. Having been taught how to graph their own data, the teachers were telephoned each day with the specific data to record about the day's lesson. They proceeded to graph these data before their next teaching session.

There are two differences between Birdwell's (1979) and Whaley's (1980) intervention to this point. Firstly, information on all variables studied were presented to the teachers each day in Whaley's study, whereas Birdwell presented data on only one variable at a time. Secondly, while Whaley stressed the importance of increasing class activity time and specifically student response time, no suggestions on how to accomplish this were given to the teachers. Birdwell suggested at least two specific strategies to the teachers for each variable under observation. Whaley (1980)
suggested that "it is quite possible that the teachers were desirous of improving ALT-PE but had no idea of how to accomplish it" (p. 86).

McKenzie (1981) examined the effectiveness of behavioral strategies to modify the teaching behaviors of an experienced teacher in his work setting. The independent variable included daily feedback on the behaviors to be changed along with specific goal setting for these behaviors. The dependent variables, intervened upon in three separate interventions, were rate of positive feedback statements per minute, rate of O.K.'s used per minute, and the number of students' names used per minute. McKenzie found the procedure effective in bringing about substantial changes for these three targeted teaching behaviors. He concluded that goal setting and feedback in the naturalistic setting can be used as an inexpensive procedure to bring about desired teaching performance in experienced teachers.

The study undertaken by the author was a systematic replication of the above studies (Birdwell, 1979; Whaley, 1980; Beamer, 1982; and McKenzie, 1981) with experienced Physical Education teachers in an effort to replicate both Birdwell and McKenzie's findings. Graphic feedback, brief instructions, and goal setting with the experienced teachers was the intervention package used in an elementary, middle, and high school setting.

Implications of Teacher Effectiveness Research for a Model of Supervision

Despite claims for the need for supervisors to have a knowledge of research on teaching (MacKay & Osoba, 1978; Smyth, 1981), it is surprising how little discussion or research there has been on the linkages between research on
teacher effectiveness and supervision, either the "direct" or "indirect" forms. Smyth (1981) cited many of the well known authors on supervision (Blumberg, 1980; Harris, 1975; Alfonso, Firth & Nevill, 1975) as demonstrating "an unfortunate lack of interest in the findings from research on teaching" (p. 15).

Both areas of research are necessary to the improvement of instruction and ultimately to the demonstration of increased student learning. Research on teaching attempts to outline the appropriate teacher and student behaviors that correlate with effective teaching. Research on supervision attempts to outline effective and efficient supervisory techniques that help teachers demonstrate effective teaching behaviors and maintain those behaviors during their professional careers.

For supervision to be effective, the appropriate changes in teacher behavior and ultimately student behavior must be demonstrated. Research on supervision needs to focus on what might be the most efficient way or ways to achieve and maintain those desired behavior changes. Familiarity with research on teaching, specifically teacher effectiveness research, is a necessary though not a sufficient prerequisite for successful supervision research. It illuminates for the supervision researcher and the supervisor those behaviors that are "appropriate" to improve and maintain in the teacher's repertoire of teaching skills. Medley (1979:26) argued there is:

an abundance of practical knowledge available about how to do these things; what has been missing in the past is a clear conviction on the part of teacher educators that those things are what teachers ought to be doing.
How to reach and maintain these desirable behaviors across time, settings, and levels of teacher experience ought to be the focus of supervision research.

The teacher effectiveness literature was reviewed to ascertain what were the most robust variables associated with student achievement. The teacher and student behaviors observed during this study have been the focus of several previous studies on teacher effectiveness. These process variables were chosen for observation because they have been correlated highly with patterns of effective teaching (Emmer & Evertson, 1980; Worsham & Evertson, 1980; Rosenshine, 1979). The objective of the study was to improve the effectiveness of the experienced teachers on some of these variables.

Academic Learning Time

The Beginning Teacher Evaluation Study at the Far West Laboratory, the Juniper Gardens Study, and the Texas Teacher Effectiveness Program have reported "student opportunity to learn", "time on task", or "pupil engaged time", to be consistently and positively related to student outcomes. The Beginning Teacher Evaluation Study (BTES) used 40 "sites" (teachers and their classes) selected from 200 volunteers, where the teachers taught two-month experimental teaching units (ETU's) on reading and mathematics. The ten most effective and the ten least effective teachers were determined using residual gains scores. Protocols were drawn up for reading and mathematics and summary information regarding the teacher and the school situation was collected for four weeks. At the end of this period of observation, 61 behavior dimensions were outlined. Of this number, 21 variables were found to be generic in that they discriminated between the more and less effective teachers (Berliner,
One of the major findings was that "time on task" or, as Berliner referred to it as "academic engaged time" was consistently associated with the more effective teachers. The final report by Marliave, Fisher, and Dishaw (1977:122) stated that:

The positive effects of engaged time and percent easy as well as the negative effects of percent hard were shown to account for substantial proportions of variance in student learning of reading and mathematics at the second and fifth grades. That is, students learned more when they spent more time engaged in academic tasks where they made relatively few errors.

The Juniper Gardens Study (1977) looked at student opportunity to learn as a motivational factor in special and regular classrooms. They concluded that with a minimal level of proficiency in performing academic tasks outlined by the teacher, the students seemed to profit from the increased time spent in study.

A third study to support time on task as an important variable was the Texas Teacher Effectiveness Program (Brophy & Evertson, 1976). In findings after the first year, students involved on tasks at very low error rates had negative correlations with learning gains. In the final report, they cited "keeping students actively engaged" was one of the most consistent variables across socio-economic status and age levels. McDonald (1976), Powell (1978), and Good (1979), among others, supported the above findings. This variable is most often referred to as Academic Learning Time (ALT).
Smyth (1981) described the robustness of this variable as "little short of remarkable." He explained its resiliency over time to its "potential utility both as an index of classroom effectiveness as well as the key it provides for unlocking some of the complexities of life in classrooms." He concluded his review citing several implications of the research on ALT to date.

1. The overwhelming need for teachers to be sensitive to the considerable potential which long run variations in ALT can have upon levels of achievement.

2. The profile of the "learning student" that emerges is a very sensitive student, heavily involved in practice and review, who does not develop a distaste for the activities over whom the teacher exerts control and for whom there is congruency between ability and skill performance required.

3. The most prominent teaching strategy is teacher structuring of the lesson in the form of specific objectives and directives to pupils as to the aims and objectives of the lesson, what is expected of them and accountability expectations.

4. Monitoring and actively supervising pupil progress through interactive techniques and supervision of practice is important to ensure consistent, on task behavior.

Classroom Management

Berliner (1976 and 1979) argued teacher effectiveness was a function of time on task or Academic Learning Time (ALT), which is a more descriptive term for student involvement with the task (Siedentop, 1983). Smyth (1980) linked the two research areas together, teacher effectiveness and classroom management research, claiming that ALT was a function of classroom management. Effective teachers
try to organize their human, temporal, and spatial resources as efficiently as possible to allow maximum opportunity for their students to respond to the tasks assigned.

Duke (1979:xii) defined classroom management as the "provisions and procedures necessary to establish and maintain an environment in which instruction and learning can occur." Over the last several years, clear indications of what contributes to skillful management of groups of students in educational activities has developed. Skillful management has been described as a teachers ability to "put students in contact with the material and keep them in contact with it for as long as possible" (Rosenshine, 1979).

The purpose of this section is not to detail all of the major findings of classroom management research, but rather to highlight the main findings of classroom management literature as those results influenced the choice of teacher behaviors observed for the three subjects in this study.

Particular teacher behaviors and class activities are common to more effectively managed classrooms. Tikunoff, Ward, and Dasho (1978) emphasized the importance of rule-setting, teacher sanctioning behavior, and socialization of the children to the teacher's rules and procedures. Maskowitz and Hyman (1976) pointed out the importance of the first several days of the development of an efficient managerial system. The "best" teachers used the initial days to establish control. Emmer, Evertson, and Anderson (1980) found that more effective managers tend to have more workable systems of rules and taught their rules and procedures systematically and thoroughly. They monitored pupil behavior carefully and reacted quickly to stop inappropriate behavior.
Emmer and Evertson (1980) studied the management procedures employed by teachers at the beginning of the school year in junior high classes. The methodology involved both qualitative methods (class narrative records) and quantitative methods (student engagement ratings, time use logs, and ratings of teacher and student behaviors). They found the more effective managers had an established set of rules and procedures to be followed by students. The rules were clearly communicated to the students and teachers allowed time for practice of the necessary procedures, reinforcing students when they demonstrated appropriate behavior. They also monitored students' compliance with the rules and procedures, and followed through in consequating students' inappropriate behavior. More effective teachers were more consistent in their enforcement of rules.

The development of classroom routines, in particular management routines, reduce management time to what is necessary and maximize student opportunity to respond to the subject matter of the lesson. Yinger (1979) defined management routines as the established procedures that control and coordinate the behaviors of students while not engaged in instructional activities. Soar and Soar (1979) described this same phenomenon as the development of "established structure" by the teacher. This, they described as the "internalization by pupils of limits to behavior, patterns that are carried out, and sequences of activities that have been established in the past" (p. 101). The number of teacher prompts necessary to get students to begin and/or accomplish an assigned managerial task decreased as an established structure developed and students were able to manage their own behavior.

These routines have been very important from the teachers point of view in allowing them to put students in
contact with the material and keep them on task while providing sufficient time for the teacher to provide specific feedback to the students (Yinger, 1979). Besides optimizing student engaged time, they bring some semblance of order to a would-be chaotic and complex classroom rather than relying on continuous interaction by the teacher on managerial issues (Clark & Elmore, 1979). While routines do not, in and of themselves, bring about student achievement, they create an environment where such achievement is more probable. They allow teachers to teach and give students the opportunity to learn by making a complex environment more predictable.

Jacob Kounin's work in the late sixties was a major contribution to the development of an understanding of the importance of classroom management skills for effective teaching. Kounin (1970) developed a series of terms to describe effective teaching behaviors that prevent disruptive student behavior in the classroom and maintain high involvement by the students in on-task behaviors. They were:

1. **Withitness.** The degree to which the teacher communicates to his/her students that he/she knows what is going on in the class.

2. **Overlapping.** The teacher's ability to deal with two separate issues simultaneously.

3. **Smoothness.** The teacher's ability to maintain a continual flow within the lesson from one activity to the next.

4. **Momentum.** The teacher's ability to keep the students engaged in the material at an appropriate pace.

5. **Group Alerting.** The degree to which the teachers can keep the students alert and
"on their toes" (Kounin, 1970:p.124).

6. Accountability. The degree to which the teacher holds the students accountable (responsible) for their performance on assigned tasks.

This study focused, in part, on the last two dimensions listed above, group alerting and accountability. Teacher behavior was observed and the frequency of prompts by the teacher was tallied during each interval. Student accountability was measured in a different way from Kounin, but the notion of holding students responsible for their behavior is similar. Accountability will be dealt with in greater detail in a following section.

Teacher verbal interaction

Teacher verbal interaction with their students was a focus of this study. Specific studies from the teacher effectiveness literature, related to this variable, were reviewed and some of the relevant findings discussed below. Hayman and Moskowitz (1975:15) wrote that:

teachers who were most successful in establishing and maintaining control were also the most successful in providing a warm, understanding, supportive climate in which students felt comfortable and were able to work productively.

Siedentop (1983:93) argued "the best way to motivate your students to behave appropriately is to interact with them in a positive manner." O'Leary and O'Leary (1977) reported that praise can function as a reinforcer by increasing specific student behavior when made contingent upon performance of that behavior. However, many researchers have found praise occurs relatively infrequently in most
classrooms (Luce & Hoge, 1978) and that in some cases praise was even less frequent than criticism (Heller & White, 1975; Luce & Hoge, 1978).

The research program at The Ohio State University in Physical Education divided teacher verbal interaction into two major categories, those for skill and strategy behaviors and those for general class behaviors (Siedentop, 1983). In one study, Quarterman reported Physical Education teachers nagged their students (a low intensity reprimand) 17 times every 30 minutes and positively interacted with them less than once every 30 minutes about their general class behavior. In reacting to the skill attempts of their students, Quarterman (1977) reported a total of 20 corrective statements and eight positive statements by the teachers every 30 minutes. Siedentop (1983) summarized the predominant teacher verbal behavior "as correcting and nagging at a combined rate of 50 for every 30 minutes of class time."

From a review of several studies on praise, Brophy (1981:7) concluded teacher praise to be ineffective from the perspective of reinforcement theory because:

- teachers' praise typically is infrequent, non-contingent, global rather than specific, and determined more by students personal qualities or teachers perceptions of students' need for praise than by the quality of student conduct or achievement.

Dunkin and Biddle (1974:121) supported such a viewpoint reporting teachers use praise "no more than six percent of the total time on average." The relative rates of praise and criticism varied with student ability and teacher managerial skills. Several studies reported effective classroom managers criticize less frequently than ineffective ones.
(Stallings & Kaskowitz, 1974; Good & Grouws, 1977; Brophy & Evertson, 1976). When teachers did praise, Anderson et al. (1979) found teachers were specific in only 5 percent of their praise behaviors.

For teacher praise to be effective in increasing appropriate student behavior, O'Leary and O'Leary (1977) indicated that praise should include the following characteristics:

1. **Contingency.** The praise must be contingent on the performance of the behavior to be reinforced.

2. **Specificity.** The praise should specify the particulars of the behaviors to be reinforced.

3. **Sincere/Varied/Credible.** The praise should be sincere. Among other things, this means that the content will be varied according to the situation and the performances of the student being praised.

Harris and Kapche (1978) listed failure to use praise contingently as one of the most common problems in trying to train teachers to use behavior modification in the classroom.

In a study of the frequency and quality of teacher interaction in 27 classes, grades two through five, Brophy, Evertson, Anderson, Baum and Crawford (1976) found that:

1. Troublesome students usually got as much verbal praise and access to classroom rewards as more conforming and successful students, but that the non-verbal measures often indicated negative affects in the teachers.

2. Students whose patterns of problem behavior were non-threatening (those described as careless, unhappy, tending to give up easily) were praised relatively often. This was not true for those described as uncooperative or nominated as
students that the teacher would like to be rid of.

Students can, however, increase the rate of praise they obtain from a teacher (Brophy, 1981). Stokes, Fowler and Baer (1978) trained children to "recruit natural communities of reinforcers." The children were trained to judge the quality of their work and prompt the teacher to comment on it. The "trained" students were able to "recruit" increased rates of praise from the teachers. Brophy (1981) concluded that not only is some teacher praise not a deliberate reinforcement technique, but is, instead, a "conditioned operant behavior elicited and reinforced by students." He wrote that teacher praise intended as reinforcement probably does not function very effectively as such because it is not systematically contingent on desirable behavior, lacks specificity of the behavioral element and/or lacks credibility. He considered praise to be "seriously over sold" (Brophy, 1981:19) and wrote:

I see no strict necessity for any praise at all...(Yet) praise can be an effective technique for teachers who "pick their spots" by praising sparingly, concentrating on the students who respond well to it (reinforces their desirable behavior) and making sure to meet the criteria of contingency, specificity, and sincerity/variety/credibility (Brophy, 1981:21-22).

Soar and Soar (1979) studied the importance of a "warm emotional climate" on teacher effectiveness. Their results provided no support for the widely held belief that it is necessary for a classroom to provide a warm emotional climate for learning. They suggested that "an affectively neutral climate can be functional. What is apparently crucial, however, is that the climate not be negative" (Soar & Soar, 1979:105).
Kounin's work in classroom management supported this argument also. He concluded that the only desist quality that made a consistent difference on the likelihood of students to misbehave was that of anger "which produced emotional discomfort, but had no impact on conformity or attentiveness to the task" (Kounin, 1970:34).

This study tried to improve the quality and quantity of teacher interaction to students' general class behavior and their skill behavior. Such behaviors were examined to determine if there was any relationship between specific teacher verbal behaviors and student behaviors such as Academic Learning Time (ALT).

Teacher behavior and accountability

Based upon the increased number of researchers who have examined the relationship of student accountability to the effectiveness of both the managerial and instructional systems in the classroom (Kounin, 1970; Worsham & Evertson, 1980; Doyle, 1981; Tousignant, 1982; Alexander, 1982), the ALT-PE observation system was adapted to obtain measures of teacher appraisal and teacher accountability of their students.

There was a problem, however, with multiple uses of the term accountability. Halpin (1979) argued that "its very scope allows you to include what you want in it." While many have assented to dictionary definitions, "one who is held accountable is in some way bound or obliged to behave in the manner specified (Heritage Dictionary, 1979), when it comes to schools and teachers, few agree on what an appropriate account ought to include (Halpin, 1979).
Skinner (1974) defined accountability as existing when one person is keeping an account of the behavior of another to determine if it meets the specifications" (p. 84). Halpin clarified the concept by distinguishing between what he termed accountability, "holding individuals or groups responsible for the achievement of certain obligations" (p. 201) and the term answerability "to give an account of one's actions" (p. 201) but, unlike accountability, it does not entail liability to sanction. The difference is perhaps crucial to an understanding of the effectiveness of the teacher in having students comply with the appropriate tasks of the lesson and ensuring that such tasks are completed.

If student learning is dependent upon the activities students engaged in during their lessons (Doyle, 1981), it seems very important to understand the kinds of tasks assigned to students and the procedures that teachers use to ensure that students complete the tasks. Tasks assigned to students are fully specified when the situation, performance, and criteria are delineated (Doyle, 1981). One cannot assume that specification of a task is sufficient to ensure accountability for student behavior. It may be argued that a hierarchy of procedures are necessary to ensure optimum accountability of student behavior. Such accountability may relate to students' general class behavior or to their skill performance. Such procedures are outlined below.

Following complete specification of the task at hand, teachers then need to outline the consequences that follow the student's performance. Such consequences may be either positive or negative. An example of this would be the allocation of points to the students point total for appropriate performance of the task. Similarly, if the student failed to achieve the criteria, he/she would have to repeat that specific activity. Alexander (1982) referred to this
procedure as "describing contingencies" of student performance. This is a necessary, though not a sufficient component of accountability. Describing the procedures does not ensure that the task will be carried out to the specified criteria.

Having the student answer for their behavior (having them demonstrate their skill or having them answer a question on the material just covered) is the next step in the accountability process. Whether or not the teacher consequences the student's performance appropriately distinguishes answerability from accountability (Halpin, 1979). A practical example of these two procedures will best illuminate them.

A teacher, during a racquetball unit, required students to hit 10 consecutive forehands so that they hit the front wall no higher than 7 feet, with only one bounce between each hit (task specification). On completion of the task, students could proceed to the next task (the described contingencies). Failure to monitor the task is likely to result in a low probability of task completion by the class. If, however, the teacher has the students perform the task for him/her (answerability procedure), and allows students who have not reached criteria to begin the next task, there no longer exists accountability for completion of the initial task and students are held accountable for an easier task. If, however, the teacher required the student to repeat the task (implementation of sanctions), then the teacher has implemented the final step in the accountability process. Alexander (1982) termed this final procedure as the "assignment of contingencies" to student behavior. The consistent assignment of contingencies to student performance increases the probability that students will complete the assigned tasks (Alexander, 1982). It is
not known, at this stage, what is the most efficient and
effective consequation schedule for student behavior in a
classroom situation to ensure optimum student learning by
completion of assigned tasks (Tousignant, 1982; Alexander,
1982). It would most probably be a function in some part
of task complexity, skill level and maturity of students in
addition to their previous experience with the teacher.

Because tasks in the gymnasium are not often clearly
specified (Tousignant, 1982), it was not possible in this
study to make judgments on the appropriateness of teacher
consequation of students, in terms of grades, adherence to
a specific task, or whether a student was consequated out­
side of the class for a class behavior. Answerability and
accountability were not coded as two different behaviors in
this study. Accountability was coded when the teacher had
the student or group of students demonstrate the assigned
task. If such a performance was followed by teacher feed­
back on that performance, then that behavior was also coded
as teacher accountability. The percentage of accountability
used by the teachers in this study, in terms of their verbal
and non-verbal interaction with the students, was analyzed.

Summary

The first section of this review highlighted two para­
doxes in educational supervision. Firstly, although much
has been written on education supervision, seldom is it data
based and, when it is, frequently the research has methodo­
logical limitations (Mosher & Purpel, 1972). Secondly,
teachers seem receptive to certain types of supervision
only. They prefer to focus on broad objectives through
group work but are reluctant to have their teaching behavior
observed or to engage in systematic attempts to improve
their teaching skills (Cogan, 1973).
The second section of this chapter critiqued the Clinical Supervision model, a popular supervisory practice used with experienced teachers in the last decade. The lack of research evidence to judge the effectiveness of the model in improving instruction was highlighted. The need for systematic observation of teacher and student behavior to determine whether specific supervisory techniques are successful in increasing teacher effectiveness seems mandatory. Otherwise, much time, energy, and money may be lost in the practice of ineffective and/or inefficient supervisory techniques. The literature reviewed highlighted the importance of the systematic observation of teacher and student behavior, as followed in this study, to determine the effectiveness of the supervisory technique employed in this study.

The behavior analysis literature was reviewed and the importance of feedback for learning to occur was reported from several studies. The third section also described several studies in physical education that used a successful behavioral approach to the supervision of student teachers and experienced teachers. The behavior analysis literature and the findings from the supervision research in physical education provided the support for the "intervention package" used in this study in terms of possible success in improving the teaching skills of the experienced teachers.

The review of the teacher effectiveness literature was reported in the final section. The process variables found to be most highly correlated with student achievement were described. This was the criterion used for selection of specific teacher and student variables to be observed and modified during this study in an effort to improve the teachers' teaching skills and increase students' motor
engagement during physical education lessons. The specific procedures adopted to examine the specific research questions posed in chapter one are outlined in the following chapter.
CHAPTER III

SOURCES OF DATA, PROCEDURES, AND METHODS OF DATA ANALYSIS

The methods and procedures described in this chapter centered around the research problem stated in chapter 1 (p. 5):

Can experienced teachers of physical education be provided with the necessary knowledges, skills, and attitudes through a systematic inservice program that will hold them accountable for significant behavior change?

The information will be presented in the following order: personnel, setting for the study, observational system, field testing, coding procedures followed, training observers, intervention package, and experimental design.

Subjects

Teachers

During the summer of 1981, a letter was sent from the Ohio State University School of Health, Physical Education, and Recreation to all physical educators in the Columbus Public Schools and the surrounding school districts. The letter offered graduate credit for teachers of physical education for increasing their teaching effectiveness by improving their managerial skills, instructional skills, and feedback skills (see Appendix B).
A pilot study with three teachers was conducted in the Fall Quarter, 1981. The teachers' lessons were video-taped and the researchers analysis of the data was used as feedback to the teachers in periodic conferences throughout the term. Two teachers taught in a Columbus Middle School and the third was a regular classroom teacher required to teach physical education to her fourth grade students twice a week.

The researcher continued to advertise during the Winter Quarter for teachers for the Spring course. Three teachers signed up for the three credit hour course. All had at least six years of teaching experience, were trained physical educators, and would be teaching physical education during the Spring Quarter.

Teacher A taught at a high school. The students were from middle and high socio-economic backgrounds. The teacher had taught at the school for six years and knew her students. Teacher B taught at a suburban middle school and had been teaching there for seven years. The students were from mainly middle and lower income families. She taught mostly seventh and eighth grade girls. Teacher C had taught at a local high school for ten years but, by her own request, had been transferred to an elementary school in the same school district. This was her fourth year at the elementary school.

Classes

One class of each of the teachers was observed for the duration of the study. As the location of the schools were 16 miles apart, the decision as to which class to observe was determined by the schools' schedules, the researcher's schedule, and the schedules of the coders. It was decided
that first period of the morning would be observed at the high school. Because of the elective system operating at the school, the students would not necessarily be the same students for each of the three week units offered in the program.

The seventh grade girls class was chosen for observation at the middle school. They were the only group the teacher would be working with throughout the study. The class observed met the last period before lunch.

The fourth grade class was chosen for observation at the elementary school. It was possible to get from the high school to the elementary school for the start of the fourth grade lesson. It was not possible to get from the elementary school to the middle school in time for the seventh grade class so they could not be coded on the same day. All three lessons were observed in the mornings between 8:00 A.M. and 11:15 A.M.

The fourth grade class was observed twice a week which was their total time allocation. They were observed fifteen times during the course of the study. Earlier observations were made but were used in the final training and testing of the coders. Both the middle school and the high school had daily physical education programs. The high school class was observed thirty times throughout the study. Because of schedule conflicts, observations of the middle and elementary school classes were not possible on the same mornings. The middle school class was observed a total of twenty-two times during the study. Data collection for all three schools lasted nine weeks. See Appendix A for further background data.
Students

Three students from each class were chosen for direct observation. An effort was made, where possible, to follow the same three students during the entire study, but it was not possible at the high school. In all, a total of five students were observed at the high school. One was observed for all thirty periods and the others were observed between ten and twenty times. This will be indicated in the study. In the middle school, the same three students were observed for the entire study. The same three students were observed throughout the study in the elementary school with the exception of the last two days of observation when classes were switched in the school schedule. A fourth grade class was substituted. They were beginning a unit planned by the teacher in conjunction with the researcher.

The specific students were chosen from a list made by the teachers in each school. They had been asked to list five students who were highly skilled athletes, five who were of medium skill, and five low skill students. The researcher then chose one student from each category. The one chosen was the student with the best attendance record. The high school students were also chosen on the basis of who would be in the teacher's class for the greater part of the quarter. The students were numbered one to three and remained in that order for the entire study. If they were absent on a specific day, no other student was substituted. However, in the event they were to be with another teacher for an entire unit, a classmate from the original list was substituted. These target students were not known to the teachers until at least after the researcher's first conference with the teachers. This was to prevent the possibility of differential treatment by the teacher of the target students.
Coders

All six of the coders in the study were doctoral candidates in physical education, specializing in teacher education. Three of them had previous experience using direct observation techniques to collect data on teacher and student behavior. The researcher was one of these coders. The other three coders had all supervised student teachers in the field and were experienced in observing physical education classes. Three of the coders, excluding the researcher, coded throughout the study. The others were used when interobserver agreement checks had to be done, when three lessons had to be coded in one day, or when a coder had other commitments.

Experimenter

The experimenter holds a bachelors degree majoring in physical education. She was pursuing a doctoral degree in physical education specializing in teacher education. She had previous experience in the use of direct observation techniques. Her masters thesis necessitated the use of these techniques in the analysis of video-taped lessons of physical education student teachers during their practicum. The experimenter was also a coder in other direct observation studies.

Setting

The high school observations were done in three different athletic facilities. Badminton and racquetball units were held in the gymnasium. The teacher shared the
gym with another teacher. There was a solid dividing door which prevented much interference. The situation was not considered a problem by the teacher. In the badminton unit, there was space for all to participate if four were assigned to some courts. The racquetball students were a little cramped for space with play on one court being stopped while a student retrieved his or her ball. Coders sat in an alcove of the gym. They were in a position to see all the students at the same time.

The swimming pool was the venue for advanced swimming. The teacher had the entire 30 meter pool for the class. Coders sat on the bleachers permanently placed by the poolside. They were in a position to see all the target students.

The third facility used by the teacher was five outdoor hard surface tennis courts. The size of the tennis class allowed all students an opportunity to play and practice at the same time. The coders sat inside the enclosed area looking down the middle of the five tennis courts. They were in a position to see all the target students.

The elementary school observations were done mainly in the school gym. It was half the size of a regular basketball court. There was a stage at one end of the gym but the curtains were kept drawn and this space never used. Off the main gym floor was an alcove where the coders sat and observed the teacher and the target students. The baseball diamond was used on two occasions to teach the fundamentals of throwing and catching and the teacher did some fitness testing. The coders sat by the diamond on those occasions, in a position to see the target students.

At the middle school, there were four different facilities used to teach the various activity units. The teacher
shared the gym with the sixth grade teacher. Only a mesh netting separated the two classes. This was not considered a very satisfactory situation by the teacher and she made several requests of the sixth grade teacher to try and keep the noise level down. At some points the teacher would have to shout to be heard and she chose to bring the students together in a huddle to communicate with them. The coders sat at one end of the gym in a corner and could see all the target students.

Outside, the teacher used the 400 meter track and the surrounding area for the track and field unit, as well as the frisbee golf unit. The football field was used for flag football and the baseball diamond for softball. The coders moved with the class depending on where the day's activity was to be stationed. They were always in a position to see the target students. The teacher used five hard surface tennis courts for her tennis unit. With four to a court, there was space for all students to practice and play. There was a racquet per student, although some had broken strings and others needed a cover for the handle. There was one ball for every two students. The teacher reported that the school budget would not permit the purchase of any more equipment that year. The coders sat inside the enclosed area, looking down on all the courts and in a position to see all the target students.

**Observation System**

The development and field testing of Academic Learning Time-Physical Education (ALT-PE) instrument was done in physical education classes during the 1978 school year (Siedentop, Birdwell, and Metzler, 1978). Later, the system was adapted to include a measure of teacher behavior.
(Birdwell, 1980). After several descriptive and experimental studies, the system was revised to facilitate more accurate descriptions of student behavior and to decrease the complexity of the coding procedure, at the same time obtaining the appropriate data intact (Siedentop, Tousignant and Parker, 1982).

The system used in this study was a further adaption of the ALT-PE model. The primary objectives were to:
1) determine how much time the teacher spent instructing, giving directions, observing, appraising, demonstrating, and holding students accountable for their behavior during class, and 2) how much time students spent waiting, interim, listening to instructions and directions, off task, involved in management tasks, in motor appropriate activity, in motor inappropriate activity, and in motor supportive activity.

Each interval was fifteen seconds duration. It was subdivided into three five second periods. Within an interval, the behavior of the teacher and the three target students were coded. The coding procedure itself has been described elsewhere in this chapter. By coding teacher and student behavior simultaneously, the effect of teacher behavior on student behavior and vice versa could be examined. For example, it was possible to determine if student off task behavior was more frequent during transition periods or during instructional periods of the class than during practice sessions.

Five specific components of classroom life were studied during each interval. Class Context involved observing the activity of the students as a group to determine the main function of the activities observed during that interval. Class Context was divided in two levels. The General
Content level referred to class time when students were not intended to be involved in physical education activities. These were: Warm-up, Evaluation, Transition, and Management. The definition for each category is provided at the end of the section. The second level was Subject Matter Content. This referred to class time where the focus was on physical education content, be it involvement in physically active play, or knowledge about how to perform. These were: Skill Practice, Scrimmage/Routine, Modified game, Game, Fitness, and Instruction. The definitions for these categories are at the end of this section.

The second component, Student Involvement involved observations of three target students in sequence, to determine whether they were motor engaged or non-motor engaged; that is, involved in subject matter oriented motor activities or not. The categories were: Motor Appropriate, Motor Inappropriate, Motor Supportive, Off Task, On Task, Cognitive, Interim, and Waiting.

The third component for observation was Teacher Role, to describe the ongoing role of the teacher during the class. These were: Evaluation Role, Instruction Role, Participation Role, and Supervision Role. It was possible to determine if a teacher used a specific behavior more frequently in a given role. For example, did the teacher demonstrate more frequently in an Instructional Role than in a Participation Role?

The fourth component dealt with Teacher Behavior during each interval. These were Accountability, Appraisal, Setting, Student Expectations, Demonstrating, Initiating Information, Giving Directions, Observing, Monitoring, and Break.
The fifth component of Teacher Interaction dealt with the interaction between the teacher and the students. It was a description of the frequency and the quality of teacher interaction. The set of categories, Praise and Desist, dealt with teacher reactions to students' non-skill attempts. The next two categories, Positive Feedback and Corrective Feedback, were teacher reactions to students' skill attempts. The final category was Prompts. Definitions of each category are given at the end of this section.

**Behavioral Definitions of the Observation Systems**

Class Context contained ten categories, three in the General Content Level and seven in the Subject Matter Content Level.

**General Content**

**Warm-up:**

Time devoted to routine execution of physical activities to prepare the individual to engage in further activities but which were not designed to alter the state of the individual on a long term basis.

**Examples:**

-- Students run a couple of laps of the gym.

-- Students go through a five minute stretching routine to begin class.

**Transition:**

Time devoted to managerial and organizational activities related to instructional activity.

**Examples:**

-- Students move toward the gymnastic equipment to begin practice on their routine.
Students move from the gym to the tennis courts outside.

Management:
Time devoted to class business that was unrelated to instructional activity.

Examples:
-- Teacher takes attendance while the students wait.
-- The teacher waits for the remainder of the class to come from the locker room.

Subject Matter Content

Evaluation:
Time devoted to formal testing of the students on the content of the physical education unit in progress at the time.

Examples:
-- Students take a quiz on the rules of soccer.
-- Students are skill tested on volleyball.

Skill Practice:
Time devoted to practice of a skill or chains of skills outside the applied situation. The primary goal of such practice was individual skill development.

Examples:
-- Students are involved in partner drills, practicing the bump pass in volleyball.
-- Students have a basketball each and practice the dribble.

Scrimmage/Routine:
Time devoted to refinement of a specific skill or skills in an applied setting, during which there is frequent instruction and feedback to the participants.

Examples:
-- Students are involved in a full six versus six volleyball game,
with frequent stoppages by the teacher for feedback and instruction.

-- A five on five half court basketball game progresses with frequent teacher instruction and feedback.

**Modified Game:**

Time devoted to activities that included some rules, sides, and the possibility of winners but did not adhere to all or any of the rules of a major sport. The purpose of the activity was to practice the skills in an applied setting without all the rules and procedures of the full fame situation.

**Examples:**

-- Two versus two "passing" game in a ten by ten foot grid, working on soccer passing.

-- Two students on each side of a six foot net, volley the ball back and forth trying to bounce the ball in their opponents' court.

**Game:**

Time devoted to the application of skills in a game situation which the participants completed with little or no intervention by the teacher.

**Examples:**

-- The students complete the square dance to the music.

-- The students complete a medley relay in the swimming pool.

**Fitness:**

Time devoted to activities where the main purpose was to alter the physical state of the individual in terms of cardiovascular endurance, strength, and/or flexibility. They had to be of sufficient intensity and duration to alter the state of the individual.
Examples: -- Students run a par course as part of a fitness unit.

-- Students work on the nautilus equipment.

**Instruction:**

Time devoted to transmitting information concerning the content of physical education. This would include the main performance points, rules, and/or strategies of a sport skill.

Examples: -- The teacher explains the main instructional points of the cartwheel.

-- The teacher diagrams the positions of each partner in a badminton doubles game.

Student Behavior was categorized as either Motor Engaged or Non-Engaged. There were three behavior categories subsummed under Motor Engagement and five under Non-Engaged.

**Motor Engaged**

**Motor Appropriate:**

The student was engaged in subject matter motor activity that produced a high degree of success.

Examples: -- The student does a forward roll followed by a cartwheel.

-- The student catches a softball and throws it to the first baseman.

**Motor Supportive:**

The student was engaged in assisting other students learn the activity.

Examples: -- The student stands at the vaulting horse and spots his partner coming through doing a squat vault.
Motor

Inappropriate:

The student was engaged in a subject matter oriented motor activity. It was either too easy or too difficult that practicing it could not have contributed to the lesson's goals.

Examples:

-- During the square dance, a target student goes the wrong direction for a "Dos-a-do".

-- A target student drops the ball, thrown to her from 20 feet.

Non-Engaged

Off task:

The student was engaged in an activity that was in violation of class rules.

Examples:

-- The target student converses with a classmate during the teacher's instruction.

-- The student holds his partner's racquet, not allowing him to proceed with the assigned task.

Cognitive:

The student was attentive as the teacher instructed the class. The student was cognitively involved with the subject matter.

Examples:

-- The students are writing their answers to a quiz.

-- A target student watches as the teacher demonstrates for the class.

Interim:

The target student was engaged in a non-instructional aspect of the activity.
Examples: Two students finish the first game of a tennis match and proceed to change ends.

-- A target student retrieves a volleyball from the corner of the gym.

On task: The student was appropriately engaged in carrying out an assigned non-subject matter task.

Examples: A target student helps form a four man squad.

-- The target student moves the bench from the storeroom, on the instructions of the teacher.

Waiting: The target student waited for another opportunity to respond or for further instructions.

Examples: The student completed his assignment and waited for another opportunity to respond.

-- The target student arrived at her assigned place on the gym floor and awaited further instructions.

Teacher Role had four categories. They described the immediate on-going role of the teacher during each interval.

Evaluation: The teacher's immediate on-going role was formal testing of the students.

Examples: The teacher supervised the students as they completed a written test.

-- The teacher moved about the class to evaluate the motor skills taught and practiced over the previous weeks.
Instruction: The immediate on-going role of the teacher was to communicate information to the students.

Examples: -- The teacher outlined the main performance points of the spike.

-- The teacher informed students about the rules associated with student behavior in the gym.

Participation: The immediate on-going role of the teacher was that of participator in the activity of the lesson, along with the students.

Examples: -- The teacher joins a group of students in completing a basketball drill.

-- The teacher helps make up the final couple for a folk dance.

Supervision: The immediate on-going role of the teacher was to supervise student behavior in the class. When students moved from one instructional episode to another (from instruction to activity), the teacher was usually in a supervisory capacity. If the teacher had told the students where to go as they moved away, the teacher would still have been in an instructional role.

Examples: -- The teacher observes the students as they move the equipment to the storeroom.

-- The teacher observes the students as they perform their assigned tasks.

Teacher Behavior focused on specific teacher behaviors during each interval. There were nine pre-defined categories of teacher behavior.
Accountability: The teacher held the students responsible for their behavior and/or kept them alert and on task. The teacher may have provided a series of cues to the students before or as they began a task, solicited a response of the student, listened to or watched a response of a student to a teacher solicitation, or consequated a student for appropriate or inappropriate behavior. Accountability may have been of the class, two or more students, or an individual student.

Examples:  
-- Class Accountability...Teacher waits for silence from class before proceeding with instruction.  
-- Group Accountability...Teacher asks a group to repeat their routine on the apparatus.  
-- Individual Accountability...Teacher asks a target student to demonstrate the walk-over he has practiced.

Appraisal: The teacher made a judgment of correctness or incorrectness about a student's behavior or product of that behavior.

Examples:  
-- "That is really good, John. Keep it up."

-- "You need to stretch out those legs as you enter the water."

Setting Students' Expectations: The teacher outlined certain norms of behavior for class in terms of general and skill behavior.

Examples:  
-- The teacher outlines the main rules of general class behavior.

-- The teacher explains to the students the standard of work expected of them for their floor routine.
Demonstrating: The teacher demonstrated a skill, skills, or strategy students were to practice during the lesson. The demonstration may have been done with the aid of one or more students.

Examples: -- The teacher does a squat-through vault as the students observe.

--- Teacher demonstrates the appropriate topography of the tennis serve.

Initiating Information: The teacher communicated information to the students about the subject matter of the day's lesson.

Examples: -- Teacher outlines the basic offensive strategy in power volleyball.

--- Teacher outlines the drill students are to work on for the remainder of the class.

Giving Directions: Teacher explanations of how to prepare the instructional setting for appropriate task activity.

Examples: -- Teacher lists the equipment to be moved from the storeroom to the gym and explains where to place it.

--- Teacher arranged students into squads.

Observing: The teacher watched one or more students during an instructional, transitional, managerial, or activity episode. The teacher may have scanned the gym from one position or moved about the gym silently watching the general and skill behavior of the students.
Examples:  -- The teacher watches the class as they move the equipment into position.

-- The teacher observes a group at the far end of the gym complete their routine.

Monitoring:  No attempt was made by the teacher to maintain eye contact with the students.

Examples:  -- The teacher speaks with a visitor to the gym, paying little attention to students' behavior.

-- The teacher works at the tape recorder to find the appropriate cue. She/he is not in a position to observe student behavior.

Break:  The teacher was not in a position to see any of the students.

Examples:  -- Teacher leaves the gym to find some string.

-- The teacher goes to the store-room for some extra shuttle-cocks.

Teacher Verbal Interaction Behavior was recorded using event recordings.

Praise:  A positive reaction by the teacher to appropriate general student behavior.

Examples:  -- "That was a nice job, Bill, the way you stored all those basketballs."

-- "Great, Lucy. You have been first to class every day this week. Keep it up."
Desist: The emittance of a verbal behavior by the teacher in an effort to terminate student misbehavior.

Examples:  
-- "Andrew, stop talking while I demonstrate."
-- "No, leave the balls in the bag, Matt, and return to your squad."

Positive Feedback: A positive reaction by the teacher to student skill behavior related to the day's lesson. This can be specific or general in nature.

Examples:  
-- "Good, Paul. That was a nice pass."
-- "Super, Tracy. You really snapped your wrist that time for the smash."

Corrective Feedback: A judgment of incorrectness by the teacher to a student or students motor response(s). This can be general or specific in nature.

Examples:  
-- "Mary, you need to improve the serve."
-- "Will, lock the elbows as you contact the ball."

Prompts: Cues for previously described or acquired psychomotor behaviors. Presentation of these cues can act as a stimulus for a desired response.

Examples:  
-- "Richard, remember to bend your knees slightly on landing."
-- "Now, Donna, try and place the ball down one of the tramlines."
Field Testing

Initial field testing of the observation system was done from video-taped physical education tapes developed for previous studies. After some modifications, it was again field tested at a local elementary school where field experience students were teaching physical education. A category (Smile/Laugh) was deleted from the system because of the observers difficulty to obtain reliable data. Final field testing of the instrument was completed in each of the schools where the study took place. It was hoped this would also help reduce the reactivity of both the teachers and the students to the presence of coders during actual data collection for the study.

Coding Procedure

The observation of the teachers and the students was done at each school as the teacher taught. Two coders were used. The first observer coded the class context and the behavior of each of the three students. The second observer coded the role and behavior of the teacher during the same interval. In case of an emergency, that coder also observed and tallied the frequency and quality of teacher student interaction. Otherwise, it was recorded on a cassette and coded later by the experimenter.

With a split ear jack, both observers listened to the same cue tape. The intervals were 15 seconds long. Both the five and ten second cues were also available to the coder on the tape. This helped the observers judge time more accurately and thereby increase interobserver agreement. The first observer coded class context and the
behavior of student one during the first five seconds. Because Class Context did not tend to change frequently during a lesson, this was not a difficult procedure. Between the fifth and tenth second cue, the coder observed and coded the behavior of student two. The behavior of student three was coded during the final five seconds of the interval. The first observer repeated the procedure for every interval.

Simultaneously, the second coder coded the main context to best describe teacher behavior; for example, the teacher may have been in an instructional role or in a supervisory role. Having decided the context, the coder then decided which specific behavioral event best characterized the interval. One of two things had to occur. In the event that only two behaviors occurred, the behavior that lasted longer than seven and a half seconds was to be coded as best characterizing that interval. In the event that three or more behaviors were observed in the same interval, the coder had to decide which one lasted for the greatest period of time. In the event that an observer thought two behaviors occurred lasting the same time, a coding procedure was adopted, placing the categories in a specific order. The higher category on the list was chosen to best characterize that interval.

The teacher wore a cordless microphone while teaching. Her verbal behavior was recorded on a cassette. The synchronization of the recording tape and the cueing tape was vital. It allowed the researcher to code teacher student interaction later and superimpose it on each specific interval for the entire lesson. The second coder, who focused on the behavior of the teacher, could listen through an ear jack to this recording and hear clearly what the teacher said even if at the far end of the gym or speaking so quietly that normal hearing ability could not discriminate what
was being said. This helped the coder in deciding the behavior to best characterize that interval. There was no need to follow the teacher around the gym, thereby avoiding excessive intrusion on the teachers' lessons.

Every fifteen seconds of the lesson, a record was made on five separate components of classroom life. These components dealt with class context, teacher role, teacher behavior, teacher student interaction, and student behavior. The team coding was adopted in order that the time intervals be shorter, resulting in more precise and representative data for each behavioral component than would have been possible using an individual observer.

Observers began their coding for each lesson at the high school at the time designated by the teacher as the start of the class. This did not include locker changing time. Any student late for class was not coded until they entered the gym. At the elementary school, observations began when the regular classroom teacher brought the students to the gym and the physical education teacher acknowledged their presence. Coding was terminated as the students walked out of the gym with their classroom teacher. Coding at the middle school began when the teacher called her students to attention. Because of the noisy conditions in the gym, much of the teacher's instruction was carried on in the locker room. Observations were terminated on the dismissal of the students by the teacher. If a student was being desisted by the teacher after class dismissal, then coding continued until this interaction was completed. If a target student was not a focus of the desist, then Student Behavior was coded as On task and Class Context as Transition.
Two coding sheets were used in data collection for later analysis (see Figures 2 and 3). Each had space for descriptive information about the teacher, the size of the class, the observers, and the interobserver agreement score, where relevant. Each provided information about the activity of the day, the actual time the class started and finished, and the number of students who participated and were dressed appropriately for the class.

Coding Sheets 1 and 2 could accommodate 14 minutes of class time, which was 56 intervals of 15 second duration. This was divided into four rows of 14 intervals. On Coding Sheet 1, Class Context data was recorded. Directly below Class Context, data on each of the three target students was recorded in sequence for each interval, as shown in Figure 1.

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Figure 1. One Interval of Class and Student Behavior (Coding Sheet 1)
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**Class Context**
- Management (M)
- Transition (T)
- Warm-up (W)
- Evaluation (E)
- Fitness (F)
- Instruction (I)
- Drill Practice (P)
- Scrimmage/Routine (R)
- Modified Game (Mg)
- Game (G)

**Student Behavior**
- Interim (I)
- Motor Appropriate (Ma)
- Waiting (W)
- Motor
- On-task (On)
- Inappropriate (Mi)
- Off-task (Of)
- Motor Supportive (Ms)
- Cognitive (C)

Figure 2. Coding Sheet #1
School: ____________________ Date: ________ Coder: ________ Activity: ________

# Participating: ____________________ # Dressed: ____________________

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Figure 3. Coding Sheet #2
Data for Teacher Role and Teacher Behavior were recorded on Coding Sheet 2. Space was allocated on the sheet to accommodate Teacher Interaction data coded from an audiotape of the teacher's lesson. While the categories and their corresponding codes were listed at the bottom of Coding Sheet 1, the same procedure was not possible on Coding Sheet 2, due to space limitations. Each coder had a separate page, listing these codes in the predetermined hierarchy. For each coder, the procedure was similar: the behavior category listed highest was given priority, if two or more categories were of equal duration during one interval.

Figure 4. One Interval of Teacher Behavior (Coding Sheet 2)

On completion of the coding, both coders numbered the coding sheets they used and bound them together. Later, both sets of data were transferred to a master sheet showing all five components of classroom life simultaneously for each interval. It was from the master sheet that each behavior was tallied and recorded on a daily basis (see Appendix C).
Training the Observers

Training for the observers began 21 days prior to actual data collection. It was divided into three phases. The first phase necessitated familiarity with the various components of the system and the behavioral definitions of the categories within each component. Criteria for competency at this stage was met when observers passed a written test on category definitions with 90 percent accuracy. The second phase involved the discrimination of the categories from various video-taped physical education lessons. The final phase involved live coding in the schools. The schools used in the study were used for this purpose.

Interobserver agreement was measured using a scored interval method (Hawkins & Dotson, 1975). The criteria for competency in the second and third phase was 80 percent agreement with the researcher on each component that the observer was coding. That did not always occur. While all the coders learned to code Teacher Role, Teacher Behavior, and Teacher Interaction (Coding Sheet 2), only one of the coders was trained to collect data for Class Context and Student Behavior (Coding Sheet 1). She had previous experience with direct observation of student behavior. This coding procedure was more difficult. The researcher coded Class Context and Student Behavior during the study except when interobserver agreement checks were made.

The manual used by the observers in training, the various tasks assigned to them, and the coding sheets used in training can be found in Appendix C. Each of the components was practiced separately, initially. The length of the interval was longer at first to allow the observer to discriminate
the behaviors. Finally, the two components were coded together and the interval shortened to 15 seconds.

During the study, the three main coders were checked at least three times each for interobserver agreement.

**Intervention Strategy**

Initially, it was intended the design of the study be similar to a multiple baseline design across teacher behaviors. It was hoped that changes in teacher behavior patterns would result, in time, in increased on task student behavior.

The changes in teacher behavior were to be the result of specific feedback from the researcher on the teacher's behavior. This feedback occurred during specially scheduled conferences with the teacher outside their teaching hours. The elementary school teacher had two conferences while the middle and high school teachers had three conferences each.

Conferences were held either at the teachers' school or at the physical education department offices at The Ohio State University. The teacher from the high school came to the university campus two of the three times for conferences. She worked close to the university and it was convenient for her to do that.

For each conference with the teachers, the researcher had set specific objectives. In the middle and high schools, only the teachers and the researcher were present for the conferences. The principal at the elementary school expressed an interest in attending the initial conference and did so. He also made frequent inquiries, during the course of the study, as to the progress being made by his teacher on the target behaviors identified during the
conference. Specific details of what transpired at each conference session are outlined in Appendix E. A general outline of the procedure is described below.

At the first conference with each teacher, it was explained precisely what the team of coders did during her class. The observation system and the coding sheets were explained. Up to that point, no teacher knew what specifically the coders did each class period. When all queries from the teacher were dealt with, the researcher displayed the illustrations of the teacher and the target students' behavior as it occurred during the baseline phase. Each graph was described and explained in detail. There were five graphs: one of class context, one of teacher-student interaction, one of teacher role, one of teacher behavior, and one of student behavior.

The specific response class to be modified was pinpointed and the teacher was asked to try and improve that behavior over the next several days. Suggestions about how that was to be done were provided. The coders would then return to the classroom and continue to collect data to determine if the teacher behavior had changed. The teacher was given two or three days to practice.

A second conference was scheduled when either the target behavior began to show improvement in accordance with the set criteria, or showed little change. Usually, the teacher had a two to three week break between conferences. The researcher was present at each coding session and often provided immediate feedback after the lesson, on the target behavior.

The last intervention for the middle school and high school teachers involved watching a video-tape of them
teaching the class observed for the study. Specific events were emphasized and teacher concerns about their teaching discussed. Specific targets were again set for the teacher and daily feedback for the final days of the study provided on these behaviors by the researcher.

**Experimental Design**

The experimental design used in this study was a series of AB designs using multiple target measures and a series of extended follow-ups on the dependent variables (Hersen & Barlow, 1981). In the AB design, the target behavior is already specified and repeated measurement is taken through the A (baseline) and B (intervention) phases of experimentation. This strategy has been referred to by Campbell and Stanley (1966) as a "quasi-experimental design".

The AB design is subject to numerous threats to internal validity such as history, maturation and multiple treatment inference among others. Despite the need to consider some major reservations when attributing changes in the dependent variable to the effects of the treatment, the AB design does have some utility in field experiments when more traditional forms of experimentation are not possible (Campbell, 1969). Hersen and Barlow (1981:170) argued that the AB design is best applied "as a last resort measure when circumstances do not allow for more extensive experimentation."

The study described in this report was an exploratory study to examine the feasibility and effectiveness of a supervision package to improve the teaching effectiveness of physical educators. The experiment was done in the field (the teachers' gymnasium) and was ultimately client centered. The researcher, who assumed the role of supervisor within this inservice education supervision program, was a guest in
the teacher's schools and had no formal connections with the administration. Because of this informality, the relationship between the teachers and the researcher was rather tenuous. The researcher had little control, during the study, over what the teachers chose to do or not to do and had little control to consequate their behavior.

Despite the limitations to this field work, it was considered a necessary first step in doing inservice research in physical education. Virtually no research has been done in this area (Locke, 1982). The added difficulty of working with clients in their environment is perhaps one major factor for such paucity of research. This project was completed with a view to providing some future directions for a more sophisticated technology of inservice education in physical education.

The modification of the basic AB design to include the simultaneous monitoring of multiple target measures strengthened the design and allowed for "some objective estimate of the treatments success" (Hersen & Barlow, 1981:172). The use of an extended followup and booster treatment (a second or third conference) can lend additional support for the treatment's efficacy.

An alternative design to the one used in this study would be a multiple baseline design across behaviors within subjects. Sequential application of the treatment to discrete behaviors allows an examination of the effects of the treatment on the dependent variables. Future research on the efficacy of inservice programs might use such a design.
CHAPTER IV

ANALYSIS AND DISCUSSION OF THE DATA

The results of the study, showing the effects of a series of conferences on the allocation of class time to Activity, Task Engagement rates, and ALT-PE(M) of the target students, and on the verbal behavior patterns of the three experienced teachers, are presented and illustrated in this chapter. Inter-observer agreement data for the principal observers are reported and discussed. The findings for teacher Verbal Interaction, Class Context, Student Task Engagement, and ALT-PE(M) are presented and discussed by teacher and across teachers. A discussion of the overall effect of the intervention on the behavior of the teachers, the target students, and the effectiveness of the teaching learning process concludes this chapter.

Inter-Observer Agreement

The data for this study were collected by a team of two observers. One observer focused on teacher behavior and the second recorded Class Context and student behavior. The researcher collected data using both observation systems. Observer One was the only other observer trained to collect data with both systems. This allowed the researcher to complete inter-observer agreement checks on the coders during the study. Each time such a check was done, three coders were at the school site at the one time. This was to ensure
data on both systems were collected for the entire lesson. Inter-observer agreement checks were completed on Observer One six times and three times each on Observers Two and Three.

The scored interval method was used to calculate inter-observer agreement (Hawkins & Dotson, 1975). This is a stringent procedure to estimate inter-observer agreement, especially when the frequency of occurrence of a behavior is low to medium.

Inter-observer agreement scores are affected by the number of categories available to describe any one behavior. The fewer the categories, the greater the possibility of agreement for each of the reported categories. Chance agreement is determined by dividing the total number of categories in any one level into one and multiplying by 100. The chance agreement score for the various categories observed was as follows: Class Context, 10 percent; Managerial Episode, 10 percent; Activity Episode, 10 percent; Teacher Instructional and Managerial Behavior, 11 percent, Student Behavior, 12.5 percent. Tables 1 and 3 represent the inter-observer agreement data for each observer through the study.

Discussion of Inter-Observer Data

The majority of the inter-observer agreement scores were within the predetermined criterion level of 80 percent. Some of the student behavior agreements were below criterion levels. This was probably due to the low rate of occurrence of Task Engagement.

Class Context agreements were well above criterion levels except for two Managerial Episode checks. These low scores are due to the low occurrence of managerial behaviors
during both these lessons. All observations for Cognitive and Activity Episodes met criterion levels of agreement.

Teacher Role was coded well within criterion levels for each inter-observer agreement check for all observers. There were only four possible categories available to the observers and discrimination of these behaviors was a relatively easy task.

In coding Teacher Behavior, the observer had ten possible categories to choose from. This may account for some inter-observer scores in the seventies. The sampling format used to collect these data may also account for low scores. The observer had to make a judgment as to which Teacher Behavior best characterized the interval by estimating which behavior lasted the longest in any given interval. This is more a timing than a definitional problem. Several behaviors can be emitted by a teacher during a 15 second interval and trying to discriminate which occurred longest may account for the low rates on this teacher dimension. The Teacher Instructional and Managerial Behavior data are presented for Teacher C with an awareness of this limitation.

It was assume by the researcher that inter-observer agreement scores obtained for any other series of data points during the study would have been very similar to those displayed in Tables 1, 2, and 3. It was concluded, therefore, that the data collected during this study were reliable data.
Table 1

Inter-observer Agreement for Observer One

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Key:  
NC = Not coded during the session  
* = Instructional episode did not occur during inter-observer agreement check  
Δ = This observer was trained to use the teacher, class and student observation instrument  
Abs. = Student was absent
Table 2

Inter-observer Agreement for Observer Two

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<tr>
<td>Teacher Role</td>
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</tr>
<tr>
<td>Teacher Instructional &amp; Managerial Behavior</td>
<td>76.00</td>
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</tbody>
</table>

^Trained only on the Teacher Behavior Observation System

Table 3

Inter-observer Agreement for Observer Three

<table>
<thead>
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<tr>
<td>Teacher Instructional &amp; Managerial Behavior</td>
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^Trained only on the Teacher Behavior Observation System
Teacher Verbal Interaction

To ensure accurate and reliable measurement of the teachers verbal interaction with their students, the teachers wore a cordless microphone around their necks during each of the observed lessons. The teachers were required to wear a 3 by 4 inch battery pack in their pockets. This did not interfere in any physical way with the teachers' ability to teach their classes. It allowed their complete freedom of movement about the gymnasium. With the use of an ear jack, the observer coding teacher behavior could hear the teacher even while she was at the other end of the gymnasium speaking quietly to a group of students. This verbal behavior was recorded and the verbal interaction data were taken from the audio tape later. The five components of verbal interaction coded were teacher praise and desist, teacher positive and corrective academic feedback, and teacher prompts (refer to p. 80 for the behavioral descriptions of each of these components).

Verbal Interaction - Teacher A

The effects of the intervention on Teacher A's verbal behavior are presented. Table 4 shows the mean frequencies and rates of responding for each of the five teacher verbal behaviors coded during the study.

Baseline. The first five lessons in the study were used to gather baseline data. Four of the five lessons were part of a Square Dance unit. See Appendix F for an outline of the activities taught for the fifteen lessons observed. During baseline, the most frequently occurring teacher verbal behavior was teacher desisting of student inappropriate
behavior (see Figure 1). The teacher desisted the students individually, in groups, or as a class, an average of 38 times during each of the five lessons at a mean rate of 8.3 desists every ten minutes. The most infrequent teacher verbal behavior during baseline was teacher praise for appropriate general student behavior. Teacher appraisal of such appropriate behavior occurred eight times during baseline. This was an average of 1.6 praises each lesson and a mean rate of 0.4 per ten minutes.

Teacher A provided corrective feedback to students 61 times, an average of 12.2 corrective feedback statements per lesson at a mean rate of 3.2 every ten minutes. Positive feedback, however, was provided only 26 times for the baseline phase. This was an average of 5.2 feedbacks each lesson at a mean rate of 1.3 every ten minutes.

Teacher prompting of student behavior was the second most frequent behavior. It occurred 143 times during baseline at a mean rate of 7.7 prompts per ten minutes (see Table 4).
Figure 5. Cumulative Response Frequencies for Verbal Interaction - Teacher A
Table 4
Mean Frequencies and Rates for Teacher A's Verbal Interaction

<table>
<thead>
<tr>
<th>Category</th>
<th>Baseline</th>
<th>Intervention</th>
<th>Conference one</th>
<th>Conference two</th>
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<td>R^b</td>
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<td>R</td>
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<tr>
<td>Positive</td>
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<td>Corrective</td>
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<td>7.7</td>
<td>31.2</td>
<td>9.6</td>
</tr>
</tbody>
</table>

^aMean frequency of response

^bMean rate of response per ten minutes
Intervention, Conference one. The baseline data were graphed and, together with other teacher behaviors, presented to the teacher during their initial conference with the researcher. The principal attended this conference. In discussion with the teacher, it was decided the target for teacher behavior change during the coming lessons would be to increase both praise and positive statements to the students while decreasing teacher desists to students. The teacher was to focus on appropriate academic and general student behavior by "catching them being good" and "ignoring minor inappropriate behavior" that did not seem to cause a disruption to the class.

No observations were made of the next two lessons taught to these students. This was to give the teacher an opportunity to practice her new verbal behavior pattern. Following this practice period, five lessons were observed, coded, and audio-taped. These five post-conference lessons showed a decrease in teacher desisting behavior by 50 percent, from 154 to 78 desists. This was a mean of 15.6 desists per class at a mean rate of 4.6 every ten minutes.

Praising general student behavior remained the teacher's most infrequent verbal interaction behavior. It did increase, however, from an average of 1.6 praises per lesson to 5.6 per lesson after the first conference.

Academic feedback also increased from baseline to post-conference observations. Corrective feedback increased from a total of 61 in baseline to 137 feedbacks during the five post-conference observations. This was an average of 27.4 per lesson at a mean rate of 8.3 per ten minutes. Positive feedback more than doubled, increasing from 5.2 positive statements per lesson to 11.4 per lesson.
Teacher prompting of student behavior increased from 143 to 156. This was a mean of 31.2 each lesson at a rate of 9.6 per ten minutes, an increase of 2.1 prompts every ten minutes from baseline (see Table 4).

Conference two. The data for the previous five observations were presented to the teacher at this second conference. While the teacher was encouraged to maintain the new pattern of interaction with the students during the coming lessons, these behaviors were not the specific targets for teacher behavior change over the next five observations. The principal was not present at this second conference. The data were presented to him several days later.

After the second conference, teacher desists of students continued to decrease to an average of 10.6 desists per lesson and a mean rate of 2.9 desists per ten minutes. This was the second lowest verbal behavior to occur during these five lessons. During baseline, it had been the highest occurring verbal interaction behavior.

Praise for students' general behavior continued to be the lowest occurring verbal behavior by the teacher. There was a slight drop from the first intervention to the five observations after conference two. It decreased from a mean per lesson of 5.6 to 5.2 praises. This was a mean rate of 1.4 per ten minutes.

The rate for corrective feedback to students increased by a mean rate of 2.6 per ten minutes from baseline to the last five observations. Positive feedback to students on their appropriate skill behavior occurred at a mean of 33.4 per lesson, a mean increase per lesson of 22 positive feedback statements.

Prompting also increased from a mean of 31.2 prompts per
lesson to a mean of 40.4 prompts per lesson. Prompts occurred at a mean rate of 11.5 per ten minutes.

Summary

Figure 5 shows the significant changes in the pattern of teacher verbal interaction during the study. Desisting behavior was reduced from a mean of 30.8 per lesson in baseline to 10.6 per lesson during the final phase of the study. Prompting increased from 28.6 to 40.4 per lesson. Academic feedback also increased during the study. Corrective feedback went from a mean of 12.2 to 39.6 per lesson, while positive feedback to students increased from a mean of 5.2 to 33.4 per lesson from baseline to the final five observations made after the second conference.

Teacher attention to skill behavior increased over 400 percent while desisting behavior decreased by a third (see Table 4). The cumulative responses for each component of teacher verbal interaction behavior shows the increases in teacher responding for all behaviors except teacher desisting and teacher praise. The slopes of the lines in Figure 5 represent the frequency of teacher responses across time. The greater the slope of the line, the greater the responses frequency.

Discussion of Verbal Interaction - Teacher A

The baseline data for Teacher A indicated relatively high rates of desisting behavior and low rates of academic feedback and praise. Her desisting behavior was significantly higher than the two other teachers. Teacher A expressed "surprise" at the data and a desire to change to a more positive interaction style with her students. She explained the data as a function of her overly high expectations for
student self-management skills. This, she suggested, was from a ten year history of teaching at the high school. The large class of 36 fifth graders was not the regular class size and was a managerial problem for the teacher as she considered them a "very lively class".

It was suggested by the researcher that she try to focus on appropriate student responding. She was encouraged to focus on student skill behavior and several suggestions were provided as to how that could be done. This intervention was powerful enough to alter significantly Teacher A's pattern of verbal behavior. Her rates of desists decreased significantly while her rates of academic feedback, both positive and corrective, increased significantly. The intervention made no significant difference to the teacher's frequency of praising student behavior. It remained the lowest occurring teacher verbal behavior during the study.

Praising what seemed to be the "expected behavior" of students in the gymnasium seemed to be a difficult task for Teacher A. The students who received most of the teacher's attention were those who were involved in inappropriate rather than appropriate behavior. Students, who assisted the teacher with equipment or sat quietly waiting to be told what to do, were seldom reinforced by the teacher for their attention to the rules. It is interesting that, given this frequent lack of recognition for appropriate student behavior, more students were not involved in misbehavior. Teacher A did learn to respond to skill behavior more positively. Perhaps teachers need more time to learn to discriminate the appropriate general behavior of students.
Verbal Interaction - Teacher B

Teacher verbal interaction was not a primary focus of the conferences with Teacher B. The baseline data, obtained over seven observations, were presented to the teacher at the initial conference. Beyond giving examples of each of the five components of teacher verbal interaction behavior, no value judgments were made by the researcher about the quantity of the interaction. No targets for verbal interaction were established for the teacher to work on. The researcher did praise the teacher for the frequency of positive interactions made to her students. There was a mean of 62.6 positive feedbacks per lesson during baseline, 41.3 prompts per lesson, and 1.9 general praise statements. Corrective feedback occurred an average of 55.7 times per lesson (see Table 5 and Figure 6).

Upon inspection of the data, the teacher expressed "amazement" at the frequency with which she interacted with her students during lessons. She expressed concern that she might be speaking too frequently and that she would have to "cut down" a little on this. The researcher stressed the importance of social reinforcement to task involvement and a positive climate.

Conferences one and two. The rate of positive feedback decreased significantly after the first conference between the teacher and the researcher, from a mean baseline rate per ten minutes of 18.3 to a post-conference mean of 8.8 positive feedbacks per ten minutes.

At the second conference, the teacher expressed "total frustration" with the boys behavior in her class (see de-sisting behavior for lessons 8-11, Figure 6). She suggested making the students sit and watch four students from the class demonstrate how the game ought to be played. The
researcher suggested some alternative strategies to increase the students' opportunity to respond to the tasks and to increase the students' success rate. These strategies were agreed to by the teacher. How to deal with student misbehavior was discussed. The behavior management strategies to be tried by the teacher were "catch the students being good" and "time out". The teacher's desisting behavior decreased and the rate of positive feedback and general praise behavior increased after the second conference (see Figure 6). The rate of positive feedback rose to a new level during lesson 13 and the trend continued upward for the remainder of the tennis lessons (to lesson 15). The mean rate for positive feedback for lessons 16, 17, 18, and 19 decreased to 9.7 per ten minutes from a mean rate of 19.2 per ten minutes for lessons 13, 14, and 15.

During the final conference with the teacher, there was no discussion of teacher verbal interaction. As verbal interaction was coded for only two of the three final observations, no trends could be established and comment would be inappropriate.
Figure 6. Cumulative Response Frequencies for Verbal Interaction—Teacher B
Table 5

Mean Frequencies and Rates for Teacher B's Verbal Interaction

<table>
<thead>
<tr>
<th>Category</th>
<th>Baseline F&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Baseline R&lt;sup&gt;b&lt;/sup&gt;</th>
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<th>Conference one R</th>
<th>Conference two F</th>
<th>Conference two R</th>
<th>Conference three F</th>
<th>Conference three R</th>
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<td>1.0</td>
<td>0.3</td>
</tr>
<tr>
<td>Desist</td>
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<td>9.0</td>
<td>2.3</td>
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<td>54.3</td>
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<td>9.1</td>
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<td>43.0</td>
<td>14.5</td>
<td>51.7</td>
<td>14.9</td>
<td>59.0</td>
<td>18.8</td>
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</table>

<sup>a</sup>Mean frequency of response

<sup>b</sup>Mean rate of response per ten minutes
The initial baseline data for Teacher B indicated high rates of academic feedback and prompting. During the seven baseline observations, the teacher provided the students with 1,229 feedback statements and prompts. This was in addition to instructions and directions to complete assignments.

It seemed many of the teacher's verbalizations were non-functional. They certainly did not function to keep the students on-task. In fact, student engagement rates were the lowest of all target students observed. These data lend support to Brophy's argument that unless praise is applied contingently upon the emittance of specific behaviors, it is non-functional. He also argued that praise (Brophy made no distinction between general and academic feedback) is often determined more by teachers' perception of students' needs than by the quality of the students' performances. In the lessons observed during this study, most of students' behavior did not warrant such frequent praising or positive feedback.

Teacher B's verbal behavior pattern prior to and after conference one deserves further comment. After conference one, she decreased significantly her rate of verbal interaction with students. She commented during the first conference that she had not realized she spoke so much during her lessons and that she ought "to slow down". Her desisting behavior remained higher than both other teachers, however. At the second conference, she expressed frustration with what she termed her inability to manage the boys in her tennis class. The major problem, it seemed, was the tasks assigned to the students were too difficult for their skill level. Consequently, there was increasing off-task behavior
creating a serious managerial problem for the teacher. This was discussed with teacher at the conference and lessons were designed to increase the success rate and student engaged time for the remaining tennis lessons. The teacher was encouraged to provide students with positive academic feedback when appropriate in the subsequent lessons. The increase in her behavior for lessons 13 through 15 is evident in Figure 6. The decrease in positive feedback after that may be a function of beginning a new unit of physical activity (Track and Field). Three data points are not sufficient to suggest a cause effect relation between the intervention and the teacher's verbal behavior pattern. But, one can be somewhat confident that the increased success rate was perhaps due to a better matching of the subject matter to the students' abilities. This, in turn, may have influenced the verbal pattern of the teacher during the lessons.

It was possible to modify the teacher's verbal behavior. Maintenance of such behavior is dependent perhaps upon the maintenance of successful student responding to the assigned tasks. The teachers inability to do such in the Track and Field unit coincides with a drop in academic feedback. Such speculations go beyond the data but are worthy of consideration. The intervention package was not successful with Teacher B in developing a functional relationship between teacher verbal interaction and student behavior.

Verbal Interaction - Teacher C

This section presents the verbal interaction data for Teacher C (see Figure 7). Table 6 shows the mean frequencies and mean rates per ten minutes for each of five teacher verbal behaviors for each of the three experimental phases of the study. Figure 7 graphs the cumulative responses and
for each of the five teacher verbal behaviors coded during this study.

Baseline. Seven observations were made during baseline. The lowest occurring verbal behavior was teacher praise. It occurred an average of 0.6 times per ten minutes or one praise statement every 16.6 minutes. The highest occurring verbal interaction was corrective feedback. It occurred an average of 23.4 times per lesson. Positive skill feedback and prompting rates were similar with 7.6 feedbacks and 8.6 prompts per lesson. Desists occurred an average of 4.4 times per lesson (see Table 6).

Intervention, Conference one. The targets set for teacher behavior during the first conference were to increase the teacher's rate of appraisal, specifically corrective and positive feedback statements to her students. It was suggested that the teacher focus her attention on student skill attempts and provide appropriate feedback regarding student responses. The teacher was not observed for two lessons after the conference. This was to provide the teacher with an opportunity to practice these behaviors. Observations were made on ten lessons before the next conference occurred. Data on teacher verbal behavior were collected for nine of those days. Equipment failure resulted in the loss of one data set.

After the first conference, academic feedback increased. Positive feedback increased from a mean baseline rate of 7.6 per lesson to a mean rate of 14.3 per lesson. This was an increase in mean rate per ten minutes of 1.9 during baseline to 4.3 in the second experimental phase (nine data points after the initial conference). Corrective feedback increased from a mean of 23.4 to 35.6 statements per lesson. This was an increase in rate per ten minutes from 6.1 to
10.8, from baseline to post-intervention one (see Figure 7).

**Conference two.** The preceding data were presented to the teacher in the second conference. The researcher complimented the teacher on the increased feedback. Maintenance of these appraisal rates were encouraged. Although the new targets for teacher behavior change were the increased use of prompting to keep students engaged in the assigned task while the teacher provided individual feedback to students, academic feedback continued to increase to 24.6 and 43.1 per ten minutes for positive and corrective feedback statements, respectively (see Figure 7). Prompting increased from a mean of 14.9 prompts before conference two to a mean of 28.1 prompts after conference two.

**Conference three.** Teacher verbal interaction data were not presented to the teacher during the third conference. The target set for Teacher A was to increase the Task Engagement and ALT-PE(M) rates of the three target students. Teacher verbal interaction data were collected for four of these five observations. Positive and corrective feedback per lesson continued to increase but the rate per ten minutes dropped in both cases from 8.7 to 7.7 for positive feedback and from 15.3 to 14.9 for corrective feedback statements (see Figure 7).

**Lesson 29.** Just before Teacher C taught the 29th lesson, the researcher spoke with the teacher reminding her that the objective of the day's instruction was to give extra attention to target student number three and to provide frequent academic feedback both to her and other students in the class. Corrective feedback rose to a peak with 91 feedbacks in one lesson. Positive feedback occurred 45 times in this lesson, which was the highest number of positive feedbacks in one lesson.
Summary

When Figure 7 is examined, one can see that the most dominant verbal interaction behavior by Teacher C is the frequency of corrective feedback, with little difference between teacher prompting and positive skill feedback. Praise was consistently the least frequent pattern of teacher verbal interaction. Teacher desisting behavior returned to a rate of 1.1 per ten minutes (very similar to baseline) from a peak in the second experimental phase of 2.5 per ten minutes. The intervention was successful in increasing the teacher's appraisal of student skill behavior. It had little effect, however, on the teacher's rate of praise for general student behavior.
Figure 7. Cumulative Response Frequencies for Verbal Interaction - Teacher C
Table 6

Mean Frequencies and Rates for Teacher C's
Verbal Interaction

<table>
<thead>
<tr>
<th>Category</th>
<th>( f^a )</th>
<th>( r^b )</th>
<th>Conference one</th>
<th>Conference two</th>
<th>Conference three</th>
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<td>1.0</td>
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<td>Desist</td>
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<td>8.2</td>
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<td>Positive</td>
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<td>Corrective</td>
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<td>35.6</td>
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<tr>
<td>Prompt</td>
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\( f^a \): Frequency of responses

\( r^b \): Rate of responses per ten minutes
Discussion of Verbal Interaction - Teacher C

The baseline data for Teacher C indicated very low frequencies of Praising, Desisting, Positive academic feedback, and Prompts. Corrective feedback was the most frequent verbal behavior and it only occurred 6.6 times per ten minutes. The teacher was "very surprised" with what she termed the "little amount of feedback" she had provided her students. It was agreed that this would be an appropriate focus for teacher behavior during subsequent lessons.

It seemed presenting the data to the teacher and providing examples of the kinds of feedback to use and when to use it was sufficient to increase the teachers academic focus on student behavior. Corrective feedback was the behavior that increased most significantly. No significant change in teacher Praising occurred. It remained the lowest occurring teacher behavior and simply did not occur in several lessons.

The students in Teacher C's class were sophomores and juniors from middle and upper income families. The school was situated in a wealthy urban community. The gymnasium was well supplied with athletic equipment and there was ample space for students to practice. The gymnasium was a well organized environment and violations of class and school rules were few. The "established structure" of the class (Soar & Soar, 1979) may account for the few times it was necessary for the teacher to desist a student. It seems worthy of note that in such an orderly environment, where students consistently adhered to the rules, there was so little reinforcement of students' appropriate behavior. The question remains as to the affects of significantly higher rates of teacher Praise on student behavior.

The pattern of teacher Prompting during the third phase of the study (lessons 18 through 25) can be used to
demonstrate the importance of establishing a functional relationship between two behaviors, if the previously infrequent behavior is to be established and maintained. During conference three, the relatively large amounts of student time in Swimming class spent in Transitions were discussed. The problem was diagnosed that, as the teacher provided students with feedback on their swimming performance, the majority of the class would stop swimming and wait for the next set of instructions, even though the teacher had indicated they were to continue practicing. Inconsistent follow through on her expectations resulted in increased off-task behavior. During the conference, it was suggested the teacher provide intermittent class prompts in between individual feedback sessions with students. The teacher did implement this strategy in the five remaining swimming lessons and while activity time increased, student engagement rate did not.

Teacher prompting decreased after this. It is not possible to determine if it was a function of the strategy's failure to increase student engagement rates, or the teacher did not choose to or could not generalize this group alerting technique (Kounin, 1970) across activities. It is interesting to note that the increase in Prompting occurred simultaneously with an increase in desist behaviors and a decrease in praise behaviors by the teacher. The "current interaction" (Soar & Soar, 1979) used by the teacher to establish higher rates of on-task behavior may explain why academic feedback dropped during this phase. The teacher's failure to establish the routine of students continuing to work while the teacher provided individuals with feedback resulted in increased managerial behaviors and a decreased focus on the subject matter. This finding tends to support the work on classroom management at Texas A&M (Emmer & Evertson, 1980).
Summary of Teacher Verbal Interaction Across Teachers

Figure 8 presents the patterns of teacher verbal interaction for all teachers during the study. The differences in the patterns of interaction for each teacher are evident from this graph. Perhaps the only similarity among the teachers in their verbal behavior is the consistently low occurrence of praise. These findings are similar to those of Heller and White (1975) and Luce and Hoge (1978) who reported teacher praise was often less frequent than teacher criticism. The development of a more positive class climate can be enhanced by teachers making an effort to discriminate and socially reinforce the demonstration of appropriate general behavior and skill proficiency.

The intervention in the study was successful in increasing the academic feedback and Prompting of Teachers A and C. The intervention was unsuccessful in significantly increasing the frequency of teacher Praise. The failure of the intervention to modify teacher behavior in this domain may be a function of how society tends to focus on things people do wrong rather than right.

The focus on corrective feedback rather than positive feedback for student skill attempts supported Quarterman's (1977) findings that teachers tend to emphasize the incorrectness of student responding. The low skill level of the students observed may also be a function of the high rates of corrective feedback.

Teacher Instructional and Managerial Behaviors

Nine different categories were used to describe the behavior that best characterized the teacher during each 15 second interval. The data are presented by category. Only
Figure 8. Verbal Interaction Patterns of Teachers A, B, and C
Teacher C's data will be presented in this section as it was the focus of one of the teacher-researcher conferences. The data for teacher behavior for Teachers A and B can be found in Appendix G.

**Baseline and first conference.** During the first seven lessons observed, teacher behavior was observed, recorded, and later graphed. At the first conference, the data were presented to the teacher in graphic form with explanations and examples of each behavior category. The percentage of teacher time devoted to teacher Monitoring was considered rather high, an average of 28.7 percent per lesson. Monitoring was coded when the teacher was not attending to the students or discussing non-class related issues. The researcher suggested to the teacher that she try and pay more attention to the skill behavior of her students. Such appraisal behavior represented a mean of 4.4 percent of the teacher's time in baseline. In the ten lessons observed after this initial conference, the teacher's appraisal behavior increased to a mean of 13.7 percent of the teacher's time. Monitoring behaviors of Teacher C decreased to 18.9 percent of class time on average for the subsequent ten lessons. Silent observation (0) of students also increased from a baseline mean of 29.3 percent to a post-conference one mean of 32.8 percent per lesson (see Table 7).

**Conferences two and three.** The data collected after conference one were presented to the teacher at the second conference. The student engagement data were discussed and the major objective for the upcoming lessons was to find ways to keep students engaged on the assigned task while the teacher provided individual students and small groups with academic feedback. The focus for teacher behavior was to continue to provide students with individual feedback. During the eight lessons observed after this second conference, teacher
appraisal behavior increased to a mean of 17.8 percent of the teacher's time. These appraisal data were shown to the teacher at the third conference.

A lesson taught by the teacher had been video-taped after the second conference and this was shown to the teacher during the third and final conference. The teacher was encouraged to pay particular attention to the target students by providing them with feedback and ensuring they were as actively involved with the subject matter as possible. Appraisal behaviors by the teacher dropped to 13.8 percent of class time on average.

Monitoring behavior continued to drop during the last five days of observations to a mean of 4.4 percent of the teacher's class time. The teacher's observation behavior fluctuated during the course of the study reaching its highest levels during the last five days of observation (see Figure 9).

Discussion of Teacher Instructional and Managerial Behavior - Teacher C

The high rate of monitoring behavior exhibited by Teacher C may have been a function of the presence of a student teacher in the gymnasium. The teacher tended to communicate with the student teacher about various incidents during the lesson. There were several times during baseline the teacher engaged in conversation with a colleague. The data show she spent almost 29 percent of her time in baseline paying attention to these people rather than her students (see Table 7).

The presentation of these data to Teacher C provided an initial decrease in teacher monitoring. A more significant decrease occurred when the teacher began teaching swimming
Baseline | Intervention

Conference One | Conference Two | Conference Three

- Accountability
- Appraisal
- Directions
- Instructions
- Monitor
- Observe

D - Demonstrate
S - Setting Expectations
B - Breaks

Figure 9. Teacher C's Managerial and Instructional Behavior
and tennis. These environments provided less opportunity for teacher disruption. Visitors to the pool and tennis courts were less frequent. The time devoted to such distractions while in the gymnasium could account for the low frequency of teacher feedback. Appraisal behaviors were recorded an average of 4.4 percent of class time in baseline. Figure 7 shows a very significant increase in this teacher behavior after the initial conference. Making the teacher aware of the need to increase this behavior together with graphic presentation of the data was sufficient to improve this teaching skill. It seems having teachers focus on specific dimensions of their verbal behavior during a lesson is easier than trying to have them change the managerial and organizational patterns they have adopted and practiced for several years.

Table 7

Mean Frequency of Occurrence for Teacher C's Instructional and Managerial Behaviors for Each Experimental Phase

<table>
<thead>
<tr>
<th>Experimental Phase</th>
<th>I</th>
<th>O</th>
<th>Ap</th>
<th>G</th>
<th>SE</th>
<th>M</th>
<th>B</th>
<th>A</th>
<th>D</th>
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<td>Baseline</td>
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</tr>
<tr>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conference One</td>
<td>13.6</td>
<td>32.8</td>
<td>13.7</td>
<td>7.5</td>
<td>2.6</td>
<td>18.7</td>
<td>0.1</td>
<td>8.9</td>
<td>2.9</td>
</tr>
<tr>
<td>Conference Two</td>
<td>21.4</td>
<td>28.8</td>
<td>17.8</td>
<td>4.9</td>
<td>0.3</td>
<td>13.0</td>
<td>1.0</td>
<td>9.1</td>
<td>3.9</td>
</tr>
<tr>
<td>Conference Three</td>
<td>15.2</td>
<td>38.4</td>
<td>13.8</td>
<td>6.0</td>
<td>0.2</td>
<td>4.8</td>
<td>1.4</td>
<td>17.4</td>
<td>3.0</td>
</tr>
</tbody>
</table>
Class Context

The Class Context level decision was made every fifteen seconds. The decision was made on the basis of class activity rather than individual student behavior. The data provided information about the specific context within which the teacher and the target students worked. This was what Moxley (1982:50) referred to as "enduring setting events."

There were ten context level categories. For parsimonious reasons, these categories were grouped according to Cognitive, Managerial, and Activity episodes. Cognitive episodes referred to instructional behavior and included the categories Instruction and Evaluation of cognitive objectives. Managerial episodes included the categories Management, Transition, and Waiting. Activity episodes included the categories of Scrimmage, Skill Practice, Modified Game, Game, and Fitness. Data are presented for the individual categories and for each of the three major episodes. They are presented individually for each teacher.

The effects of the intervention on the allocation of class time to Activity and its effects on the percentage of student time spent in motor activity are discussed concurrently later in the chapter. Class Context data and the target students' data are reported in this section and the following section, respectively, for Teachers A, B, and C.

Class Context - Teacher A

Table 8 presents how the teacher allocated time within her lessons. During the initial baseline phase, Teacher A allocated an average of 48.9 percent of each lesson to Activity, 16.1 percent to Cognitive episodes, and 34.9 percent to Managerial episodes.
Conference one. These data were presented and explained to Teacher A at the first conference. However, they were not discussed at any great length and no targets for improving the allocation of time within lessons were set. Activity time increased, however, to 54.6 percent of class time. Allocation of time to Cognitive episodes remained stable while Managerial time decreased to 11.5 percent (see Table 8).

Conference two. This conference focused specifically upon strategies to maximize student engagement in the assigned tasks and to increase the time allocated to Activity so students have an opportunity to complete the tasks assigned them. The design of a playground games unit was initiated during this conference and it was to be designed with this principle in mind. Activity time increased to 58.3 percent. Managerial episodes continued to decrease from a baseline mean of 34.9 percent to 33.6 to 27.3 percent after the second conference. Time spent in a knowledge focus was constant across the three experimental phases with a mean time per lesson of 14 percent.

Summary

During the study, allocated class time for Activity episodes increased from a baseline mean of 48.9 percent to a mean of 58.3 percent for the final five days of observation (the five lessons after the second conference). Managerial time decreased from a baseline mean of 34.9 to a mean of 27.3 percent, a decline of 7.6 percent per class period. Management time per class decreased significantly from a mean of 9.8 to 1.1 percent of class time. These summary data are available in Appendix I.

While means for the different experimental phases show major differences, analysis of the data shows wide variation
Figure 10. Accrued Time in Managerial, Cognitive and Activity Episodes - Teacher A
within each of the phases for most variables with the excep-
tion of Management time. The allocation of class time to
Managerial, Cognitive, and Instruction episodes was more
a function of the physical activity in progress than the
intervention package used with the teacher.

Despite completing two Physical Education units, Square
Dance and Fitness, no time was allocated for formal grading
purposes (Evaluation). Teacher A explained in an earlier
interview that she did not give written tests. In answer to
the question what criteria do you use, she replied "one is
sportsmanship, one is skill." The only written record of
student skill performance was their scores on the Nabisco
Fitness Test which was completed during the Fitness unit.
These data were not used as a basis for grading students.

<table>
<thead>
<tr>
<th>Table 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Percentage of Class Time Devoted to Managerial, Cognitive, and Activity Episodes - Teacher A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experimental Phases</th>
<th>Managerial Episode</th>
<th>Cognitive Episode</th>
<th>Activity Episode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>16.1</td>
<td>34.9</td>
<td>48.9</td>
</tr>
<tr>
<td>Intervention</td>
<td>Conference One</td>
<td>11.5</td>
<td>33.6</td>
</tr>
<tr>
<td></td>
<td>Conference Two</td>
<td>13.9</td>
<td>27.3</td>
</tr>
</tbody>
</table>
Class Context - Teacher B

During baseline, Teacher B allocated an average of 74.8 percent of class time to Activity, 14.1 percent to Instructional episodes, and 7.1 percent to Managerial episodes (see Table 9).

Conference one. As Teacher B had the highest frequency of teacher Verbal Interactions with students, and the highest rate of Activity time in baseline of all the teachers, these skills were not the focus of attention at the initial conference. Student engagement rate for Teacher B was the lowest for all teachers. Providing suggestions to increase student engagement was the focus of this conference.

Conference two. Student engagement rates were low and it became the focus of discussion in conference two. The allocation of class time to Activity also dropped to a mean per lesson of 57.4 percent.

Conference three. Activity time continued to decrease (74.8 to 57.4 to 49.6 percent) during each of the three experimental phases. It was discussed with the teacher during this conference. Suggestions were made to get students on task more quickly. During the last three days of observations after this third and final conference, Activity time increased to 70 percent, almost back to baseline rate. The last three lessons observed were a Softball and two Frisbee Golf lessons (see Figure 11).

The decrease in time devoted to Activity during the study coincided with the increase in time devoted to Managerial issues. Previous studies have indicated a functional relationship between these two variables. Managerial time per lesson was 17.1, 28.0, and 34.1 percent during the first three experimental phases. After the third conference, it
Figure 11. Accrued Time in Managerial, Cognitive, and Activity Episodes - Teacher B
dropped to a mean of 17 percent, equal to the baseline level.

Table 9
Mean Percentage of Class Time Devoted to Managerial, Cognitive, and Activity Episodes - Teacher B

<table>
<thead>
<tr>
<th>Experimental Phases</th>
<th>Managerial Episode</th>
<th>Cognitive Episode</th>
<th>Activity Episode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>17.1</td>
<td>14.1</td>
<td>74.8</td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conference One</td>
<td>28.0</td>
<td>14.6</td>
<td>57.4</td>
</tr>
<tr>
<td>Conference Two</td>
<td>34.1</td>
<td>13.6</td>
<td>49.6</td>
</tr>
<tr>
<td>Conference Three</td>
<td>17.0</td>
<td>12.0</td>
<td>70.0</td>
</tr>
</tbody>
</table>

Class Context - Teacher C

The Class Context data for Teacher C for each experimental phase are tabulated and shown in Table 10. The Managerial and Activity episodes were a focus for improvement by Teacher C during the study. Managerial episodes included Management, Transition, and Wait categories. Activity episodes included Scrimmage, Skill Practice, Modified Game, Game, and Fitness. The graphic display of the time spent in these three episodes by Teacher C's class is illustrated in Figure 12.

Baseline. Class Context data collected for the first seven lessons were used as baseline data. At the initial
conference with the teacher, the researcher presented the data in graphic form and explained what each category meant in terms of specific class behaviors. While no direct intervention was made to improve the baseline data, the presentation alone could be considered an intervention. Baseline data showed a mean of 19.6 percent of class time devoted to Managerial episodes and 62.9 percent to Activity episodes.

Following the conference, data were collected on Class Context for ten lessons. During this time, Managerial episodes increased to a mean per class of 20.6 percent. The time allocated to Activity episodes dropped to a mean of 56.4 percent, a drop of 6.3 percent of class time per lesson (see Table 10).

Conference two. Upon analysis of the lessons in the second experimental phase (lessons eight through seventeen), the researcher noted a very significant increase in Transition time and a very significant decrease in Management time. The focus of the second conference with the teacher was to help her decrease Transition time by trying to keep the student engaged in the assigned tasks, while the teacher was involved with small groups or individuals, providing them with feedback on their skill behavior. When the data were tabulated, the target for Transition time was not achieved. While Managerial episodes decreased, Transition time continued to increase from 16.5 percent of class time to a mean of 18.3 percent of class time. Activity time also dropped to a mean per class of 50.9 percent, a drop of 5.5 percent of class time per lesson on the average (see Table 10).

Conference three. The data for allocation of time to Managerial and Activity episodes were not presented to Teacher C at the third conference. The target for Teacher C
Figure 12. Accrued Time in Managerial, Cognitive, and Activity Episodes - Teacher C
was to increase student engagement. After the third conference, the Managerial context decreased to a mean of 8.6 percent per lesson. Activity episodes also increased from 50.9 percent for the post-conference two observations to 61 percent in post-conference three observations. Figure 12 shows the wide variation within phases. An increase in Activity time as a function of the conference cannot be substantiated from this visual analysis.

Table 10

Mean Percentage of Class Time Devoted to Managerial, Cognitive, and Activity Episodes - Teacher C

<table>
<thead>
<tr>
<th>Experimental Phases</th>
<th>Managerial Episode</th>
<th>Cognitive Episode</th>
<th>Activity Episode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>19.6</td>
<td>17.6</td>
<td>62.9</td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conference One</td>
<td>20.6</td>
<td>22.1</td>
<td>56.4</td>
</tr>
<tr>
<td>Conference Two</td>
<td>19.3</td>
<td>25.6</td>
<td>50.9</td>
</tr>
<tr>
<td>Conference Three</td>
<td>8.6</td>
<td>19.0</td>
<td>61.0</td>
</tr>
</tbody>
</table>

Task Engagement and ALT-PE(M)

Task Engagement and ALT-PE(M) have been accepted in the Physical Education literature as proxies for student achievement (Metzler, 1979; Siedentop, 1983). A decision regarding
the success or failure of the supervisory model used in this study must ultimately be made on the basis of the effect of the intervention upon Task Engagement and ALT-PE(M). Therefore, it seems most appropriate to discuss the findings of these variables for all target students at one time, and to do so in light of how the teachers' allocated their class time during the study.

Student behavior was coded during each 15 second interval for each of three target students. The eight categories that describe student behavior were classified as student engaged or student non-engaged behaviors. Non-engaged behavior included the categories On-task, Off-task, Cognitive, Interim, and Wait (Siedentop, Tousignant, & Parker, 1982). A student who was engaged was either coded as Motor Appropriate, Motor Inappropriate, or Motor Supporting. Motor Appropriate is ALT-PE(M). Data for student engagement and non-engagement as well as ALT-PE(M) for each target student are presented by teacher and by subject matter. Figure 13 presents Task Engagement for all target students during the study.

**Student Task Engagement - Teacher A**

After five days of baseline data collection, the mean rate for student engaged time was 37.4 percent for student one, 44.2 percent for student two, and 42 percent for student three (see Table 11). This was a relatively high rate of student involvement with the subject matter when compared with other ALT-PE studies (Metzler, 1979; McLeish, 1982; Pieron, 1981) and when compared to Teacher B and C's target students (see Figure 13).

**Intervention - Conference one.** No effort was made to intervene directly on student engagement rates during the first conference. The teacher was presented with the data
for student engagement and ALT-PE(M) and complimented on her students' high rate of engagement. She was encouraged to maintain this task involvement but no suggestions or discussion were pursued as to how that involvement might be maintained. During observation of the five lessons after the initial conference, Student Engagement rates decreased for all three target students from an 11.8 percent decrease for student one (44.2 to 26.5), a 17.7 percent decrease for student two (44.2 to 26.5), and a 15 percent decrease for student three (42 to 27).

**Conference two.** During the second conference, these data were presented to the teacher. Ways to improve student engagement were suggested. The design of the playground unit was to be accomplished with this in mind. Having students practice in small groups was suggested and an organizational pattern to manage such student diversity was designed. The data for the five lessons observed after this intervention show mixed results (see Appendix H). Student one showed an increase from 25.6 percent to 27 percent, while students two and three decreased from 26.5 to 24 percent and from 27 to 24.8 percent, respectively. The reader ought to be reminded that the last two observations were done on different students (see Table 11). This was because the fourth graders schedule had been switched. They had Physical Education during the fifth grade period. The fifth graders did not have any Physical Education for these weeks.
Figure 13. Task Engagement for Target Students Across Time
<table>
<thead>
<tr>
<th>Experimental Phases</th>
<th>Student 1</th>
<th>Student 2</th>
<th>Student 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-Engaged</td>
<td>Engaged</td>
<td>Non-Engaged</td>
</tr>
<tr>
<td>Baseline</td>
<td>37.4</td>
<td>62.6</td>
<td>44.2</td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conference One</td>
<td>25.6</td>
<td>74.4</td>
<td>26.5</td>
</tr>
<tr>
<td>Conference Two</td>
<td>27.0</td>
<td>73.0</td>
<td>24.0</td>
</tr>
</tbody>
</table>
ALT-PE(M). Academic Learning Time [ALT-PE(M)] is the amount of student motor engaged time at an easy level of difficulty. This percentage was calculated by the frequency of MA (see definition p.73) coded for a target student divided by the total number of intervals coded for that student. Over five baseline observations, target student one had a mean of 35 percent ALT-PE(M) per lesson. This dropped to a mean of 18 percent after the first conference and increased to a mean of 25.2 percent per lesson after the second conference.

Student two displayed a similar trend in ALT-PE(M). It dropped from a baseline mean of 42.4 percent to 18.3 percent for conference one and increased slightly to a mean per lesson after the second conference of 20.4 percent.

Student three had a slightly different pattern of behavior. His ALT-PE(M) time in baseline of 40.5 decreased to 23 percent in the lessons observed after the first conference to an average of 22.8 for the last five observations (see Figure 13).

Table 12

<table>
<thead>
<tr>
<th>Subject</th>
<th>Baseline</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Conference one</td>
</tr>
<tr>
<td>Student 1</td>
<td>35.0</td>
<td>18.0</td>
</tr>
<tr>
<td>Student 2</td>
<td>42.4</td>
<td>18.3</td>
</tr>
<tr>
<td>Student 3</td>
<td>40.5</td>
<td>23.0</td>
</tr>
</tbody>
</table>
The mean student engagement rate per lesson in baseline ranged from 15.8 percent for target student three to 21 percent for student two, and 21.1 percent for student one (see Table 13).

These student Engagement and ALT-PE(M) rates were the lowest rates observed for all target students across all teachers during baselines (see Figure 13).

Conference one. The focus of the first conference was to present Teacher B with the data for student involvement. Two objectives were set for the teacher in her subsequent lessons. The first was to increase the time allotment to Activity episodes and, secondly, to increase the students' opportunities to respond to the assigned tasks by placing students in smaller groups and using extra equipment that was available.

The data collected on student Engagement rates for the five lessons after this conference showed a further mean decrease in student involvement in the assigned tasks (see Figure 13). Task Engagement dropped to a mean rate of 12.0, 14.4, and 14.5 percent per lesson (see Table 13).

Conference two. These data were presented to the teacher at the second conference. The researcher considered these data to warrant further attention by the teacher. The researcher, in cooperation with the teacher, designed specific drill situations for the tennis unit that would allow for greater student opportunity to hit the ball and allow for greater success rates. Resources in the form of "drill books" and ideas for modifying the game of tennis were provided. The teacher was asked to develop detailed lesson plans for the next three lessons and to provide a copy for
the researcher. Two were later presented to the researcher on a subsequent visit to the school.

The data collected during the subsequent six lessons showed an increase in task Engagement rates and ALT-PE(M) for all three target students. Task Engagement rates rose to a mean of 15, 15.8, and 18 percent per lesson. It ought to be remembered that these scores are still lower than the initial baseline data.

Conference three. Due to a death in the family, Teacher B was absent from school for six school days. The last conference was delayed to very close to the end of the school year. The teacher had been video-taped during a Track and Field unit but was in a Softball unit when the final conference was held. In fact, only one school day was all that remained of the Softball unit.

The data for student Engagement and ALT-PE(M) were presented to the teacher. Excerpts from the video-tape were viewed and used to develop possible strategies to further increase student involvement with the assigned tasks and to decrease Transition times.

Because it was close to the end of the school year, only three observations were made after this final conference. The objective for the teacher was to try and continue to increase the time allotted to Activity episodes and the students' opportunities to engage successfully in the assigned tasks (see Figure 13).

The final observations were made on one Softball lesson and two lessons of a four day Frisbee Golf unit. The student Engagement rates dropped again to a mean of 14.3, 9.0, and 17.3 for students three, two, and one, respectively.
<table>
<thead>
<tr>
<th>Experimental Phases</th>
<th>Student 1 (Engaged)</th>
<th>Student 1 (Non-Engaged)</th>
<th>Student 2 (Engaged)</th>
<th>Student 2 (Non-Engaged)</th>
<th>Student 3 (Engaged)</th>
<th>Student 3 (Non-Engaged)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>21.1</td>
<td>78.9</td>
<td>21.0</td>
<td>79.0</td>
<td>15.8</td>
<td>84.2</td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conference One</td>
<td>14.5</td>
<td>85.5</td>
<td>14.4</td>
<td>85.6</td>
<td>12.0</td>
<td>88.0</td>
</tr>
<tr>
<td>Conference Two</td>
<td>18.0</td>
<td>82.0</td>
<td>15.8</td>
<td>84.2</td>
<td>15.0</td>
<td>85.0</td>
</tr>
<tr>
<td>Conference Three</td>
<td>17.3</td>
<td>82.7</td>
<td>9.0</td>
<td>91.0</td>
<td>14.3</td>
<td>85.7</td>
</tr>
</tbody>
</table>
ALT-PE(M)

The percentage of time Teacher B's students spent engaged in motor activity at an easy level of difficulty was the lowest of all target students during baseline observations. ALT-PE(M) ranged from a mean of 8.8 percent to 13.1 to 14.8 percent for target students three, two and one, respectively. It was decided that this problem ought to be the focus of the first conference. The post-conference one data showed students ALT-PE(M) had dropped to a mean rate of 8.2, 10.8, and 13.3 percent per lesson for students three, two, and one, respectively.

After providing the specific suggestions and material resources to the teacher during conference two for her tennis unit, ALT-PE(M) increased to a mean of 11, 14.2, and 17.3 percent per lesson for students three, two, and one, respectively.

The ALT-PE(M) rates show mixed results after conference three. Student three had her highest ALT-PE(M) (29 percent) for all 19 observations in the study (lesson 20). The mean ALT-PE(M) time for student two was the lowest of all four phases in which she was observed. In the last lesson, she spent only 4 percent of class time engaged in the subject matter. Student one showed a mean decrease of 1.3 per lesson to a mean of 16 percent for the final phase of the study.

The highest Engagement and ALT-PE(M) rates for all three students in the final phase came in the Softball lesson. Never in the study did the teacher regain the student ALT-PE(M) rates observed in baseline. Second, while time allotted to Activity may have decreased during observations, target students one and three increased their ALT-PE(M) from baseline to the final phase of the study (see Table 14).
Table 14

Mean Percentage of ALT-PE(M) for Teacher B's Target Students

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Baseline</th>
<th>Conference one</th>
<th>Conference two</th>
<th>Conference three</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student 1</td>
<td>14.8</td>
<td>13.3</td>
<td>17.3</td>
<td>16.0</td>
</tr>
<tr>
<td>Student 2</td>
<td>13.1</td>
<td>10.8</td>
<td>14.2</td>
<td>7.0</td>
</tr>
<tr>
<td>Student 3</td>
<td>8.8</td>
<td>8.2</td>
<td>11.0</td>
<td>14.0</td>
</tr>
</tbody>
</table>
Student Task Engagement - Teacher C

Baseline data were collected for each target student every 15 seconds while observing a lesson. The graphed data were presented to the teacher and examples of each category were provided. The mean percent of student Engaged time during the baseline phase was 33.6, 30.7, 29.7 percent for target students one, two, and three, respectively. The mean percentage of ALT-PE(M) per lesson for the target students was 29, 22.8, and 21 percent for one, two, and three, respectively.

Conference one. Other than presenting the data to the teacher at the initial conference, no value judgments were made about the quantity of student engaged time that had accrued to the target students and no discussion was pursued about how these rates might be maintained or improved upon.

After the first conference, student behavior was observed and coded for ten lessons before a second conference was held. A new target student was used halfway through this phase as student one opted for a unit that Teacher C did not teach. As the target students had been chosen as representatives of the class, the data for both the old and new target students were added together in this phase.

Conference two. The decrease in student Engaged time by eight, ten, and two percent for students one, two, and three, respectively, was graphically presented to the teacher and it was suggested that the teacher use a prompting strategy with the group to maintain student involvement with the subject matter, as she continued to provide feedback to individual students. Although prompting increased from a mean rate of 4.5 to 9.9 per ten minutes (see Table 6), Task Engagement continued to decrease to a mean of 21.5, 15.8, and 14.3 percent per lesson for target students one, two,
Conference three. Task Engagement and ALT-PE(M) were made the foci of the third and final conference. The teacher viewed a video-taped lesson that she had taught to the class under observation the previous week. Various strategies were discussed to try and increase task involvement over the final five observations. Task Engagement for two target students increased from pre-conference three means per lesson of 15.8 percent and 14.3 percent to 19 percent and 20.4 percent for students two and three, respectively. Student one showed a slight decrease from 21.5 to a mean of 20.2 percent per lesson.

During the third conference, it was planned that, on specific days, the teacher would spend some extra time with each of the target students trying to increase their task involvement and their skill proficiency. During Lesson 29, the teacher was to pay close attention to target student number one. The data show a 7 percent increase in Engaged time during this lesson (see Figure 13). A similar increase was recorded the next day. ALT-PE(M), which was recorded at its lowest point in the study during Lesson 28, (7 percent of class time) increased to 15 percent and 32 percent of class time during Lessons 29 and 30 (see Figure 16).

Student number two was to be attended to by the teacher during Lesson 26. His Task Engagement and ALT-PE(M) were 28 percent and 18 percent, respectively, for the lesson. While these scores were higher than the means for Task Engagement and ALT-PE(M) during pre-conference three observations, they were not the beginning of an upward trend in his involvement with the subject matter (see Figure 16).

When the teacher spent time with student three, the students task involvement dropped to its second lowest observed
time. The student spent her time listening to and/or speaking with the teacher rather than performing the assigned motor skill.

**ALT-PE(M)**

The ALT-PE(M) data for the target students shows a consistent decline from baseline to the end of the study. The mean ALT-PE(M) for the three students in baseline was 24.3 percent. It dropped to 22.2, 16.2, and 12.3 percents during each of the three remaining experimental phases. Only student three showed any increase in ALT-PE(M) during the study. This was from the baseline phase to post-conference one phase.
Table 15

Mean Percentage of Engaged and Non-Engaged Time for Teacher C's Target Students

<table>
<thead>
<tr>
<th>Experimental Phases</th>
<th>Student 1</th>
<th></th>
<th>Student 2</th>
<th></th>
<th>Student 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Engaged</td>
<td>Non-Engaged</td>
<td>Engaged</td>
<td>Non-Engaged</td>
<td>Engaged</td>
<td>Non-Engaged</td>
</tr>
<tr>
<td>Baseline</td>
<td>33.6</td>
<td>66.4</td>
<td>30.7</td>
<td>69.3</td>
<td>29.7</td>
<td>70.3</td>
</tr>
<tr>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conference One</td>
<td>25.4</td>
<td>74.6</td>
<td>20.2</td>
<td>79.8</td>
<td>27.7</td>
<td>72.3</td>
</tr>
<tr>
<td>Conference Two</td>
<td>21.5</td>
<td>78.5</td>
<td>15.8</td>
<td>84.2</td>
<td>14.3</td>
<td>85.7</td>
</tr>
<tr>
<td>Conference Three</td>
<td>20.2</td>
<td>79.8</td>
<td>19.0</td>
<td>81.0</td>
<td>20.4</td>
<td>79.6</td>
</tr>
</tbody>
</table>
Table 16

Mean Percentage of ALT-PE(M) for Teacher C's Target Students

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Base-line</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Conference one</td>
<td>Conference two</td>
</tr>
<tr>
<td>Student 1</td>
<td>29.0</td>
<td>23.2</td>
</tr>
<tr>
<td>Student 2</td>
<td>22.8</td>
<td>18.1</td>
</tr>
<tr>
<td>Student 3</td>
<td>21.0</td>
<td>25.3</td>
</tr>
<tr>
<td>Grand Mean</td>
<td>24.3</td>
<td>22.2</td>
</tr>
</tbody>
</table>
Discussion on Class Context and Student Engaged Data

A question addressed by this study was whether the intervention could significantly increase the ALT-PE(M) time of the nine target students observed in the physical education classes of Teachers A, B, and C. Task involvement and ALT-PE(M) were a function of several factors but specifically the amount of time devoted to Activity during a physical education lesson. It cannot be assumed that the greater the allocated time to the subject matter, the greater the time students are involved in the subject matter. Evidence from previous studies (Metzler, 1979; Birdwell, 1979) suggested the problem in physical education lay not so much in the allocation of time to physical activity within a lesson, but in designing lessons to ensure maximum participation in the subject matter during Activity time.

The intervention had no significant effect on the Task Engagement and ALT-PE(M) time of students during the study. If ALT-PE(M) behavior is examined for each of the nine target students (see Figure 14, 15, and 16), changes in motor responding are a function of the activity the students engaged in and not the intervention. This finding was also reported by Whaley (1980). Showing teachers the data and expecting them to design lessons to improve the participation level of their students was not an effective change strategy on its own. It is interesting to note that after the second conference with Teacher B, where specific content and behavior management strategies for the subsequent tennis lessons were designed with the help of the researcher, student motor responding increased significantly in the remaining tennis lessons (see Figure 15). Both Task Engagement and ALT-PE(M) dropped when the teacher began a new unit of activity (Track and Field). Generalizability of the principle was expected rather than planned. It did not occur. When working with
teachers in the setting, it may be necessary to supply them with subject matter content and other necessary aids to teach a unit of activity. Providing items such as the content outline, record sheets, measuring procedures, etc. ensures little or no response cost to the teacher. It is unrealistic to expect teachers to spend the time doing this time-consuming work without some strong reward structure that is seldom in the control of supervisors.

The teachers in this study did not have to spend extra time outside of class periods preparing to alter their verbal patterns of behavior. This may explain why the intervention was more successful in modifying this set of behaviors and not the others.

The similarity of student responding within intact classes was a distinctive characteristic of the ALT-PE(M) and Task Engagement data in this study. Regardless of skill level, all students within a class recorded almost identical patterns of responding. These patterns of student response are similar to earlier findings by Whaley (1980).

Comparisons between teachers on the mean percentage of class time devoted to activity episodes showed some distinct contrasts. The elementary school teacher (Teacher A) spent almost half of the class time in Cognitive or Managerial episodes (see Table 17). The middle school teacher (Teacher B) had the highest percentage of class time allocated to Activity. What seemed most interesting was the elementary teacher had higher levels of student involvement in the subject matter than the other two teachers during the entire study. Teacher B, in contrast, had the lowest student involvement in the subject of all teachers throughout the study. Teacher C never regained the amount of student involvement that students had while her students were in
Figure 14. ALT-PE(M) for Teacher A's Target Students
Figure 15. ALT-PE(M) for Teacher B's Target Students

A: Gymnastics  D: Matball  G: Softball
B: Whiffle Ball  E: Tennis  H: Frisbee Golf
C: Flag Football  F: Track & Field
Figure 16. ALT-PE(M) for Teacher C's Target Students
Table 17

Relationship Between the Mean Percentage of Activity Time and the Mean Percentage of Student Engaged Time per Experimental Phase

<table>
<thead>
<tr>
<th>Teacher A Experimental Phases</th>
<th>Teacher B Experimental Phases</th>
<th>Teacher C Experimental Phases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1    2    3</td>
<td>1    2    3    4</td>
<td>1    2    3    4</td>
</tr>
<tr>
<td>Percent of Activity Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>48    54    58</td>
<td>74    57    49    70</td>
<td>62    56    50    61</td>
</tr>
<tr>
<td>Stud. Eng. Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student 1 37 26 27</td>
<td>Student 2 44 27 24</td>
<td>Student 3 42 27 25</td>
</tr>
<tr>
<td></td>
<td>21 15 18 17</td>
<td>16 12 15 14</td>
</tr>
<tr>
<td></td>
<td>34 25 22 20</td>
<td>30 28 14 20</td>
</tr>
<tr>
<td></td>
<td>21 14 16 9</td>
<td>31 20 16 19</td>
</tr>
<tr>
<td></td>
<td>44 27 24</td>
<td>42 27 25</td>
</tr>
</tbody>
</table>
Badminton. Swimming and Tennis had significantly lower student ALT-PE(M) scores.

The Behavioral Supervision Model as an Intervention Model

The purpose of the study was to improve the teaching effectiveness of the three experienced teachers. Effectiveness was defined as the teachers' ability to put students in contact with the subject matter during lessons and keep them in contact with it for as long as possible (Medley, 1979). Task involvement was to be maintained within a classroom climate characterized by positive feedback for general student behavior. Finally, student engagement was considered most beneficial when teachers focused on student skill responding and provided frequent prompting of and academic feedback for student skill attempts.

A decision about which teaching skills to intervene upon initially was made after baseline data were collected. From an analysis of the baseline data, the weakest teaching skill was chosen as the initial focus of remediation. In this study, teacher verbal behavior was considered to warrant initial attention for Teachers A and C. Student Involvement rates were the initial focus for Teacher B's conference.

While the intervention package had some success in modifying teacher verbal interaction to be more positive and more academically focused, it was not successful in modifying teacher and student behavior and increasing the allocation of class time to Activity or increasing student involvement in the subject matter. In fact, if the data for ALT-PE(M) are examined closely, the changes in the patterns of students engagement during the study seemed more a function of the physical activity being taught by the teacher than the intervention.
A major issue that was ignored by the researcher at the outset of the study was the lack of control the researcher (acting as a supervisor) had over the subjects in the study. The subjects volunteered to take this field experience course. The Pass/Non-Pass evaluation was awarded more on their willingness to participate in the study and to be observed while teaching than to demonstrate improvements in their teaching skills on the basis of the data collected. Failure to improve before the next conference was not liable to sanction by the researcher or by the teacher's principal. This lack of a formal accountability system for the teacher's improvement is perhaps a fundamental reason for the inability of the researcher to provide consistent improvement in the teachers behavior. It resulted in little systematic effort outside of class time to try and improve their effectiveness. One teacher had the support and interest of her principal during the study. Participation rather than improvement was the criterion of success in this case. It seems the contingencies surrounding the three teachers participation in the study were very similar to those described by Tousignant (1982) when she described "dressing up, standing up, and shutting up" as the prerequisites for most students in physical education classes to be considered "class members in good standing."

With such a weak accountability system operating, a supervisor needs to provide the inservice teacher with the complete package of materials needed to teach the unit, if that is the objective. The tasks the supervisor sets an inservice teacher must be matched to that teacher's skill level. If a teacher has poor managerial skills, then this is where the supervisor and the inservice teacher must begin.

It is also naive to expect teachers to plan and design educational experiences that are demanding of their time
Beyond their regular school day. Teaching a minimum of six lessons a day leaves a teacher with precious little time to plan. The lower the response cost of the intervention package to the teacher, in terms of both time needed to plan and the managerial skills needed to implement it, the greater the probability the intervention will be a success. Too much planning of lessons and organization of the environment was left to the inservice teachers in this study. Without the formal accountability to reward or consequate their efforts, the intervention failed.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

There is an urgent need to develop effective inservice programs that result in more effective physical education teaching. The loss of Physical Education from our schools is closer to becoming a reality now than ever before. It is difficult now, and will continue to become more so, to justify the existence of poor quality physical education programs in our schools, let alone to convince administrators to increase personal and resource commitments to existing programs.

One way to begin this renewal of Physical Education is to hold greater expectations of those who teach and learn in the gymnasium. Unless principals and parents have high expectations of the program, it is difficult for teachers and, ultimately, the students themselves to aspire to objectives seldom valued or even understood by the school administration and/or society.

Inservice education in physical education has to begin a two-pronged attack toward the improvement of Physical Education in our schools. It has to convince administrators and, specifically, principals of the importance of quality physical education programs in schools and that such programs will be established and maintained if principals hold their teaching staff answerable for what they do in the gymnasium and accountable for the outcomes of their programs. It is
in the context of such expectations that inservice will be most effective. The successful completion of inservice programs ought to center around the demonstration of significant improvement of teaching and such success ought to be recognized by the administration as a worthwhile endeavor.

Summary of Study

The main purpose of this study was to improve the effectiveness of three experienced physical education teachers by:

a) Providing them with systematically collected data on their teaching behavior that was the specific focus of teacher behavior change and by

b) Holding a series of researcher-teacher conferences during which targets for teacher and/or student behavior were set and suggestions and strategies discussed, regarding how these goals might be attained in subsequent lessons.

The specific questions to be answered in the study were:

1. Can teacher verbal interaction patterns be modified to provide an increased focus on student skill responding?

2. Can teacher verbal interaction patterns be modified to provide a more positive learning environment by increasing teacher praise and positive feedback to students while decreasing the frequency of desist behaviors?

3. Can teacher planning and the organization and management of classroom events be improved through a series
of conferences to increase the percentage of class time allocated to activity?

4. Can the proposed intervention package increase student Task Engagement and ALT-PE(M) during Physical Education lessons?

The literature review for this study involved a review of the educational supervision literature, the behavior analysis literature, and the teacher effectiveness literature. The educational supervision literature was reviewed to ascertain what supervision models, if any, had been successful in modifying teachers' behavior and in improving the teaching effectiveness of experienced teachers. The teacher effectiveness literature was reviewed to determine which process variables discriminated consistently between effective and ineffective teachers. These key variables were then used as the focus for direct observations of the teaching-learning process. The applied behavior analysis literature was reviewed to determine what technology, if any, existed that might be most effective in demonstrating significant behavior change in the teacher and student process variables chosen as the focus of the study.

The major outcome of the supervision review was finding that little empirical data have been collected to determine the direct impact of various supervisory procedures on teaching behavior in the work setting. On the contrary, most of the literature on the topic reflected "the accumulated wisdom" of the leading pedagogues in the field (Nash & Ducharme, 1983:34) and was non-empirically based.

Several key variables were identified from the review of research on teaching that have consistently discriminated between more and less effective teachers. Process variables, the allocation of time to the subject matter, teacher
academic feedback, teacher behavioral interactions, student engagement with the subject matter, and student engagement at an easy difficulty level were the variables chosen from this review to be the focus of the systematic observation of teacher behavior in this study and were the targets for teacher behavior change.

The methodology chosen to improve the teaching skills of the experienced teachers, and, ultimately, to improve student learning, was to systematically collect data of the teaching-learning process during the teachers' physical education classes. Target students were observed during the lessons and their behavior, together with the teacher and class behavior, were recorded and later analyzed. On the basis of these data, feedback was provided to the teacher in a series of conferences. During these conferences, specific strengths and/or weaknesses of the teachers teaching were discussed, strategies to improve specific teacher and/or student behavior were examined, and targets were set for teacher behavior change that was to be attained in the subsequent lessons.

Conclusions

The specific conclusions drawn from this research project are discussed below in relation to each of the research questions posed in the initial chapter.

Question 1. Can teacher verbal interaction patterns be modified to provide an increased focus on student skill responding?

Baseline data on the frequency of academic feedback was distinctly different for Teacher B than for either Teacher A or Teacher C. Teacher B had significantly higher rates of
skill feedback. Baseline data were variable and the researcher had little control of Teacher B's pattern of verbal behavior.

The verbal interaction patterns of Teachers A and C were modified to bring about an increased focus on student skill responding. In both cases, corrective feedback became a dominant verbal behavior when interacting with students. Positive skill feedback did increase but not to the same extent. It was concluded that awareness of verbal interaction patterns and setting targets to improve the skill focus of those verbal interaction patterns significantly increased the academic feedback rates of Teachers A and C. No such control was exerted over Teacher B. However, verbal interaction patterns were only an indirect focus of the supervision process with Teacher B.

While academic feedback increased significantly when it was a direct focus of the supervisory conferences for Teachers A and C, the issue of cost effectiveness must be considered. Given the amount of time (2 to 2½ hours per week) spent with each teacher over a ten week period in comparison to the amount of control exerted over their behavior, the cost effectiveness of such a procedure is indeed questionable. A more effective way of providing similar if not better results warrants investigation. It seems having the teacher audio-tape themselves on a regular basis, coding their own behavior and bringing such data to a conference with a supervisor and/or other teachers is an alternative strategy worthy of serious investigation. Secondly, the use of the principal as a data collector may not only be less costly, but have additional benefits as the principal becomes more familiar with what goes on in the gymnasium. The role of the principal in future inservice research will be discussed later in the chapter.
Question 2. Can teacher verbal interaction patterns be modified to provide a more positive learning environment by increasing teacher praise and positive feedback to students while decreasing the frequency of desist behaviors?

The results to this question were mixed. Desisting behaviors across all three teachers decreased and maintained low rates of occurrence during post baseline classes. The slope of the desist lines on all three graphs for teacher verbal interaction (See Figures 5, 6, and 7) show a leveling off of desist behavior after baseline and conference one for all teachers. This was most evident for Teacher A.

A series of conferences which involved discussion of the frequency of teacher praise for general student behavior were not successful in increasing this verbal behavior. The most consistent finding for the study was the physical education teachers demonstrated very little recognition of appropriate general behavior either before or after the intervention.

The increased skill focus of teacher feedback resulted in an almost two to one ratio of corrective to positive statements made to students regarding their skill responses. The teachers seemed to find it easier to tell students what was wrong with what they did rather than what they were doing right. The fact that positive skill feedback did increase and praise did not suggests that while teachers are willing to provide students with positive comments for skill performance and effort in motor activity, they expect students to behave appropriately during class and to do so without receiving recognition for such behavior. Whether this assumption is true and what effect, if any, a changed pattern of verbal interaction would have on student behavior is worthy of further investigation.
Question 3. Can teacher planning and the organization and management of classroom events be improved through a series of conferences to increase the percentage of class time allocated to activity?

The data show that the intervention used in this study had little effect in increasing the allocation of class time to motor activity during physical education lessons. In fact, allocation of activity time for Teacher C decreased consistently from baseline to the end of the study. The specific reason for this decline cannot be determined from the data. It was, perhaps, due to an "intervention" much more powerful than the intervention designed by the researcher. The type of activity taught seemed to have a direct influence on the motor activity time per lesson. Research has indicated clearly that certain activities, as they are normally taught, produce higher student engagement (aerobic dance, volleyball) than do others (gymnastics, track and field) which tend to produce low rates of student engagement. The complexity of the managerial and safety requirements associated with an activity such as gymnastics, requires that teachers pay greater attention to arranging the learning environment to ensure higher student engagement.

Variability in the percentage of time devoted to activity was obvious across teachers. The managerial skills of the respective teachers and the self-management skills of their students could account for much of this variability. Whether the class was held outside or inside also effected the amount of class time devoted to activity. Teacher A had the class brought to her as a group by their regular classroom teacher. Teachers B and C had to deal with changing procedures. Dressing time for Swimming was almost double the time for other physical education classes. Teacher B frequently had to wait for the boys in her class to come
from their locker room. How quickly these students arrived to her class depended on how efficiently the male physical education teacher completed attendance. Several minutes were wasted many times as the teacher waited to provide instruction to both boys and girls before they went out to play.

Planning a specific series of lessons with a teacher during a conference did help to increase time allocated for activity (see Appendix E for data on Teacher B) during subsequent lessons. There was no maintenance of such behavior nor was there any generalization of the principle of maximizing student opportunity to respond in the preparation of other subject matter.

Question 4. Can the proposed intervention package increase student Task Engagement and ALT-PE(M) during Physical Education lessons?

One of the main conclusions to be drawn from the data on Task Engagement and ALT-PE(M) is that students within classes showed remarkably similar patterns of behavior. The skill level of the students did not affect, in any significant way, the response pattern of the students.

The variability within student ALT-PE(M) during the study seemed a function of the activity being taught or the part of the unit of instruction being observed. The beginning and end of units tended to have less time devoted to student engagement as teachers spent time in the early lessons involved in managerial chores and students spent time in cognitive evaluation of unit objectives during later lessons.

It must be concluded that the supervision package used to increase the teaching effectiveness of these experienced
teachers had only partial success in improving certain teacher behaviors and little effect in increasing or main­
taining the amount of student Task Engagement and student ALT-PE(M) during their physical education lessons.

The failure of the intervention to improve the effective­ness of the experienced physical educators observed during this study was in sharp contrast to the significant changes observed in the student teaching behavior of preservice teachers during a series of supervision studies at The Ohio State University (Siedentop, 1981). The supervision "package" was similar for both the inservice and preservice teachers (systematic observation of teaching behavior in the work setting, goal setting and feedback based upon data collected from observations of teaching, and the provision of managerial and instructional strategies to modify the target behaviors). The differences in the research findings from preservice to inservice teachers may be explained with refer­ence to a contingency model of behavior (adapted from Moxley, 1982) which explains how contingencies of reinforcement con­trol the behavior of the individual.

Two major assumptions of operant psychology, upon which this model is based, are: 1) Behavior is controlled by the consequences, 2) Individuals behave to gain pleasant conse­quences or to avoid unpleasant consequences. Consequences can be natural and/or assigned (Alexander, 1982, from Skinner, 1982). Assigned consequences are contrived contin­gencies of reinforcement. When a desired behavior is emitted upon a specific stimulus or set of stimuli, it is followed by a reinforcing stimulus. Natural consequences refer to the naturally occurring stimuli following the emittance of a specific behavior. Consequences for behavior must be viewed as more than specific behaviors that follow immediately upon the emittance of a behavior. Moxley (1982) has argued that the environment in which and with which we interact is
changed by those very interactions and so the antecedents (the environmental stimuli) are thereby changed. Using the framework of the contingency model, the problem of modifying the behavior of experienced physical educators can best be explained. The different findings of the pre- and inservice studies can be explained within this framework in terms of the differences in the antecedents (the occasion upon which response occurs) and consequences (natural and assigned) operating upon the preservice and inservice teachers (see Figure 17).

The following section provides possible reasons why the inservice program provided to the teachers during this study was not as successful as anticipated in modifying the teaching behavior of experienced physical educators. Some conclusions are drawn from the literature on school and curriculum innovation which discussed several obstacles to school change and curriculum innovation. The alternative explanations suggested do not follow in any order of priority but are discussed as they apply to one of the three components of the contingency model of behavior: antecedents, behaviors, and consequences.

**Antecedents**

The antecedent stimuli have been classified as indirect antecedents (the contextual setting or environment within which the teacher worked) and direct antecedents (the content and process of the inservice supervision program).

**Contextual setting.** Working with a teacher to increase their effectiveness cannot be done in a vacuum. Perhaps one of the most consistent findings of the innovation literature has been that staff development programs must consider the operating procedures of the organization (school) and the expectations and demands made by the outside environment if
## Antecedents

<table>
<thead>
<tr>
<th>Indirect (Contextual Setting)</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Climate</td>
</tr>
<tr>
<td>School Resources</td>
</tr>
<tr>
<td>- temporal</td>
</tr>
<tr>
<td>- material</td>
</tr>
<tr>
<td>- spatial</td>
</tr>
<tr>
<td>Teachers previous history</td>
</tr>
<tr>
<td>Answerability focus</td>
</tr>
<tr>
<td>Accountability focus</td>
</tr>
</tbody>
</table>

## Behaviors

<table>
<thead>
<tr>
<th>Direct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific teacher, student and class behaviors as observed in the gymnasium - e.g.</td>
</tr>
<tr>
<td>Feedback on target behaviors</td>
</tr>
</tbody>
</table>

## Consequences

<table>
<thead>
<tr>
<th>Natural Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>- response cost to teachers</td>
</tr>
<tr>
<td>- student reaction</td>
</tr>
<tr>
<td>- accountability - performance trade-off</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assigned Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td>- report on progress of modification of target behaviors</td>
</tr>
<tr>
<td>- grade for the course</td>
</tr>
<tr>
<td>- observation of teaching behavior</td>
</tr>
</tbody>
</table>

---

Figure 17. A contingency model of inservice teaching behavior (from Moxley, 1982 and Alexander, 1982).
they are to succeed. Provision of administrative support in the form of human, temporal or spatial resources increases the likelihood that the goals of an inservice program may be attained. Incentives such as extra planning time, a decrease in the student-teacher ratio while a new program is implemented are examples of such support structures. For this to be most effective, inservice programs may be more effective if done with groups of teachers at a school or within a school district rather than working with individual teachers. There was little involvement by the researcher with the school administration during this study (Teacher A's principal was present at a conference). The single unit of support was the researcher, an all too infrequent presence in the schools. This situation ought to be contrasted with the continuing source of support provided by the student teacher's supervisor, peers, and particularly the cooperating teacher during their teaching practicum.

Inservice teachers (in contrast to most preservice teachers) have already established a specific pattern of teaching behavior, which has been shaped through their several years of teaching. They are members of the school environment rather than the college environment and will remain in that environment after the supervisor has left. Trying to change established patterns of behavior as distinct from establishing a routinized pattern of behavior (as with student teachers) is a more difficult and slower process. It may be analogous to the degree of difficulty encountered in trying to change a professional golfer's swing as compared to teaching a novice the same swing technique. Improvement in teaching behavior must be viewed as a long-term process that includes the establishment and maintenance of strategies of effective teaching.

A third difference in the contextual environment between the preservice and inservice teacher may be in the
expectations that are held for both by their college supervisor and principal, respectively. Frequently the goals of the supervision program and the expectations of the college supervisor and cooperating teacher are much more congruent than those of the principal. Such congruity in terms of stated goals and consequences for the achievement of those goals increases the likelihood that the student teacher will emit the desired teaching behaviors during the practicum. If a principal's concerns are managerial in focus (attendance books completed and returned, absentee and tardy slips distributed and recorded when appropriate, and maintenance of order and quietness from the gym) and instructional outcomes are neither expected nor valued, some other source of motivation is needed for teachers within that contextual environment to stimulate the improvement of their instructional effectiveness. Teacher B commented frequently during the initial interview and during the conference sessions on the lack of care the principal (a former physical educator) demonstrated in what happened in the physical education program. Teacher C, while not critical of her principal, commented during the initial interview that the only times she had contact with the principal was when there were problems as a result of a disciplinary measure imposed by the teacher or a complaint from a parent in relation to some aspect of the physical education program. In such an environment, it may be difficult to strive for objectives that are more instructionally effective, more demanding of the teachers energies, yet seldom valued by the school administration, parents, or students.

Supervision package. The actual presentation and implementation of the supervision program for both the pre- and inservice teachers was similar. The supervision program used with the preservice and inservice teachers may be a necessary though not a sufficient component in increasing teacher
effectiveness behavior. To understand the contrasting findings, one needs to look to other areas of the teachers environment.

Behaviors

In contrast to the preservice teachers, no significant modification in student behavior occurred when the supervision package was used with experienced physical educators. The effects of the supervision package on the inservice teachers' behavior have been presented and discussed in chapter 4 and summarized in an earlier section of this chapter.

Consequences

The difference in findings between the pre- and inservice teachers may also be explained in terms of the distinct differences in consequences that accrued to the two groups of teachers. These consequences may best be classified as assigned and natural consequences (Alexander, 1982).

Assigned consequences. Behavior is controlled by its consequences. The assigned or formal consequences in the studies with the preservice teachers were much more powerful than those for the inservice teachers. The student teaching practicum is a vital component in the preservice teachers undergraduate program. Success in student teaching, together with appropriate recommendations from both the university supervisor and the cooperating teacher are vital to the certification and ultimate employment of the student teacher within the teaching profession. No such powerful contingency existed while working with the inservice teachers. There were no direct consequences when the teacher failed to meet the appropriate targets of behavior established at earlier conferences. The grade (pass/non-pass) that the inservice teachers received did not have the same reinforcing value.
At worst, it was a waste of their time. All three teachers had tuition waivers from their respective school districts who, in turn, had received them from the university. The twice weekly teaching observations did not seem to set the scene for increased efforts at preparation, execution, or evaluation of the lesson. Student teachers perceive such observations differently and tend to prepare more diligently for them. The addition of an accountability system as a component of the supervision process may contribute to more effective control by the supervisor in modifying the in-service teachers behavior.

**Natural consequences.** Perhaps the most plausible reason for the insignificant results in improving the effectiveness of the experienced physical educators in this study were the natural consequences that resulted from the type of past behavior emitted by these teachers together with the natural consequences associated initially with changing that pattern of behavior. How students react in class is a natural form of consequation to teacher behavior. When students' behavior caused the teacher to become frustrated and/or have less control over her own teaching, such an aversive environment seemed to result in teacher modification of tasks, removal of the aversive student from the lesson, or a series of other solutions that alleviated the problem. The lack of serious disruptions during class seemed a powerful reinforcer in maintaining specific teacher behavior patterns. New targets for teacher behavior change, that initially necessitated increased managerial behaviors because of the need to develop a series of new expectations and routines for students, were often not attained. The response cost to the teachers seemed even more aversive than monitoring the existing environment even though they knew there were more instructionally effective ways to organize their lessons. Briefly stated: teachers tend to organize their lessons around managerial
concerns than instructional concerns and seemed reinforced when they were able to maintain that environment with a degree of cooperation from the class and few behavior disruptions.

From an examination of the task systems that operate within Physical Education classes, Tousignant (1982) concluded that teachers' main objective was to gain and maintain student cooperation during Physical Education lessons. The tasks for which students were held most directly accountable were such managerial tasks as showing up for class, dressing for participation, and being seen to make some effort to attempt the instructional tasks of the day. Tousignant (1982) found that teachers traded student accountability for instructional tasks in order to gain student cooperation during lessons. The goal of the inservice program reported here was to help teachers improve their teaching effectiveness. This necessitated that teachers hold students accountable for both the managerial and the instructional tasks of their Physical Education lessons. The inservice program demanded that teachers design and implement their instruction in a fundamentally different manner. Formal and informal accountability mechanisms needed to be arranged to ensure students attended to managerial and instructional tasks. The inservice supervision package designed to affect such significant teacher behavior change needed to be much more powerful than the supervision package employed in this study. If inservice education is to accomplish its goal, the improvement of the instructional processes of experienced teachers, ways to alter the "cooperation-accountability trade-off system" that operates between teachers and students in physical education classes need to be investigated. The continued existence and the improved quality of our school physical education programs may be dependent upon it.

Within the environments that the experienced teachers worked, the incentives for them to modify their behavior and
reach the targets set were, in hindsight, not powerful enough to overcome the response cost associated with designing instruction to create more student opportunity to respond, organizing the physical resources to set the occasion for these responses, and the managerial requirements necessary to maintain on-task behavior during lessons. The incentives being a grade (pass/non-pass), regular feedback on their progress, verbal reinforcement from the researcher, and, in the longer term, greater teacher satisfaction from the increased on-task behavior of students and increased student learning.

A possible intervention powerful enough to overcome several of the variables outlined above requires a radical approach to inservice education. Workshops, daily clinics and even feedback in one-on-one teacher-supervisor conferences have not provided and do not seem likely to provide a model that increases the instructional effectiveness of the nation's teachers. Inservice education must provide a framework and support system among peers and administrators that provides the appropriate motivating influences to improve the quality of life for both the teacher and the student. For good teaching to develop, we must provide appropriate contrived reinforcement until teachers are competent enough in their teaching to reap the benefits of their work in terms of a motivated and enthusiastic group of students interested and eager to learn during their classes.

Recommendations

If supervision research is to be the target of further experimental research, and such is highly recommended, procedures will need to be devised by which the teacher is held responsible for implementing the changes designed by the researcher. The role of the principal in any further research
in inservice education must be considered. This is perhaps one of the most important factors in gaining control over the contingencies that affect the conduct of any inservice program that attempts to bring about significant behavior change during the teaching-learning process. The effectiveness of inservice education with groups of teachers working together to achieve specific behavior change is an area worthy of further inquiry.

Future inservice education in physical education will be most effective in significantly affecting the behaviors of teachers when it is designed and implemented with the support of the school principal. The effectiveness of a supervisory program is primarily dependent upon the following three factors:

1. The frequency, consistency, and focus of the answerability and accountability systems (Halpin, 1979) that operate between; a) the principal and the teachers involved in the supervision program, b) the principal and the inservice personnel (supervisor), and c) the teacher and the inservice personnel.

2. The feasibility and practicality, as perceived by the inservice teacher, of the proposed modifications to their patterns of organization, management, and instructional design.

3. The ability of the proposed behavior changes to provide immediate reinforcement for the teacher. This helps develop a sense of credibility between teacher and supervisor and may help the supervisor later in attempting to modify the teacher's behavior pattern with
the weaker aspects of their teaching behavior.

The following hypotheses are suggested as possible questions to be pursued in the development of a greater understanding of effective inservice education that may eventually lead to a technology of effective inservice programming.

1. The greater the supervisor's control of the teacher's reinforcers, the more effective the supervision program will be in achieving its goals.

2. The lower the response cost to the teacher in changing teacher behavior, the greater the likelihood of maintaining teacher behavior change.

3. The more immediate the reinforcement for behavior change by the teacher, the greater the likelihood that the supervisor will be able to induce more complex behavior change patterns by the teacher later in the supervision program.

4. The greater the teacher perception of task relevancy to their teaching situation, the greater the effectiveness of the supervisor to induce change in the teacher's behavior.

5. The greater the consensus between the principal and the inservice personnel on the objectives of the supervision program, the greater the likelihood that the supervision program will achieve its objectives.

6. The more consistent the accountability system of the supervision program or the school administration, the closer the teacher's behavior will be to the demonstration of such effective behavior.
The purpose of the study was to examine the efficacy of a behavioral model of supervision directed toward the improved effectiveness of experienced physical education teachers (p. 6). Given the context and contingencies that prevailed in the teaching environment and the school setting, this supervision model did not work very well.

The model was concerned with holding teachers accountable for the instructional improvement of their teaching. Yet, all other accountability mechanisms operating in the school environment were concerned with those ancillary items that are only indirectly related to improving the quality of teaching and learning in schools. Principals tend to focus their interest on more organizational and managerial issues. Teachers themselves tend to hold their students accountable for attendance and participation rather than actual learning. Such accountability mechanisms tend to trade instructional effectiveness for managerial organization. Until a series of mechanisms are adopted that hold not only the teacher but the principal, students, and educational supervisor accountable for instructional objectives in schools, the likelihood is that schools will continue to provide an inferior standard of education for the nation's children.
APPENDIX A

BACKGROUND DATA FOR TEACHERS IN THE STUDY
Table 18

Background Data for Teachers in the Study

<table>
<thead>
<tr>
<th>Subject</th>
<th>Sex</th>
<th>Location</th>
<th>Grade</th>
<th>Class Sizes</th>
<th>Years of Exp.</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher A</td>
<td>F</td>
<td>Urban</td>
<td>10-11</td>
<td>24-28</td>
<td>7</td>
<td>Badminton, Swimming, Tennis</td>
</tr>
<tr>
<td>Teacher B</td>
<td>F</td>
<td>Urban</td>
<td>7-8</td>
<td>20-24</td>
<td>16</td>
<td>Gymnastics, Whiffle Ball, Flag Football, Mat Ball, Tennis, Track &amp; Field, Softball, Frisbee Golf</td>
</tr>
<tr>
<td>Teacher C</td>
<td>F</td>
<td>Urban</td>
<td>5</td>
<td>36</td>
<td>16</td>
<td>Square Dance, Mat Ball, Fitness Testing, Softball, Playground Games</td>
</tr>
</tbody>
</table>
APPENDIX B

INITIAL NOTIFICATION AND FOLLOW-UP FOR AN INSERVICE COURSE FOR PHYSICAL EDUCATION TEACHERS
ATTENTION PHYSICAL EDUCATION TEACHERS

IMPROVE YOUR TEACHING SKILLS
IN YOUR OWN SCHOOL
AND EARN GRADUATE CREDIT

You can now earn graduate or continuing education credit for improving your teaching skills in your own school. This staff development opportunity is available during the autumn and winter quarters. The procedures of the program are as follows:

1. An Ohio State Physical Education staff member will visit your school for a series of observations of your classes.
2. Based on the data collected, you and the Ohio State Physical Education staff member will develop a series of improvement targets.
3. The Ohio State Physical Education staff member will provide periodic observational checks throughout the quarter.
4. You will also collect some information as you teach your daily classes.
5. A series of observations will be conducted at the end of the quarter.
6. Course credit will be awarded for reaching the improvement targets.

If you are interested in taking advantage of this staff development opportunity, please contact:

Dr. Daryl Siedentop
242 Larkins Hall
The Ohio State University
Columbus, Ohio 43210
422-6736

IMPROVE YOUR MANAGEMENT SKILLS.
IMPROVE YOUR INSTRUCTIONAL SKILLS.
INCREASE MOTIVATION IN YOUR CLASSES.
HELP YOUR STUDENTS TO LEARN MORE IN LESS TIME.
IMPROVE YOUR INSTRUCTIONAL DESIGN SKILLS.

* * * * * * *
TO:  
FROM:  

Dear  

As promised earlier in the school year, we would contact you about a month after the Christmas vacation. If you recall, the Graduate School of the Ohio State University offered a Staff Development Course for inservice teachers in physical education.

Let us refresh your memory first. Were you to enroll in this course, this is what would be the major content of the course:

1. We visit your classes and collect data quite intensely during the initial weeks of the quarter, on the different teaching skills you employ.

2. In private conferences we will discuss the results of these data.

3. On the basis of the collected data we set targets for improvement of your skills. The level of improvement will reflect the final grade in the course.

4. You may be asked to read some related material (on which you will get quizzed).

At this point in time we are starting to prepare the course for next quarter, and one of the necessary bits of information obviously is the number of teachers that are willing to enroll. This information will help us make necessary adjustments in the course.
To make the necessary preparations for the next quarter, we will need some information. Please fill out the accompanying form and return it as soon as possible to Room 307 Pomerene Hall, School of HPER, 1760 Neil Avenue, Columbus, Ohio, 43210. If you have any questions, please do not hesitate to call us at (614) 422-8584.

Thanking you for your interest and hoping to hear from you soon, we sign,

Sincerely yours,

Daryl Siedentop, Professor
Mary O'Sullivan
Hans van der Mars
APPENDIX C

TRAINING MANUAL FOR
OBSERVATION SYSTEM
Introduction

This system is designed to provide specific information on five components of classroom life every fifteen seconds. These five components deal with class context, teacher role, teacher behavior, student behavior, and teacher-student interaction. The purpose of the system is threefold:

1. To describe reliably and validly how students and teachers spend their time in physical education classes.

2. To describe the frequency and quality of teacher interaction with their students in physical education classes.

3. To describe the degree to which teachers hold students responsible for the tasks they have been assigned while in the gymnasium.

To obtain all this information, it is necessary to team code in a live coding situation. This means the intervals of time can be shorter resulting in more precise and representative data for each behavioral component. One member of the team is responsible for coding the specific context within which student behavior occurs. They also code the precise nature of student involvement during the class. Each interval, three target students are coded as either engaged or not engaged within the instructional content of the day's lesson.

A second coder will focus specifically on the teacher for the entire lesson. The first decision involves a description of the immediate on-going role of the teacher during that interval. The observer then makes a decision as to which behavioral event best characterizes the behavior of the teacher for that interval. As these decisions are being
made, the second observer also tallies the frequency and quality of teacher verbal interaction with their students in terms of reaction to general non-skill behavior, feedback, and teacher prompting. This can be done live or tape recorded and coded later. The latter is recommended for a reliable description of teacher verbal interaction, especially during activity.

Categorical Definitions

The categories are listed in order of priority for each context level. What this implies is, if any two categories should last for the same duration of time within one interval, the behavior that is listed first in the manual (that has the lowest number) should be chosen as best characterizing that interval.

Observer One

Class Context Level:

The first level of decision making focuses on the class as a whole and is designed to describe the context within which student behavior occurs. There are two major subdivisions at the context level -- general content and subject matter content.

General Content: refers to class time when students are not intended to be involved in physical education activities.

Subject Matter Content: refers to class time where the focus is on physical education content, be it involvement in physical activity or knowledge related to how to do it.
Each of these two main subdivisions have categories which describe more specifically the nature of the setting within which individual behavior is occurring. The categories are defined as follows:

**General Content**

1. **Warm up (W)**
   - time devoted to routine execution of physical activities whose purpose is to prepare the individual to engage in further activity but which is not designed to alter the state of the individual on a long term basis.

2. **Evaluation (E)**
   - time devoted to formal testing of the students on the content of the physical education unit in progress at that time.

3. **Transition (T)**
   - time devoted to managerial and organizational activities related to instruction such as team selection, changing equipment, or time spent moving from one instructional setting to another.

4. **Management (M)**
   - time devoted to class business that is unrelated to instructional activity such as taking roll, discussing a field trip, or collecting money for a field trip.

**Subject Matter Content**

1. **Skill Practice (P)**
   - time devoted to practice of skill or chains of skill outside the applied context. The primary goal of such practice is skill development, such as bumping drills in volleyball or practice of a specific skill in gymnastics.
2. Scrimmage/Routine (S)

Time devoted to refinement of a specific skill or skills in an applied setting, during which there is frequent instruction and feedback to the participants... such as six against six in a full volleyball court. All the instructions are given during the scrimmage.

3. Modified Game (Mg)

Time devoted to activities that include some rules, sides, and winners, if necessary, but does not adhere to all or any of the rules of a major sport. The purpose of the activity is to practice the skills in an applied setting without all the rules and procedures of the full game situation.

4. Game (G)

Time devoted to the application of skills in a game situation where the participants compete without intervention from the teacher such as a complete balance beam routine or a full six against six volleyball game.

5. Fitness (F)

Time devoted to activities whose main purpose is to alter the physical state of the individual in terms of cardiovascular endurance, strength, and/or flexibility such as aerobic dance or distance running. They should be of sufficient intensity and duration to alter the physical state of the individual.

6. Instruction (I)

Time devoted to transmitting information concerning the content of physical education. This should include the main performance points, rules, and/or strategies of a sport's skill.
Student Involvement Level:

The second level of decision making focuses on the individual(s) and is designed to describe the nature of the learners involvement with the activity in a more specific way. There are two major subdivisions at this level...not engaged or engaged in the subject matter.

<table>
<thead>
<tr>
<th>Not Engaged</th>
<th>Engaged</th>
</tr>
</thead>
<tbody>
<tr>
<td>refers to the involvement of the student other than the involvement in motor activities concerning the subject matter of physical education for that specific lesson.</td>
<td>refers to motor involvement with subject matter oriented motor activities.</td>
</tr>
</tbody>
</table>

Engaged

1. Motor Appropriate (Ma) the student is engaged in subject matter motor activity in such a way as to produce a high degree of success.

2. Motor Supporting (Ms) the student is engaged in assisting other students learn the activity by feeding balls to the hitter, spotting a partner in gymnastics, or clapping a rhythm for students doing a movement pattern.

3. Motor Inappropriate (Mi) the student is engaged in a subject matter oriented motor activity but it is either too difficult or too easy for the individual's capabilities that practicing it would not contribute to the lesson's goals.
<table>
<thead>
<tr>
<th>Not Engaged</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Off-task (Of)</td>
<td>the student is engaged in an activity that they should not be engaged in such as disrupting the class, or talking when the teacher is explaining the practice (drill) for the day's lesson.</td>
</tr>
<tr>
<td>5. Cognitive (C)</td>
<td>the student is attentively involved with the subject matter of the lesson such as listening to the teacher outline the main performance points of the skill they are to work on for that day, filling out a task card, or watching a demonstration.</td>
</tr>
<tr>
<td>6. Interim (I)</td>
<td>the student is engaged in a non-instructional aspect of the activity such as retrieving the ball, changing sides of the volleyball court, or, after a play, a student moves to take up the appropriate position on the court.</td>
</tr>
<tr>
<td>7. On-task (On)</td>
<td>the student is appropriately engaged in carrying out an assigned non-subject matter task such as moving into squads or moving from the gymnasium to the football field.</td>
</tr>
<tr>
<td>8. Waiting (W)</td>
<td>the student has completed a task and is waiting for another instruction or opportunity to respond. A student has arrived at the assigned place and is awaiting further instructions.</td>
</tr>
</tbody>
</table>
Observer Two

The second observer focuses specifically on the teacher during the lesson. The system is designed to describe the immediate on-going roles of the teacher and, secondly, within each role, to code the specific behavioral event that best characterizes teacher behavior. Finally, the teacher interaction with the students is tallied for each interval and special note is made of the frequency and quality of teacher interaction with each of the target students.

Teacher Role:

1. Evaluation (E)  
   the teacher's immediate on-going role is formal testing of the students, such as giving them a written or skill test.

2. Instruction (I)  
   the immediate on-going role of the teacher is that of communicating information to the students, such as telling them where they are to go on the court for their practice, outlining the main points of the skill to be learned, or setting out the rules for student behavior in the gym.

3. Participation (P)  
   the immediate role of the teacher is that of participant in the activity of the lesson along with the students, such as making up the final couple in a square dance. Teacher demonstration for the purposes of instruction is coded as instruction (I) and not participation (P).

4. Supervision (S)  
   the immediate on-going role of the teacher in supervising the student behavior in the class. When students
are moving from one instructional episode to another (from instruction to activity), the teacher is usually in a supervisory capacity. If, however, the teacher is telling the students where they are to go as they move away, then the teacher is still in an instructional role (I).

Teacher Behavior:

1. Accountability (A)
   the teacher holds the students responsible for their behavior and/or keeps them alert and on task. The teacher may provide a series of cues to the students before or as they begin a task, solicit a response of the student, listening to the response of a student to a teacher solicitation, consequating student appropriate and inappropriate behavior. Accountability of the group is coded (Ag) when the teacher holds two or more students but not the entire class responsible for their behavior by having them demonstrate what they have learned for the teacher and/or the class. (Al) is coded when one student is held responsible for his/her behavior.

2. Appraisal (Ap)
   the teacher makes a judgment of correctness or incorrectness about a student(s) behavior or product of their behavior such as praising John for following directions, or desisting a student for talking while the teacher was speaking.
3. Setting Student Expectations (SE)  
the teacher is involved in outlining certain norms of behavior in the gym both in terms of general and skill behavior. The consequences for infractions of such norms may also be outlined or the teacher may be in the process of presignaling students that they may be asked to demonstrate a task or discuss it in the immediate future.

4. Demonstrating (D)  
the teacher is involved in demonstrating a skill, skills, or strategy that the students are to practice during the lesson. This may be done on his/her own or with one or more students.

5. Initiating Information (I)  
the teacher is communicating information to the students about the subject matter of the day's lesson. Such information may include describing the main performance points of the spike in volleyball.

6. Giving Directions (G)  
the teacher is involved in giving directions about a specific drill they are about to practice, what they are to do, where and with whom they are to practice, and for how long. Explanations of how to prepare the instructional setting for activity is coded as (C).

7. Observing (O)  
the teacher watches one or more students during a transitional, managerial, instructional, or activity episode. The teacher's eyes move about the gym, focusing on student behavior. They may be in one corner of the gym, scanning the class or
moving about without making any comments to the students on their general and/or skill behavior.

8. Monitor (M) there is no attempt made by the teacher to maintain eye contact with one or more students in the gym. The teacher may be dealing with an intruder in the classroom or speaking with a student on a topic that is unrelated to the instruction of the day such as discussing an up-coming basketball exhibition with a student while the rest of the class practices.

9. Break (B) the teacher is not in a position to see the students in the gym. He/she has either left the gym entirely or is in the storeroom and not in a position to see the class.

Teacher Interaction:

For the purposes of this study, teacher interaction will be tape-recorded and coded later using the following categories. Teacher interaction with the target students will be monitored during the study by circling the interval during which such interaction occurs. This will be a frequency of teacher verbal interaction with students.

Positive feedback (Po) a positive reaction by the teacher to student skill behavior related to the day's lesson. This may either be general or specific in nature.
Corrective feedback (C)  a judgment of incorrectness by the teacher to student(s) motor response(s). The feedback may be of a very specific or general nature, such as "you need to lock the elbows as you contact the ball" or "you will need to improve that serve."

Prompt (Pro)  cues for previously acquired psychomotor behaviors that can be used to cause a response in the presence of a new stimulus cue. The most common types of prompts are verbal directions and commands. They are given before or just as students begin to do something.

Praise (P)  a positive reaction by the teacher to appropriate general behavior by a student such as following directions promptly or sitting quietly as the teacher distributes equipment.

Desist (D)  the emittance of a behavior by the teacher in an effort to terminate student misbehavior such as ordering students to stop, or desisting them and then assigning them a task to do.
**SUMMARY SHEET**

<table>
<thead>
<tr>
<th>School ___________________</th>
<th>Time of class</th>
<th>Time teacher starts</th>
<th>Time teacher ends</th>
<th>Date ____________________</th>
</tr>
</thead>
</table>

**Activity** __________________________ | **# of students** | **# not participating** | **# not dressed** | **Observer** |

| Class | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|-------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Student 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Teacher R | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Teacher B | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Praise | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Desist | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Positive | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Corrective | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prompt | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Class | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 |
|-------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Student 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Teacher R | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Teacher B | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Praise | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Desist | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Positive | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Corrective | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prompt | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**Teacher Verbal Interaction**

<table>
<thead>
<tr>
<th>Praise (P)</th>
<th>Management (M)</th>
<th>Drill Practice (D)</th>
<th>Accountability (A)</th>
<th>Monitoring (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denial (D)</td>
<td>Transition (T)</td>
<td>Scrimm./Routine (S)</td>
<td>Instructing (I)</td>
<td>Demonstrating (D)</td>
</tr>
<tr>
<td>Positive (Po)</td>
<td>Waiting (W)</td>
<td>Game (G)</td>
<td>Observing (O)</td>
<td>Appraisal (Ap)</td>
</tr>
<tr>
<td>Corrective (C)</td>
<td>Evaluation (E)</td>
<td>Fitness (F)</td>
<td>Break (B)</td>
<td>Giving Direct. (G)</td>
</tr>
<tr>
<td>Prompt (Pro)</td>
<td>Instruction (I)</td>
<td>Mod. Games (Mg)</td>
<td>Setting Expect.(Se)</td>
<td></td>
</tr>
</tbody>
</table>

**Class Context Level**

<table>
<thead>
<tr>
<th>Engaged</th>
<th>Non-Engaged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Supportive (Ms)</td>
<td>Wait (W)</td>
</tr>
<tr>
<td>Motor Inapprop. (Mi)</td>
<td>Off task (Off)</td>
</tr>
<tr>
<td>Motor Approp. (Ma)</td>
<td>On task (On)</td>
</tr>
<tr>
<td>Cognitive (C)</td>
<td>Cognitive (C)</td>
</tr>
<tr>
<td>Interim (I)</td>
<td>Interim (I)</td>
</tr>
</tbody>
</table>
Task I: Learning the definition and symbol system

Study each of the definitions found in the first five pages of this booklet and match the definitions of behavior described below with the appropriate symbols. Before one can proceed to Task 2, you will need to have gained 100% accuracy in this first task.

<table>
<thead>
<tr>
<th>Definitions</th>
<th>Symbols</th>
</tr>
</thead>
<tbody>
<tr>
<td>The teacher asks the student to repeat the task of volleying the ball against the wall.</td>
<td></td>
</tr>
<tr>
<td>The teacher outlines the rules she expects the students to adhere to while in physical education class.</td>
<td></td>
</tr>
<tr>
<td>The teacher demonstrates for the students the forward roll on the balance beam.</td>
<td></td>
</tr>
<tr>
<td>The teacher stands at the door of her office glancing at the class periodically as they practice spiking the volleyball while he checks off the roll.</td>
<td></td>
</tr>
<tr>
<td>The teacher sends a couple of students to time out and tells them to remain there for three minutes.</td>
<td></td>
</tr>
<tr>
<td>The teacher outlines the main performance points of the back handspring.</td>
<td></td>
</tr>
<tr>
<td>The teacher checks student performance as she has them demonstrate the routine they have been practicing on the floor.</td>
<td></td>
</tr>
<tr>
<td>The teacher moves about the class analyzing student performance and offering feedback where necessary.</td>
<td></td>
</tr>
<tr>
<td>The students are taking a test on the rules of European handball.</td>
<td></td>
</tr>
<tr>
<td>The teacher outlines the drill the students are to practice for the next ten minutes of the lesson.</td>
<td></td>
</tr>
</tbody>
</table>
Definitions

The teacher asks the students working on the beam to perform their routine for the rest of the class.

All the class is practicing and the teacher is engaged in giving feedback to a group of three who are having trouble with the drill. She watches them do the drill and then offers feedback to the group and watches them perform again.

The teacher tells a student to get back to the balance beam and resume practice.

The teacher specifies exactly what was correct with John's spike.

The teacher explains to a group of students why it is important they do not perform the skill in the manner they have been doing it.

The teacher laughs with a group of students as they try to set up the net for volleyball.

The teacher praises student for following directions.

The teacher calls out specific performance points as the students begin to practice the skill on their own.

As the students begin to come into the swimming pool, the teacher repeats to them they are to walk around the side of the pool and enter it by stepping in or diving into the pool.

While Anne continues to bump the ball, the teacher says "Excellent height on those bumps, Anne. Keep it up."

The teacher asks the students to get out the balls and to put them into the four boxes placed around the room.
Definitions

At the end of the class, the teacher asks half of the group to play a three-on-three mini basketball game in order that the rest of the class can watch their man-to-man defense.

The teacher remains in one corner of the gym and watches the class practice watching for any off-task behavior.

The teacher has a student hand out the rules test for badminton and tells them they have ten minutes in which to answer the questions.

The student is engaged in subject matter motor activity with a high degree of success.

Time devoted to transmitting information about the topography of the motor response required.

The teacher has a student demonstrate the new skill for the class before they begin to practice.

The student is appropriately involved in a primarily cognitive task such as listening to verbal instructions about how to organize, watching a demonstration, or participating in a discussion.

The student is involved in completing a management task such as moving into squads and putting the equipment in position on the floor.

Time the class spends in the practice of skills outside the applied context such as practice of the promenade in square dance.

Time devoted to the refinement of skills in the applied setting for which there is frequent instruction and feedback from the teacher.

The student is engaged in subject matter motor activity that is too difficult for him/her.
**Definitions**

The student is engaged in non-instructional activity such as retrieving balls, fixing the equipment, or changing sides of the court.

The student has completed a task and is awaiting the next instructions from the teacher or another opportunity to respond.

Time devoted to the organizational activities of the gymnasium such as changing equipment or changing activities within a lesson.

Time devoted to class business that is unrelated to the objectives of the lesson such as discussion of an upcoming sports event in the school.

The student is either engaged in an activity he/she should not be engaged in or is not engaged in activity such as fighting or fooling around and disrupting the group with which he/she was assigned to.

Time devoted to transmitting information about the physical form of a motor skill.

Time devoted to activities that are intended to alter the physical state of the individual such as circuit training or weight lifting.

Time devoted to routine execution of physical activities whose purpose is to prepare the individual for engaging in further activity such as a period of light exercise to begin class.
**Task 2: Assigning the appropriate category to specific behavioral descriptions of a physical education lesson.**

The objective is for each scenario to be coded at each of the four context levels of the system. Before moving on to Task 3, you should be able to obtain at least 90% on identification of categories.

<table>
<thead>
<tr>
<th>Scenarios</th>
<th>Context Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>The students begin practicing the underhand throw. Each of the target students is just getting to their positions on the gym floor and have not started to practice. Teacher walks around observing how the students are coping with the task reminding them what they are to do.</td>
<td></td>
</tr>
<tr>
<td>The teacher shouts &quot;freeze&quot; and the students hold the balls. Each target student continues to throw the ball against the wall. The teacher looks around the gym and praises one student for following directions.</td>
<td></td>
</tr>
<tr>
<td>The teacher has the students sitting in the centre of the gym explaining the game they are about to play. The target students are appropriately cognitively engaged. The teacher asks a question of one of them to ensure they understand what it is they have to do.</td>
<td></td>
</tr>
<tr>
<td>The class is involved in a game trying to knock down the other team's skittles. The teacher stands to the side monitoring the activity. All target students are engaged in the motor activity at an appropriate level of difficulty. The teacher calls out specific reminders to the students about the rules of the game and says to one student, &quot;That's the way to play fair.&quot;</td>
<td></td>
</tr>
<tr>
<td>The teacher sends students to fetch equipment by the gym wall. All target students are either fetching the equipment or placing it on the floor. The teacher stands in the center of the gym directing traffic.</td>
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</table>
The teacher instructs the students in the main points of the three man weave. All target students listening to the teacher. The teacher jokes with the students about some comment made by a student.

The teacher demonstrates how to do the serve in tennis. The target students watch the teacher and the teacher continues to instruct them on the tennis grip and the stance.

The students are practicing the serve. The teacher moves from court to court having students perform the serve. She offers feedback (2) (corrective) and also praises them for effort and having the correct grip on the racquet.

The teacher watches the class from the center of the basketball court with players working on either side of her. She observes one of the target students fooling around, tells him to sit out for one minute. The other target students are appropriately engaged. To another student in the class the teacher says, "Good form, Billy."

The class is practicing three gymnastic skills. The teacher is involved with a group and having them repeat the skills providing corrective feedback to them after each attempt. One target student is having a lot of difficulty with the cartwheel while the others are appropriately involved.

The teacher is taking attendance and tells the three target students to sit down and remain seated until she is finished. Continues taking attendance and praises John for having his strip with him today.

As the students do their initial exercises, the teacher moves around observing whether they are doing it correctly. Only one of the target students is in the gym. Teacher praises four students for being in the gym early, tells another to hurry and tie his shoes, and says to Billy, "You are doing that stretch very nicely."
The students are involved in a game. The target students are playing goalies and refereeing, respectively. The goalies are not involved in the action at the moment. The teacher has a student in the corner talking to him about his misbehavior.

The teacher is explaining to the students how equipment is to be removed from the storeroom. Two target students are talking to one another, the third is listening to the teacher. As she leaves the students get the equipment she continues to repeat the various ways the equipment is to be treated.

The teacher has finished instructing the students on the main points of the lesson and sends them to the gymnasium. The target students are running to the gym to begin the activity. The teacher follows on behind, encouraging the slower students to hurry up and put their clothes away.
Please study these rules carefully. This should solve most of our coding problems.

Teacher Role Categories

1. Participation (P) is only coded when the teacher is participating along with the students such as the teacher making up a final couple in square dance, a player on a team, or just involved in the activity with the students as a participant observer. If the teacher demonstrates an activity during an instructional episode, the teacher role ought to be coded as instruction (I).

2. Teacher supervision role is coded (S) when students are participating in an activity and the teacher's immediate role is of observing student behavior whether it be on task managerial behavior or engagement in the instructional activity of the day.

3. Evaluation (E) is coded if the teacher is testing the students in the formal sense such as giving them a written, oral, or skill test.

4. Teacher instructional role (I) is coded when the teacher has all the students listening to the teacher communicating some kind of information whether it be of a managerial, technical, strategical, or disciplinary nature. The decision is based on the behavior of the class as a whole and not an individual student or group of students who may be receiving instruction.
5. Remember, when students are moving from one episode to another, the teacher's immediate role is usually supervisory. When, however, the teacher is telling the students where they are to go as they move, the immediate role of the teacher is instruction (I).

Teacher Behavior Categories

1. If the teacher is providing feedback to a student or students during most of the interval, it should be coded as appraisal (Ap) and not observing. Observing (O) is only coded when the majority of the interval is spent watching the class without making any comments to the students.

2. Monitoring (M) is only used in instances where the teacher does not have eye contact with one or more of the students in the class as they participate in the assigned task. This may include a teacher discussing something unrelated to the day's lesson with a student(s) and not scanning the class to see what is going on. It may also involve the teacher dealing with an intruder(s) in the gym which takes more than 7 seconds to deal with. Break (B) is only coded when the teacher leaves the instructional setting and by doing so is not in a position to see the students at work.

3. If the teacher is involved instructing the students on a specific skill or how to perform a particular drill, initiating information (I) is coded. While initiating information (I), the teacher demonstrates the skill, then teacher behavior is coded as demonstrating (D). (D) is coded before (I) at all times if both occur simultaneously.
4. The distinction between initiating information and giving directions may sometimes be subtle. When a teacher outlines the main points of the skill or strategy, explains where, on the playing surface, students are to go, what they are to do, with whom they are to do it, and for how long, it ought to be coded as initiating information (I). If a teacher explains where the equipment for the activity is to be distributed to, who is to move it, or how it is to be carried, then teacher behavior is coded as giving directions (C). The instructions are not directly related to student performance but are necessary directions to set the conditions for learning to occur. Explanation of the task and how it is to be performed are coded (I) while an explanation of how to prepare the instructional setting so the task can be accomplished is coded (C).

5. Distinguishing between accountability (A) and appraisal (Ap) may, at times, be difficult. If the teacher's verbal behavior is best characterized as feedback to students on their skill behavior, appraisal (Ap) ought to be coded. If the teacher provides a series of cues either before or as they begin the task, teacher interaction will show a series of prompts and teacher behavior will be coded as accountability (A). Accountability will also be coded in instances where the teacher checks students' performance on a checklist, solicits a student response, and listens to a student response. To code the interval as accountability (A), it must last longer than seven seconds in any one interval. Accountability of a group is coded when the teacher holds two or more students but not the entire class responsible for their behavior by having them demonstrate what they have learned for the teacher and/or the group.
6. When a teacher asks a student to demonstrate for the purpose of instruction, teacher behavior is coded as initiating information (I). Even if the teacher observes the demonstration without comment, it still ought to be coded as (I) as this is the function it serves to the class.

7. When the teacher asks a student(s) to show the class how well he/she/they have/has mastered the skill, teacher behavior is coded accountability (A).

8. If a teacher observes a student misbehave and then asks them to show the class what they have learned so far, teacher behavior ought to be coded accountability (A).

9. If, in the class above, the demonstrating student is a target student, student behavior is coded as engaged appropriate (Ma) or inappropriate (Mi) depending on the performance. If the target student is attentive to the demonstration, student behavior is coded as cognitive (C).

10. When observing (O) and appraising (Ap) are of equal duration during one interval, code appraising (Ap).

11. When observing and accountability are of equal duration in one interval, code accountability (A).

12. When accountability and appraisal are of equal duration in one interval, code accountability (A).


**Student Engagement/Non-Engagement Categories**

1. You will only have about five seconds to decide on each student's behavior. If, during that time, the student contacts the ball, shuttle, etc., then this engagement will be given priority over all other learner moves categories. If the student had a successful encounter with the activity, motor appropriate is coded (Ma). If the contact was unsuccessful, motor inappropriate (Mi) is coded. Motor supportive is coded when the student is spotting in gymnastics, feeding balls to a fellow student, providing feedback as in the role of observer in the reciprocal style (Mosston, 1979) or as in an activity but not directly involved in the action (Ms).

2. If a student is moving from one station to the next, from one court to the next in a rotation sequence, from activity to instruction, student behavior is coded as on task behavior (On). If they are getting out equipment, on task is coded (On).

3. If a student is in an on-going activity and has had successful contact with the ball, code Ma. If the student is involved in retrieving the ball, code interim (I).

4. If the student has retrieved the ball and is waiting for classmates to get into appropriate position, code waiting (W). The same symbol is used for a student waiting for teacher to give the signal to start or waiting in line for an opportunity to respond.

5. In square dancing, the student has often to wait his/her opportunity to move. Standing still, if that is appropriate at that time in the dance, is coded as (Ma) and
not interim. If, however, they are standing waiting for the music to begin or for the signal from the teacher, code (W). If they move incorrectly or before they are supposed to move, code (Mi).

6. Cognitive is used also in instances other than students listening to teacher's initiation of information. If a student asks or answers a question by the teacher, fills out a task card, or listens to teacher feedback, student behavior is coded as cognitive (C).

7. Off-task will take priority over all non-engaged categories if it occurs for equal time during an interval. If it occurs for the same time as (Ma) or (Mi) or (Ms), then the engaged categories will be coded.

8. If a student is in an on-going activity and makes no effort to play the ball or moves out of the way as it approaches him/her, student behavior is coded off-task (Of).

9. When coding student behavior, circle the (Ma) category for a student when he/she makes actual contact with the ball, shuttle, etc. If the student is involved in an activity but is not directly in contact at the time of observation, code it as simply (Ma).

10. In coding student behavior, code the first target student in the first five seconds, the second target student between the fifth and tenth second, and the third target student in the last five seconds of the interval. The class context should be coded at the beginning of the interval as it does not change for long periods at a time.
Class Context

1. One needs to distinguish a game (with normatively accepted rules and procedures) from that of a modified game. The modified game (Mg) involves some rules, sides, and winners if necessary, but does not adhere to all or any of the rules of a sport. The class is involved in playing a game without the frequent interruptions by the teacher with instructions and feedback.

Teacher Interaction

1. Prompting (Pro) is a cue(s) to a student(s) before or just as they begin to do something. Feedback is teacher response to student behavior and is coded positive (Po) or corrective (C).

2. When the teacher interacts with a target student, circle the interval if you cannot distinguish the specific category it should be coded in. If you can distinguish the interval, tally it in the relevant column under the specific interval.
APPENDIX D

INITIAL INTERVIEWS WITH TEACHERS
PRIOR TO DATA COLLECTION
I apologize for this long delay in communicating with you since early February. Resolving problems with the organization of the course have taken longer than I expected. I hope that you will bear with me and the course will be worth the wait.

The final preparations are now in progress and, with the help of two other observers, I will begin direct observation of your classroom on Monday morning March ___ at _______. This is the class I will monitor for the entire period. The course will last no longer than 10 weeks and may be a week or two shorter depending on your program schedule.

I will be out to visit you during the week of March 14th and would like to discuss a series of issues concerning your philosophy of physical education and the constraints, if any, put upon your program by the school system you work for. (See attached form) This will help me to view the school and the program of physical education from your perspective. This is vital if I am to be of any help in aiding you improve your program and/or your teaching, improve the performance of your students, and the enjoyment of physical education by both you and your students. The question/answer session should take about a half hour. The attached form is intended to help you formulate some answers to these issues before we meet.

At this visit, I would like for you to suggest the names of five highly skilled athletes, five medium skilled, and five poorly skilled athletes in your ____ class. With both yours and their permission, I would like them to fill out a
weekly or bi-weekly questionnaire throughout the length of the course on how they perceive their P.E. classes.

Finally, this being a situation where University staff will be visiting the school on a regular basis, I think it best you inform the principal of our presence on the premises. If the principal should have any questions about the course, I will be very happy to meet with him/her. I would also like to bring to your attention again that I hope to use the data for my dissertation research. If you have any objections, please let me know as soon as possible and I will not use your data.

I thank you for your patience and I look forward to meeting with you in the coming week.

Yours sincerely,

Mary O'Sullivan
Topics for Discussion at
Initial Interview

1. Your perceptions of school board expectations for education - specifically P.E.
   - written
   - oral
   - financial

2. Parents perceptions of physical education
   - do they discriminate P.E. from sport
   - do they support P.E./sport in school-time/money/expertise

3. Students expectations of P.E.
   - their involvement in intramurals in varsity
   - participation in P.E.
   - quality of their performance

4. What expectations do you have of the:
   - the school board
   - the principal
   - students
   - parents

   What do you see as the contribution of P.E. to the general education of the student?

   What function does P.E. serve in the school?

5. What are the major constraints you experience in the development of your program...time allocation?

6. Colleagues in the P.E. department...do you all share a consensus about the purposes of P.E. in the school...do you work as a team...do you keep records of student performance...do you share them with fellow teachers...are responsibilities and work load shared equally?
7. Students...do the majority like/dislike P.E....do they reach your expectations...ought effort and participation to be part of your P.E. grade?

8. How are the objectives/expecations for P.E. communicated to the students, if at all...how many class periods are devoted to each activity...how is this decided...is the program aimed at skill proficiency...introduction to a wide range of activities...other objectives?

9. Do you have responsibilities outside the P.E. class to different sports...what are these time commitments to these sports?

10. Behavioral Issues...how are behavioral issues dealt with in your school...is it a total school effort...is it an individual school effort...how are school rules and procedures communicated to the students...what are the consequences for breaking such rules...are they successful generally?

11. Teacher Satisfaction...are you satisfied with the standards of student performance...how much progress do you think you have made since you have come to this school...what have been the main frustrations with the position...how might your position and that of the program be improved...do you think you spend enough time/too much time/sufficient time at school...do each of the P.E. staff carry a fair share of the load?

12. What kind of things might hinder an attempt to improve the curriculum...how would...the principal fellow P.E. teachers students react to proposed changes in...curriculum scheduling how to decide to run your own class
13. Within the basic framework that exists at the moment, what would be the kinds of improvement that are possible at the present?

14. What do you perceive as the main strengths and weaknesses of your program at the present time...of your teaching?

15. Grading Policy...what are the criteria on which P.E. is based...within a course when does grading occur...when and how are students told about what they have to do for their grade...who does all the grading...do the students know how they are progressing through a course...do the students care about their P.E. grade...are parents concerned about their child's P.E. grade?

16. Participation levels outside P.E. class...are they high, medium, low?

If you do not get to all these issues in the initial session, we can do so at another time.
Initial Interview with Teacher A

Researcher: I want to give your class a questionnaire. I've tried it out with a 5th grade class and they've understood it which is good. Will there be any problems about giving them the questionnaire?

Beth*: No. When did you want to do that? Do you want to do that Monday right away?

Researcher: I'd like to.

Beth: O.K., because we were going to start square dancing. I have this class on Monday and Thursdays, and another Tuesday and Friday. You just want to watch one?

Researcher: That is right. Perhaps I'll watch another class initially so I get the "feel for the school" and you get used to having me around.

Beth: O.K. (laughs)

Researcher: I need a list of kids from that 5th grade - H.S./M.S./L.S./ I'm going to give them another kind of questionnaire - very short and ask them about the class. You won't know which students I will be interacting with. I might need them for 5 minutes from the regular teacher's class. Do you think this will be a problem?

Beth: Oh, no. Mrs. Vanvault is very accomodating.
Researcher:  Eventually, six weeks into the project, I will suggest that you really try and interact a good deal with these students in the gym to see if they can actually perceive the difference in your attention to them. These kids must be pretty good attenders as I would like to be able to see them most of the time.

Beth:  I looked again yesterday and tried to make sure I had the right kids but I need to check on attendance. I don't take attendance. I don't take the time because I only have them such a short time.

Researcher:  I think that is a good idea.

Beth:  I have fifth graders twice a week at the end of the year because spring is coming and maybe I can do some intramural things with them at noon time. I also have some extra time at the end of the day.

Researcher:  I don't want to start with question one because from speaking with you earlier, I got the feeling that you are tired of this subject (school board and the budget problems). Why don't we start by asking you what do you think the kids expect from physical education class here in the school? Do they see it as a fun time?

Beth:  I think the younger kids see it basically as a fun time. I sort of see it as that. You are trying to build skills through fun things using balls, hoola hoops, parachute, scooters. A lot of different things to try and make it
fun but yet build on some skills.

Researcher: Do you think they have a positive attitude towards it?

Beth: Yes, I do.

Researcher: Do you have any problems with them in the classroom?

Beth: No. Oh, you have a few discipline things here and there. Basically, the kids are very receptive to physical education and I don't have any problems. You might have one who is a little wild and cannot control himself...I have a kindergarten boy like that who cannot hold onto balls, so I try and talk to him individually and tell him to try and to "simmer down, get control of your ball." No, basically, very receptive. Now, the older boys, especially, are getting into a lot of little leagues and all this stuff, and they think we ought to be doing a lot of sport things which we do at 4th/5th grade, but I do the square dancing with them also. They are moaning but they always end up liking it.

Researcher: Is that part of the role they have to play?

Beth: Yes. Basically, the physical education program in this building and in the overall district at the lower levels is good. Now at the higher levels it needs a lot of revamping!
Researcher: Are you happy with the physical education program in the lower levels?

Beth: Yes. I'm happy it is here! We have had specials (includes physical education) in our school district about nine years and I was in the district (at the high school) and worked hard to make sure they would get it in. The way we got it in is that the teacher's special time at the elementary level is the regular teachers' conference time. They negotiated that they wanted a 40 minute conference time. Then they (the school board) initiated the "specials". I do not know whether they instituted the specials because we needed these activities. We had music but not art and physical education. There was a very dynamic person at the high school who was in charge of the music department and he influenced the board to get music on all the curricula. Then we got the physical education and art.

Researcher: What about the principal then? What are his perceptions for physical education as distinct from those for reading and math? How important does he regard physical education in this school, do you think?

Beth: I think he thinks it is important. I've never really actually sat and talked to him about it. I'm sure he thinks it's important because he was a classroom teacher and is not too long out of the elementary classroom. He was not a high school person coming down. So, he sees
it as important because he has mentioned to me several times that he used to do things with the kids in his class.

Researcher: Does he ever ask you what you are doing?

Beth: Oh, he comes through a lot. He doesn't actually stop and watch for long periods of time. The cafeteria is in there so he will be in and out two or three times a day and sees what I'm doing. Often he'll just stop and watch for a while.

Researcher: Do you think he understands what is going on?

Beth: Yes, I'm sure he does.

Researcher: That's good. How important do you think a principal is to a school?

Beth: Well, it's hard to say. At the elementary level, we function very well without the principal. Sometimes he is gone and nobody knows he is gone.

Researcher: Do you think that is different in a high school/middle school?

Beth: Yes. I think there is a need for more communication in middle and high schools and the principal has to be sure that that occurs because they are all in their own space....we don't work together. At the elementary level, teachers are all the time conversing, asking about a
Researcher:  You've been in both situations for a number of years. Why is it different in the elementary school?

Beth:  Basically, they are teaching the same thing (elementary school) and that is probably the biggest thing and so they can help each other. What might work for one child may not work for another. When we have workshops, they can all work towards the same thing. I think the middle schools work together better than the high schools, especially ours because it is kind of an open concept though they've put up partitions and it is not as open as it was. They are a closer faculty. They interact more and socialize more than at the high school. Here at the elementary we have breakfasts or we'll have a party if somebody is leaving. I know everybody in the school better than others because I have all the kids and get a chance to have a quick conversation as they bring their kids in for gym.

Researcher:  Are they (the regular teachers) supportive of what you do?

Beth:  Oh, yes. Basically, it is their conference period (laugh).
Researcher: Do they ever come and watch on any kind of a regular basis?

Beth: No, no. It is their conference period. No, nobody really comes and just watches. They will say sometimes that the kids told them what they were doing in class. I converse with the teachers. If I am having trouble with a child, I will ask the teachers what he is like in the classroom. Also, I like to try and pick up on other problems that kids have and see if anything can be done in that area. I know all the kids who have speech difficulties, after our workshop, and I like to stop them in the middle of class and give them an opportunity to talk in another environment. Gym is maybe a good place to do that. They (kids) are excited or whatever and it may be better than being in the classroom.

Researcher: Do you find that 40 minutes is long enough?

Beth: For the younger kids, it is long enough for that day. The ideal thing would be to have it every day.

Researcher: What did they have (time wise) when you came here first.

Beth: The same thing as we have now. One 12 week period they have physical education just once a week. The other two terms, they have it twice a week. The way we have it set up is good and 40 minutes is sufficient for the
younger kids for that day. Having 40 minutes every day is an impossibility. Now for the older kids, sometimes I could use a little extra time, especially when we go outside. That is even true for the little children. The time to get in and out is a little short. For regular days, the time is long enough.

Researcher: What are your objectives for the program? Are you happy with it? What do you want those kids to have by the time they finish the program?

Beth: I have that written down here. I'm working on skill. Of course, I'm working on enjoyment. I think kids should be active. I think that is one of our biggest problems with kids today. They are not active enough. We have T.V. Parents carry them back and forth in cars and that type of thing. I really do not think they get enough exercise. With the older and younger kids, I work a lot on sportsmanship. I don't make a big surge in it. With the little kids, when we play a modified game, I stress that there is such a thing as a good loser and a good winner. You ought to be glad you win, but the next time you may lose. I stress congratulating people when they win, telling the other people it was a good game. That is one of the major problems. We have such a big "Little League" organization, football, baseball, the whole bit, and they really get a bad idea of sportsmanship and winning. So, I work on that. A lot of times the students will say this and that, but I say I do not care what your
coaches do, because they are not always good examples. I really try to stress that type of thing. I feel I've made some headway with that since I came here. I've noticed that a lot of my fifth graders were second graders when I came here and they really have changed in their play. They are not so upset when something is called. They do not react quite so violently as they used to. I think I've made an inroad in that. I really try to work on that. If I have a kid that is good, I will talk to him and say that he will have to change his attitude if he expects to get into athletics when he is older.

Researcher: You're happy with that. What is your feeling about the students skill level? Are you happy with that?

Beth: I thought about that as I read these questions. I really do not have anything to compare them with. I really need to do some observing in our district to see how other teachers have developed their skills in another district because I'm not sure.

Researcher: You were in the high school. Knowing what skills they have to have to "compete" in middle school physical education classes, do you think they have enough skill leaving here?

Beth: It's like raising your children. I only have one child so I do not have anything to compare him with. I think so. I think you are always going to have those children, skill wise, who
are not going to develop. I think I see that girls are becoming a little bit more skilled and I try and mention that to them. When I start a unit like volleyball, they have probably been in contact with it before if involved in churches, camps, etc.. I do mention that girls have it as a competitive sport at the high school. They have seen it on T.V. (Olympics). So, they know that it is a good game. The super athletic boys think it is kind of sissy and would rather play basketball and baseball. They are fairly good, so once they start, they enjoy it. I have a lot of athletically inclined boys who do enjoy volleyball.

Researcher: Do you think they perceive ability is more important than effort? How do they regard physical education, or is it easy to judge that?

Beth: I stress that I want them to try - you may not always do it, especially in volleyball where some kids stand on the floor and don't try to go for the ball. When I get them started, I just sit and watch and when somebody does something good, I say, "good try." I've noticed that once they start to play, there will be somebody on the team that will tell a person it was a good effort, even though they miss it. I try and stress that children ought not yell at others if they miss because you may miss it the next time since there are not that many that are that good. There are a lot who are fairly good, but are not consistent. The class that you will observe is a good example.
They are too big (n = 36) and there is so much noise arguing. So, I tell them to line up and they can sit for five minutes. I talk to them and tell them I realize there is 10 too many people in here and it makes 10 more voices and 10 more problems. Most of them agree and it is not their fault. It is just there is too many in the class. There are eight people on a team, four teams in there, two games going, and just makes for a lot of confusion.

Researcher: At the elementary school, there is not the influence of athletics as in the middle and high school. You spoke about Little League in a derogatory way. Can you explain what you meant by that?

Beth: I was involved in it as my son was growing up.

Researcher: What influence do you think that movement has on the kids and on your ability to do what you want to do in your program?

Beth: The first year I was here, one of the coaches told me that the kids should not play softball because it would ruin their swing for baseball. The thing I have the biggest criticism with is the sportsmanship. I think they get into competitiveness too soon. Nobody likes sports better than I do, but I think, especially football, I would never let my son into football. It was just ridiculous. Every night after school they trained. They didn't get home till after dark...no free time, no play time. We
were in baseball because it was in the summer and you didn't have a lot else to do and it didn't cut into your home life. You had the time. My son was afraid that all the kids that were in Little League would be ahead of him when he would try out for junior high football. I said they would not. The coach at the high school didn't like Little League because by the time they got to high school, they are tired of it because they've had so much. So, by the time he (son) got to 9th grade level, there were only 3 kids left that had been in Little League. Either they didn't grow and were not big enough, or they were tired. I think it takes away from recreational end of activity. They get the idea that everything has to be competitive, win or lose, that things are not played for the fun of it.

Researcher: Do you think there is emphasis on skill?

Beth: Oh, I'm sure they work on skill. I can see the skill is better in those who are in Little League, but I'm not so sure that it is going to make them any better than the other kids if they decide to pick the skills up in middle school. The only thing that the Little League players are a little better at when they get to high school ball is the fact they know the rules a little better. The skill can be developed at junior level just as easily as at the younger level. I think it takes away a little bit from the enjoyment and recreational end of activity. It is like in gym class, the second graders want to know if they are going to play
any baseball. I play a modified game.

Researcher: Do they give you trouble?

Beth: Not trouble.

Researcher: Do they want to know why we are not playing the real stuff?

Beth: Yes. They might be ready for rules - force out, etc. When I watch the six-year-olds, they are just running because the coach says to run. I just say to these kids, "Oh, no, we are not going to do any of that this year." I do not. Even at the third grade level we do play kickball a little. I do not have a unit on it, but we play a game called matball every now and then and it is hard to get the kids into the rules that they do not run when the ball is caught. It is so hard. A lot of kids get confused and upset. We do play it a little bit because I do believe that they should start knowing these rules, but it is hard, especially for girls who have not had a lot of outside play. There are some boys, too, who are not into that and it makes it hard. It is hard to know how much of it they should be forced to learn.

Researcher: In gym, do you treat the girls any differently than you treat the boys? Do you expect the same from them and communicate that to them?

Beth: I try. I think you have to make a special effort to do that. As a physical education
person, when I came down to the elementary level, I had to change my expectations. I'm better at it than I was the first year, but I have to remind myself that this is fun and not strive for perfection. The first year I expected too much. I still do of the younger ones. I suppose all teachers have to deal with that -- a child that cannot learn. You are always going to have those that are not going to be very good. My biggest thing is with girls who are "wimpy" - those type who are afraid of the ball. I have trouble dealing with those. I have to make a special point of not being judgmental with them. In volleyball, they are the ones that do not want to hit. I'll say, "just try", and when I see one that does try, I'll say "good try". Volleyball and basketball can be a disaster. There are a lot of girls who don't try, so I separate boys and girls for basketball. I have them play (girls) on the really low baskets. We never play full court. I just do that for fourth and fifth grade. Third grade we play a court basketball where they have to stay in a section and pass it up and down. We don't play regular basketball until 4th and 5th grade. I separate boys and girls because the boys are skill wise and much better. I do not think that has anything to do with physical education. I think the girls do not get out and do that. Girls are not into that.

Researcher: Would the fact that most physical education teachers (having had an elite athletic experience) have difficulty communicating with and
understanding girls who do not wish to try at
sport and/or are not very good at it?

Beth: I suppose. When I was at school, we played
court basketball. I didn't realize it, but
there were kids who were not interested in
sport and now I have to deal with that. I
liked it so well. Now I think I have more
trouble dealing with older kids (girls) who do
not like it or have no interest in sport. I
try to make a special point of encouraging kids
that are not very good, especially at older
level. Try to encourage them to use skills
that they can have success with.

Researcher: At your parent-teacher meetings, do they come
and ask you about how their children are doing
in physical education?

Beth: Yeah. On open house, I'm usually in the gym
and a lot of parents will stop and talk to me.
Kids want their parents to meet me. I'm not so
sure that they want to meet the physical educa-
tion teacher.

Researcher: How do the parents perceive physical education?

Beth: I'm not sure. I've had feedback like "my child
loves gym the best" or they have physical edu-
cation today. Of the three special areas
(music, physical education, and art), physical
education is probably their favorite. I'm not
so sure it's me. It probably is the nature of
the activity. They just enjoy getting in there
after sitting in the class and they can let off some steam. That is such an important thing for the younger kids. There are a lot of kids that enjoy music, but it has a lot to do with the teacher. They would like gym no matter who is the teacher.

Researcher: Maybe you are being modest?

Beth: Could be. I do not know. I always have this feeling that I'm not doing a good enough job. I was thinking about that as I tried to answer these questions. I'm not sure if I'm doing the proper thing - developing the proper skill. It all comes from the fact that I do not have a good background in elementary physical education. I've done a lot of asking around and, when I found out I was coming over here (to the elementary school after ten years in the high school), I asked a lot of teachers in our district, whom I thought were good, about what they did. I had one elementary physical education class. I had folk dance class but it wasn't for elementary classes. I think the training that they get today is much better than what I got. In that era, physical education was not a big thing, least of all elementary physical education.

Researcher: I suppose physical education in elementary schools is still not a big thing?

Beth: No, it is not.
Researcher: What are the main strengths and weaknesses of your teaching?

Beth: That is hard to say, as I do not have anybody to compare me with. I don't know.

Researcher: In terms of your expectations of what one (physical education teacher) should be?

Beth: My organization - I don't think it is what it ought to be. I'm not sure that I sequence things well. Sometimes I feel, especially at the elementary level, that I hit and miss on some things. I'm not sure...or I'll spend a week or so on hoola hoop activities and then jump rope activities. Sometimes I go back to that again but I do not know if that is sufficient. Rhythmics - I try to bring that in (square dancing is part of this plan) and I've not done any rhythmics with younger kids. I've used this for walking or skipping, but I'm going to try folk dance activities and I'm anxious to see how it turns out. I've never had any training in it, so I'm just going to see how it works in that.

Researcher: I'm sure that you're not the only person who feels like that.

Beth: Don't you think they are better prepared now?

Researcher: Yes. Teaching, however, for most of them is a secondary career choice and if interested in teaching, they see all the advantages to teaching in the high school.
Beth: That is one of the main reasons why I got out of the high school. I didn't enjoy coaching. I enjoyed coaching softball. I wasn't capable of coaching basketball at high school level. I guess I'm a person who does things for fun but I'm a competetor and like to compete, but I just didn't want to get into the stress of doing that (coaching). Now volleyball, I enjoyed that, and I felt that they were the two things (volleyball and softball) that they were not going to key upon. I would like these because the stress would not be there. I could coach volleyball. I was hoping that when they got another teacher up there (high school) that it would be somebody interested in coaching. There are a lot of people who want to coach. But, there is not a big turnover in teachers any more where you can get people who want to coach. People get into schools and stay. Initially, they will coach for a while, give it up, but do not leave the teaching field. So you have a situation within a school where there are not enough people who want to do that. The new physical education teacher is doing some coaching. She took track. I always had cheer leaders which really took up my time through football and basketball, and I really couldn't coach and do that, and I did a good job at that. I enjoyed it, but I just was not doing enough.

Researcher: Do you feel that here? Do you feel on top of the program that you have?

Beth: Yes, but I am not so sure it could not be better.
Researcher: What do you think could be better? What do you see we could work on? I'll probably have some ideas after I see you teach for a little while.

Beth: Yeah. Organization is probably it. Am I getting enough playing? Am I getting enough into the time that you have? Do I talk too much? I think I talk too much and I've a feeling they are not listening to what I'm saying. Maybe I am. When I do volleyball, I like to remind them that it is a good carry-over thing. It is something that you'll play. When we do basketball, I know some girls are not interested, so I mention that I know most of you are not going to be basketball players, but that's not why we do it. We do it because I'd like for you to get an appreciation of the game. I want you to know the rules so that when you watch a game you'll be able to know what a foul is. When you go to the high school game or watch a game on T.V., I always asked how many have seen a basketball game on T.V.? I often say you may go with a boy who plays basketball and so it would be nice to know a little bit about the game. I try and bring in a lot of different reasons. I don't know whether that is a waste of time or not. This is why I want to do this (take the course). I did not know what it would entail. You probably will be able to get some idea of what I'm like by watching one specific class.

Researcher: I think it is best to follow you in one class. I'll get to know you and the students also and
the interaction between you and the class.

Beth: Now, I do not give any written tests.

Researcher: That's something I want to discuss. How do you grade them?

Beth: Basically, by observation.

Researcher: What are the criteria?

Beth: There are criteria. One is sportsmanship, one is skill. It is different for 1st, 2nd, and 3rd grade, from 4th and 5th grade.

Researcher: You change the criteria then?

Beth: Yes, a little bit. We did a new grade card last year. I do not feel that we get together enough as a group to discuss and develop as teachers. I'm sure they have ideas I could use and I have ideas that they could use, but no one has taken the initiative to do it. I've thought that I should do it.

Researcher: Do you mean of the elementary physical education teachers?

Beth: Yeah. It would be nice if we could meet with the rest also, as what we do affects their program, but it is hard to get people together. It would have to be very early morning or late afternoon. Teachers today don't seem to be prepared, as before, to put in that extra time. I was at the high school and put in a lot of
time, so the little extra time I have to put in at the elementary I do not mind it.

Researcher: Do you begrudge the fact that these teachers do not put in as much time as they should?

Beth: Well, I cannot complain because I could have taken the initiative to do it and do I want to put in the extra time. If somebody else would do it, I'd gladly go. I thought the new curriculum that was devised needed to be changed. They asked our opinion. I said I'd be willing to go to a meeting to discuss the proposed changes. They never held a meeting.

Researcher: Have you seen the finished product?

Beth: Yeah, and the same thing that was on for physical education before is still there. Nobody has taken the initiative to get together and do something with the physical education curriculum.

Researcher: Have you seen the physical education curriculum for Madison Local Schools?

Beth: The physical education curriculum is good. We had a group of people get together and do that. That is good. But, I'm thinking we should get together and exchange ideas. When the curriculum came out, they outlined what content should be covered for each grade level. I would like to have had some ideas of how to accomplish those objectives, not just tell me that I need to do that. If we could
meet, we could do some of those things. For one meeting, bring games or rhythmic activities. To have a really good physical education program, we have to do that and we do not do that. The high school program needs to be re-evaluated but we don't have any money. I think we need an extra teacher at the high school to do what should be done. The money is short. I was afraid they would do away with special services. I don't see how they can justify having 30-35 children in a classroom and have the special people. They might hire extra regular teachers and cut down the teacher-pupil ratio. That would hinder our program, especially art and music more so than physical education. It will cut down on what you can accomplish. There are, in 5th grade, ten more people than in my other classes. It often sets me on edge and our rapport is not as good. That is the big thing. I've got to constantly blow the whistle as they just do not hear it. It is neither theirs nor my fault. There are just too many kids in the class.

Researcher: Are special services kept because of the perceived benefit to the students or because of inertia?

Beth: I think it is the conference. That was a negotiated thing. If they take us out, they will not be able to give the teachers their conference. I think they see the benefit of the special services, but if it were not for that negotiated time, probably the special people would have been gone last year.
Researcher: How much money did they give you this year to work with?

Beth: $0. I saved fun fitness points last year and I've built up my equipment. I used to get $500-$600 a year....so much per student. It was my choice. I didn't need anything for replacement and I got the cargo nets and ropes from fun fitness points.

Researcher: You accumulated that money?

Beth: Cargo rope came from those points. If I really need balls, the principal will probably give me some money for it. I opted this year not to take any money. We didn't have money for paper. I felt that music and art probably needed the money worse than I.

Researcher: So, have they been good to you with money?

Beth: Yeah. The PTA helped. They gave the money to build the climber. One of the parents built it for $150. It would have cost $1,000. I got a letter from my cheerleading camp and they gave me a mini-tramp for $100 and a mat for $25. The PTA bought the mat and gave me $200 for climber and I only used $150.

Researcher: The parents do help out then?

Beth: Yeah.

Researcher: Financially speaking they help?
Beth: Yeah. The principal took the request to the PTA council and they were glad to help. They also have saved their money for emergency funds that may be needed by the school later in the year. They are very helpful in that way. I put on a program last spring with the climber for 1st graders for a PTA meeting. There is always a big turn out when you've something going on. The gym was full. I had each class do a demonstration for their parents. It was an effort to tell the parents we appreciated their financial help. A couple of years ago, we had a music and physical education program combined for another PTA meeting involving square dancing. The kids liked that and often ask if it will be done again.

Researcher: Can you do whatever you like with your program?

Beth: Oh, yes! I'm free to do that. I have no restrictions.

Researcher: If you let the kids do anything they wanted and, as long as you kept the gym quiet, would it matter to the principal?

Beth: I think he would notice. I'm sure he would.

Researcher: So, he does expect certain things?

Beth: Yes, I'm sure he does. He has been in teaching and he knows enough about what each grade level should be doing. He is helpful. I think things run smooth at the elementary level. There are not as many problems that come up.
An elementary faculty are a little bit more self-sufficient than a high school. The only time you need to really see the principal is when a kid is having problems. You do not have the problems that one has in the high school.

Researcher: How do you deal with discipline? Is it individually or as a staff?

Beth: We have been using the "Assertive Discipline Technique" throughout the school and the classroom teachers use it. I use it a little bit. It is hard for me, for the specialist, to use it a lot because we only have them 40 minutes so we do not have time to put their name on the board and this type of thing. When the kids do not line up, they know they will miss the next five minutes of their gym period. What I do is usually try and go up to the person, say something to them. If they do it again, I may make them sit for five minutes. We have a clock in the gym and I will say you sit for five minutes watching the clock. If I have a real problem kid - I get upset with kids who purposefully do things - I'll say for them to sit the entire period.

Researcher: Do you think you are consistent in application of punishment?

Beth: Oh, yeah! It does not happen very often. Only do it with somebody who has been a continual problem like one boy who gives trouble everywhere. I had to sit him down in class. He had
to get a partner. He did make some ugly faces and said some bad things, so I had to tell him to sit for the whole period. Manners is a very important part of this class and how you treat other people is very important, so I think that deserves missing whole gym period. I always explain why I'm punishing them. Now I don't know whether that is too severe or not. That is the type of thing that I do not know. I definitely would not do that with somebody who just goofed off -- somebody who did something without thinking. You can tell sometimes that they have felt bad about doing something after you have told them. But, this boy does it purposefully.

Researcher: Well, let me finish by asking you one final question. Would it be possible for me to see the curriculum from which you work, if you do work from a specific curriculum?

Beth: Certainly. I work from the new Madison Local School physical education curriculum. Why not go down now with me and you can have it?

Researcher: O.K. Thank you.

*The subject was named Beth to ensure anonymity.*
APPENDIX E

DESCRIPTIONS OF INTERVENTION CONFERENCES
Conferences with Teacher A

Conference 1:

Objectives: 1. That the teacher understand the focus of the behavioral observation system.

2. That the teacher knows how to increase praise and positive feedback to students.

Suggestions made to teacher on how and when to increase the frequency of:

Praise: 1. Pick out students who have followed directions appropriately, rather than call on those who are not following directions.

2. When students do something inappropriately, try and mention something they have done well along with, if necessary, a desist for inappropriate behavior.

3. When an inappropriate behavior occurs, scan class for appropriate behavior.

Positive: 1. Use group directed positive feedback to motivate students to increase output rather than corrective feedback on how poorly they are learning the skill.

2. Pick out students, individually and in groups, and praise their efforts at the skill. Tell them exactly what it is about the task they are doing correctly.
3. Try and observe the students skill performance to determine those things they do well, as well as those they do incorrectly.

Conference 2:

Objectives: 1. That the teacher understand her pattern of verbal interaction during preceding lessons.

2. That the teacher knows how to design her instruction to increase and maintain appropriate student engagement.

During the conference, the following suggestions and discussion occurred:

1. - Outlined the data on teacher verbal interaction data - explained what the differences were since baseline.

   - Suggested she continue to work on this - continue to praise but watch the tone of her voice when she may say something positive but in a "desisting" tone.

   - Use of consequences for inappropriate behavior.

2. - Explained how motor appropriate student behavior had decreased since she finished Square Dance unit. Pointed out importance of maximum participation of students in the activity.

   - Provided handouts on playground games for upcoming unit.

   - Made suggestions on how the activities might be introduced (increasing the number of groups each day) to increase student participation while maintaining orderly classroom management.
Conferences with Teacher B

Conference 1:

Objectives: 1. That the teacher understand the focus of the systematic observation system.
2. That the teacher know how to increase student on-task behavior.

During the conference, the following suggestions and discussion occurred:

1. - Outlined the amount of student engagement time that occurred.
   - Outlined the amount of wait time that students accrued during baseline.
   - Suggested that the teacher try and increase the amount of student engagement by using smaller groups and more equipment.

Conference 2:

Objectives: 1. That the teacher understand how much time students are participating in the activity.
2. That the teacher be provided with specific drills and a way to design the learning environment to increase student opportunity to respond (see attached transcript of the conference session).
Conference 3:

Objectives: 1. To increase the motor appropriate behavior of the target students and decrease the waiting time and have them involved in a motor supporting capacity.

2. To provide suggestions that the teacher will be able to devote at least 65 percent of class time to activity in three subsequent lessons.

The following agenda was followed during the conference:

1. - A brief discussion on the data obtained for activity time during observations.

- Sections of a video-tape of the teacher teaching the class under observation was reviewed and problems with low rates of activity time and student engagement discussed.

- Suggestions made on how to increase activity time during the softball and frisbee golf lessons.
Conferences with Teacher C

Conference 1:

Objectives: 1. That the teacher understand the focus of the systematic observation system.
2. That the teacher understand the importance of increasing skill feedback to students.

During the conference, the low rates of skill feedback were presented to the teacher. It was suggested that they try and focus their attention on student skill attempts and provide feedback, being positive when possible.

Conference 2:

Objectives: 1. That teacher will know how to decrease transition time during lessons and increase student engagement.

The following suggestions were made during the conference:
1. - Maintain or increase individual and group academic feedback.
   - Provide intermittent class prompts to students in order to maintain their on-task behavior while teacher provides individual feedback.
   - Consequate students who fail to remain on-task during assigned task.

Conference 3:

Objectives: 1. That the teacher will have procedures to increase target student engagement.
rates during the subsequent lessons.

2. That the teacher be provided with strategies to maintain high rates of activity time during remaining tennis lessons.

The following occurred during this final conference:

1. - Data on student engagement time and allocation of class time to activity were presented to the teacher.

2. - Teacher viewed sections of the video-tape of her teaching the class under observation.

3. - Specific organizational arrangements were made to provide increased student engagement - specific partners chosen for students to work with during a specific lesson - increased teacher attention to different target students each day - provision of group prompts to maintain appropriate on-task behavior - emphasis on skill feedback by the teacher.
Intervention Conference #2 with Teacher B

Discussion of tennis classes previous to conference

Jan: They were telling me about what they do in elementary and I don't know if this is a put-down to the kids, but I felt like saying that your acting like elementary, so we are going to do a day of elementary (P.E.). I am going to assign them a number and only take 4-8 racquets out, 2-4 balls out and work on only 2 courts while the others watch and observe for 5 minutes and have the next group up. I think they were crazy tossing the racquets when my back was turned.

Researcher: They were not as bad as you're making them out. Some kids get on your nerves, no?

Jan: Some...about 4 kids that really got on me and I don't know what to do.

Researcher: Isn't that the perfect example of why teachers get turned off?

Jan: Oh, yes.

Researcher: Today, I didn't collect all my data because I was on my own, but I tried to look at specific events and see what was happening in the class. Let me tell you what my position is and then you can accept it or reject it. I felt that the students are not able for what you're
asking them to do.

Jan: No, it's too hard.

Researcher: I'm trying to put myself in a student's position and imagine the teacher coming around telling me what to do and I've tried but cannot do it. The situation is too difficult - I'll tend to give up. I heard one of the children say, "I hate tennis." I'm here long enough to know that those girls will do anything for you. So it seems the activity is too hard...so I suggest (only a suggestion) that we take a step back and ask ourselves what do we want them to achieve....more specifically, I've learned a method of tennis teaching that I'll share with you.

Jan: Oh, yeah.

Researcher: We start off and we never start at the baseline.

Jan: You know what surprises me though...Tom has taught it to the sixth grade. So here we are following through in the 7th grade and you'd have thought that they'd have picked up at least some of the basic skills, but when I observe, they are not picking them up.

Researcher: I went back to playing it about 3 weeks ago and it's a very difficult game.

Jan: It's hard...it is. I wonder if we should even have it in the program at this time.
Researcher: That's a very good question.

Jan: But, you see the thing is, when we did the curriculum, the high school wanted it in because they've got high school interscholastic tennis and, if you don't start them before the 9th/10th grade, they won't even have a background before they get up there. So, I don't know.

Researcher: I think you can do it (tennis in middle school) but it means you need to look at it from a very different perspective. You see, today is their 4th day of tennis and they were in a full game situation and they are just not able for it.

Jan: No.

Researcher: One whole goal (in teaching tennis) was maximum participation trying to get the students to hit with the racquet as many times as possible. Now I know that the 7 balls is a problem.

Jan: Right. We just don't have many.....4 kids to a court and 3 to the side.

Researcher: Start off with the volley. Take the grip up on the strings of the racquet. Standing close to the net. The feeder in front of service line - and they are learning to turn and hit and get it back to the volley.

Jan: Both are hitting?
Yes, and they try and keep it going for as long as they can and then switch.

Do they stand right at the net?

Yes.

I guess it's worth a try.

Then you can get them to punch – purpose is not form but to keep the ball going as long as possible. Use 2 balls and switch to backhand later on (Day 2). So you can rotate one position clockwise so that they get to play with a new person. It's a "game" all the time. The first 5/6 minutes could be spent just trying to get the form down correctly. Then getting the "feel" of the shot. Then if they wish to keep score, they can make up rules to suit the situation.

At least they'd be keeping it going because now they're going all over the place, chasing them. They're going out.

....and you're getting frustrated.

Yeah. I'm really getting frustrated with the boys. Like David, etc. They've been problems all year and they are still problems. You just missed what happened at the locker room. They purposely went right in (to girls locker room) ...and I found out they've done that before 2 times and I never knew it until I finally saw it today. We gave them detentions and things
(Assertive Discipline Program) and Jim says there are no more warnings. From now on, it's the paddling. He made the decision so he took it out of my hands so I could not have said I want it this way or I don't. You know we couldn't disagree in front of the kids. When he said that, then I said that's the way it will go.

Researcher: Are you going to do as you suggested...get them out of class?

Jan: I would like to - I've to check with the principal and he'll ask have I followed through on all the detention procedures and I know Richard (stud.) will come back at me and say that this is the first detention for him, so I know I'm not going to be able to get him out of class. I don't know whether I should try and get him out and keep him in class? and give him a chance.

Researcher: I'm trying to think of some positive way to get him involved.

Jan: Yeah! I assigned them a partner the other day. It worked beautiful the other day. Today it just bombed out. So, now on Monday, do I allow them to choose the person they want to work with? If they get the person they want to work with, will they work?

Researcher: You could make it contingent. In other words, I'm allowing you to choose a partner and we are going to try new things today and, depending on
how it works, you will be allowed to get that partner next day or, if behaved inappropriately, you have your partner assigned so those that behaved get reward. The choice will then be in their hands.

Jan: Maybe that's the way to do it because I know they (boys) want to be working with somebody else and I purposefully got the friend type thing separated so we would have something accomplished. Now it didn't work today but it worked beautifully yesterday. So, we could try this and do you think they can handle this for the entire period?

Researcher: Umm... No.

Jan: I don't think so either. I think we are going to have some problems.

Researcher: Well, you can rotate them around and finally allow them to play a game within the service boxes of one side of the court. They can play rules... use the scoring system you taught them, etc. If you want to follow through on what you think.... reinforce the technique. Give them targets for performance.

Jan: What you could also do is have them rotate down one square... oh, that's what you suggest. Well, we can try it.

Researcher: Just getting them to control the fly ball. Main thing we are to accomplish is to get them all engaged. Get them active in something that
they can handle and, hopefully, you won't be as frustrated as you've been for the last two days.

Jan: Yeah - oh, terrible. It seems to me that what with having tennis in the 6th grade, that they can't handle it. Maybe they can't handle it in the 6th grade either. I haven't seen Tom teach it. Maybe they can't handle it at that age and here we are throwing them into it the second year.

Researcher: My viewpoint. I really have problems accepting that kids can learn something in 7-10 class periods. That is the problem. It's not whether he (Tom) has done a good or bad job; I think the kids don't have enough time to learn the activity.

Jan: Yes. I can just imagine going longer with the activity. We'd have problems with their attitude.

Researcher: Yeah, you might.

Jan: Then again, you might not. I don't know.

Researcher: As a teacher, it's a case of being willing to try out some new ideas and planning it out... that's the thing. O.K. I'm going to try these 3 activities today and the following day, I'm going to try the next 3. I wonder what you think of that.

Jan: I like it. I think it might work. It's worth a try.
Researcher: I brought this book (Tennis Drills) that you might want to use and you can borrow it.

Jan: Great. Maybe I can get Pat to get it in the library.

Researcher: Now some of the drills are too advanced, but I'm sure you'll be able to pick out and adapt what you want. This is my suggestion. You try and plan out Mondays lessons (what we've done).

Jan: You could start out by wanting them to punch the ball to their forehand....and a lot of kids didn't know the difference. Now why? So, maybe you could say, "I want you to try to work just on your forehand, but if it comes to your backhand, take it across from the backhand."

Researcher: Yes, you can give them a reason why we try and take it on the forehand -- moving your feet and keep moving.

Researcher: Move into position for forehand hit. I'd be most concerned about getting it over the net. They may also have a lot of fun. They might not.

Jan: It's worth a try. We've got to do something to get the boys back on track. I knew today when I turned my back, I could just feel it that things were going on. Gretchen was telling me a few things that she saw going on.

Researcher: The 3 kids at my end were working away.
Jan: But, I didn't even think the girls got along today as normal. Normally, they are doing everything and I could tell they were having problems today too.

(Interruption from fellow staff member) – Today was wild. They had a movie, short period. We lost 2 classes today. Everybody dressed up today.

Jan: Oh, they've been (school generally) crazy all week as far as working. See, Mary, we're all frustrated. To staff member - Mary has been seeing this frustration. The kids are frustrated too. I'll just try this then for Monday.

Researcher: Have you planned that (in terms of F.B.) before you go out.

Jan: It comes natural.

Researcher: What about the activities that you choose–have you planned them in your head or do you write them down?

Jan: They're in my lesson plan book.

Researcher: Oh! You've a lesson plan book.

Jan: Oh, yeah! I try to sit down what I'm going to introduce. How I'm going to set my drills usually, or I'll write a little note in my lesson plan book that I know what it means. I'm not detailed like the student teachers. I set down certain things that I want to cover that day and, for example, I've my kids all
listed who is with whom, and what court they are going to be on. Now, I knew I was going to go through scoring today and review the forehand and backhand, and then the serve and possibly just be able to hit the ball back and forth. I told them I wasn't concerned about scoring it (game). If they wanted to try it, fine, but my objective was to be able to serve the ball to the proper court and return it.

Researcher: I guess they were not able to do that.

Jan: No! They couldn't do anything today. I felt like just sitting them all down and putting 4 people on a court and then have the next 4 come up.

Researcher: Why didn't you?

Jan: That's problems, too. That's going to be just as bad because you're putting them down. But, if this doesn't work, I do not know where we go.

Researcher: Well, we'll just sit down Tuesday and figure out what's going to be happening. What I'd like you to do is using the book, plan out Mon/Tues/Wed. classes and the activities you're going to try and if they flop, then we need to sit down and discuss it some more.

Jan: Maybe we ought to keep the entire game within the service areas. Eventually you might even be able to play 4 on a court for doubles, staying within the service courts - playing the squares. Mon. - forehand, Tues. - backhand.
I think to be truthful, they can't handle serve. So, just the bouncing the ball for service.

Researcher: We need drills to have fun with.

Jan: That's the key, because you can tell they don't enjoy it.

Researcher: We need to figure out a series of drills that are fun and are useful. Right now, we need 1 ball between 2 and

Jan: O.K. We can get everybody on court but 2 kids. We can fit them in (4 on a court). I'll give it a try.

Researcher: Later you can have 1 good player against 2. It's getting one guy a lot of practice.

Jan: We'll try it on Monday. I'm going to do a warm-up also related to tennis. The students choose the warm-ups. They were tired from it...and fourth period was good today.

Researcher: Bouncing ball with racquet - then hitting the edge of racquet. Bouncing on ground, air, to left/right.

Jan: Put the kids out in front and let them lead. Some of them like to be leaders. Maybe I'll do warm-ups myself.

Researcher: You know them better than I do. If David is doing anything correctly, you might try and reinforce him. I'm not sure we've control of
of the R's (reinforcers), but at least we can try and get him to do something. He did bring his own racquet today.

Jan: Yeah. He didn't like the others, so he did have his own racquet.

Researcher: Work on those kinds of things. Maybe he can bring in some extra balls - even try and talk to him in a positive manner.

Jan: It's so hard.

Researcher: I suppose it is. We get involved emotionally and find it hard to see the good things in them (students) after a while. Maybe if you try and make an effort to try and pick out anything that he does well and compliment.

Jan: Compliment him on it. That's the only thing we can do. I don't know. He is a frustration. Everybody that has had him has had all kinds of problems. The big problem - he has been down at the guidance center. He lies. For example, the locker room incident - his comment was somebody pushed him in but there wasn't a person around him. He is always lying his way out of things. But that one he didn't lie out of. I don't know...he and Dwain. Dwain Cooper is another one. Oh! He is sneaky. You don't know the boys that well. Well, I'll try it Monday and I think I'll do a warm-up drill with them with balls

Researcher: O.K. I've got balls that I don't use.
Jan: I'd like that.

Researcher: Bonus points for balls. ½ grade for 3 balls.

Jan: This is where we get into trouble with parents--they call up saying that my child is saying he has to buy a racquet and balls and so I've got to repeat this to ensure no injustice is done to students.

Researcher: Make it clear--that's its bonus. Put their name on the ball and leave it in school. At the end of the tennis unit, they may take them home.

------New: Side (B) Audio-tape was turned at this point.

Jan: My job today was to get balls in proper, square (service box).

Researcher: I saw your drawing--it's good and it works. Could I ask you to give me what you did Mon/Tues/Wed? That's in effect your lesson I.

Jan: I think you'll need about 3 drills in one lesson.

Researcher: The people who most want to play are the least effective.

Jan: Problem is, we'll be lucky to get them into full court game. I've got to stop next week. It will interfere with Dick, Tom & Jim. I can't go more than that.
Researcher: So, if you wish to change your curriculum, you wouldn't be able to do it alone.

Jan: Only if I have the girls on my own.

Researcher: If you were in the gym, could you spend 6 weeks on volleyball rather than basketball and volleyball? All 3 have to rotate through.

Jan: I'm locked into the curriculum by the other staff.

Researcher: If the program was to be changed, what would need to happen.

Jan: Four of us would have to sit down and decide on schedule. Everything. That would make it kind of rough. We discussed this and we all agreed on 2 weeks (10 day units).

Researcher: Are you happy with how they are working out?

Jan: As a majority, yes. There is a problem with co-ed. That's new, but O.K. I'm not happy with the tennis. Flag football worked out really well. I was happy with that at the end. Some of the units could have been longer.

Researcher: 25 lessons - found for some activities - too long. It's high school.

Jan: Imagine middle school. Their attention span is not that long. It's amazing. They are not all out to do this activity.
Researcher: But, I think of English class everyday and are made to handle that.

Jan: You see, that's a different atmosphere. They are in a classroom setting. They are assigned seats. Ours (P.E.) is more of an open, free atmosphere.

Researcher: What about industrial arts?

Jan: Yes, but they are pretty much closed in. They are really strict down in those areas. Still a typical classroom setting, where we are - see what really hurts too is that some of the kids come from teams. O.K. Some of the teams - classes are left outside playing for games for English/Math.

Researcher: Why do they bring them out during these classes?

Jan: We wonder also. They do all kinds of things and the next period they come into gym and they don't want to do anything. They've had 40 minutes playing already. Most of those kids that were out we have the next period. Maybe the teachers get so tired of them they let them out. We've had that problem for a long time.

Jan: At study hall, everybody goes in and plays Mat Ball. When we have Mat Ball, it doesn't mean a darn thing because they've played it already.

Researcher: Let me show you the Mat Ball (data).
Jan: O.K.

Researcher: These are 3 students data. This is student 1 and 3. They had 108 x 15 seconds of wait. That means they didn't touch the ball during those intervals. 8 & 10 intervals touch

Jan: That was wasted. It was a wasted day. When they get to P.E. class they don't want to play volleyball because they've played it in study hall for 40 minutes. They've kind of hurt us. The teachers let me "play", do what they want and when the students come in to us, that's what they think they are going to do. Then we try to go ahead and structure it and they (students) don't like to be structured, because they've had that freedom in the play period and often in the classroom. So, you're fighting so many variables. You're fighting a lot of things when you get those kids from one class to another. Some classes may allow kids to chew gum. In our class they cannot chew gum - safety. We fight gum constantly. We expect certain things from them but that behavior is not expected from other teachers (specific "teams"). Kids are mixed up - can do it here but not there.

Researcher: What is the main frustration in your teaching?

Jan: I don't know (pause). I get frustrated when I see teachers doing things against school policy (outside to play), but it's not enforced. It makes it hard for us. These kids have been
playing around for 40 minutes and when we get them and try to teach them, to get them into a "play type" thing because it's physical education - it's supposed to be fun. Your teaching and the kids don't want to learn. They think if they can "play" there, they can play here.

Researcher: I wonder what the kids expect from it (P.E.)?

Jan: I don't know. I don't know. It would be interesting to find out.

Researcher: I gave those kids some questionnaires. Did they give them back to you?

Jan: No. Were they supposed to? I don't know what they expect. I really don't know but its frustrating. It really is, when you know what's supposed to be going on but it doesn't go on... It's interesting you just keep going and hope you can figure something out. But, I'm real frustrated with the tennis.....The kids don't appreciate what they have (Re #7 balls, etc.) Once it goes, we are not going to have them replaced.

Researcher: Oh, well -- I'll bring in my few balls anyway.

Jan: That's nice. Thank you. I'll try that and we'll see what happens on Monday.

Researcher: I have a file and some other books if you need them.
Jan: The only books we have are on fundamentals, no real drills.

Researcher: Core of problems in physical education -- not enough of fun drills. Puts pressure on me to find some more drills. Your teaching track next.

Jan: Yes. It will involve 3 teachers. Rotate. But again we don't have a lot of time. Instruction in gym and practice on the outside. We found that this has worked the best. Equipment is part of the problem.

Researcher: It gets easier the more equipment you have. It's nice to have the equipment. You can do with little equipment and the access to resources.

Jan: That's what I think the universities need to get out - resources to the public school teachers. I never see in the Ohio School Athletic Association book that there are certain things you could look up for volleyball. Perhaps that's where we've failed as professionals.

Researcher: We have failed - to give student teachers

Jan: Great. I'll see what I can find also. May Dr. Burton/Dr. Jackson. I'll look at the book and see what's useful this weekend.

Researcher: I try and adapt the drills to suit me. Some are useful.
Jan: I'll try it and see what happens. See you on Tuesday/Wednesday. O.K.?
APPENDIX F

PHYSICAL EDUCATION CLASSES OBSERVED FOR EACH TEACHER DURING THE STUDY
Table 19

Distribution of the 15 Observed Physical Education Lessons With the Fifth Grade Class* - Teacher A

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Venue</th>
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<tr>
<td>April 1</td>
<td>Square Dance</td>
<td>Gym</td>
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<tr>
<td>2</td>
<td>Square Dance</td>
<td>Gym</td>
</tr>
<tr>
<td>5</td>
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<td>Gym</td>
</tr>
<tr>
<td>6</td>
<td>Square Dance</td>
<td>Gym</td>
</tr>
<tr>
<td>12</td>
<td>Matball</td>
<td>Gym</td>
</tr>
<tr>
<td>22</td>
<td>Fitness testing</td>
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<td>Fitness testing</td>
<td>Field</td>
</tr>
<tr>
<td>May 3</td>
<td>Fitness testing</td>
<td>Gym</td>
</tr>
<tr>
<td>6</td>
<td>Fitness testing</td>
<td>Gym</td>
</tr>
<tr>
<td>10</td>
<td>Square Dance</td>
<td>Gym</td>
</tr>
<tr>
<td>13</td>
<td>Square Dance</td>
<td>Gym</td>
</tr>
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<tr>
<td>June 3</td>
<td>Playground Games</td>
<td>Gym</td>
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</tbody>
</table>

*The fifth grade class had Physical Education four times a week early in the semester. They had Physical Education during their Music classes. At the end of the semester, they had Music four days a week and no Physical Education. The fourth grade class was doing the same units as fifth grade and so they were observed for the last two observations.
### Table 20

**Distribution of the 22 Observed Physical Education Lessons With the Seventh and Eighth Grade Students - Teacher B**

<table>
<thead>
<tr>
<th>Date</th>
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<td>June 9</td>
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Table 21

Distribution of the 30 Observed
Physical Education Lessons With the
Tenth and Eleventh Grade Students – Teacher C

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<td>7</td>
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<td>Gym</td>
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<td>Badminton</td>
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<td>Badminton</td>
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<td>Badminton</td>
<td>Gym</td>
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<td>Badminton</td>
<td>Gym</td>
</tr>
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<td>19</td>
<td>Badminton</td>
<td>Gym</td>
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<td>Gym</td>
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<td>Badminton</td>
<td>Gym</td>
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<td>22</td>
<td>Badminton</td>
<td>Gym</td>
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APPENDIX G

SUMMARY OF TEACHER MANAGERIAL AND INSTRUCTIONAL BEHAVIOR DATA
## Table 22
Percentage of Occurrence of Teacher Behavior - Teacher A

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<tr>
<th>Categories</th>
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<td>Conference Two</td>
<td>Conference Three</td>
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*Data not available*
### Table 24

Percentage of Occurrence of Teacher Behavior - Teacher C

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<th>Conference One</th>
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APPENDIX H

SUMMARY OF STUDENT TASK ENGAGEMENT DATA
Table 25  
Percentage of Engagement and Non-Engagement  
of Target Students - Teacher A  

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Abs. - student was absent.
Table 26

Percentage of Engagement and Non-Engagement of Target Students - Teacher B

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Abs. - student was absent.
Table 27

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Abs. - student was absent.
APPENDIX I

SUMMARY OF CLASS CONTEXT DATA
### Table 28

Mean Percentage of Occurrence for Context Level Categories During Baseline and Intervention — Teacher A

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<td>Evaluation (E)</td>
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Table 29

Mean Percentage of Occurrence for Context Level Categories During Baseline and Intervention - Teacher B

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Table 30
Mean Percentage of Occurrence for Context Level Categories During Baseline and Intervention - Teacher C

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LIST OF REFERENCES


Baer, D.M. Perhaps it would be better to not know everything. Journal of Applied Behavior Analysis, 1977, 10(1), 167-172.


Dodds, P. and Rife, F. Revitalizing inservice education: Physical education models that work. Conference at University of Massachusetts, June, 1983.


Emmer, E.T. and Evertson, C.M. Effective management at the beginning of the school year in junior high classes (R & D Rep. No. 6107). Research and Development Center for Teacher Education, The University of Texas at Austin, Austin, Texas, 1980.


Fisher, H. Expectations for leadership. Educational Leadership, 1959, 16(8), 504.


Good, T.L. Teacher effectiveness in the elementary school: what we know about it now. Journal of Teacher Education, 1979, 30, 52-64.


Hawkins, R.P. and Dotson, V.A. Reliability scores that delude: An Alice in Wonderland trip through misleading characteristics of inter-observer agreement scores in interval recording. In E. Ramp and G. Semb (Eds.), Behavior analysis: Areas of research and applications.


Heller, M. and White, M. Rates of teacher verbal approval and disapproval to higher and lower ability classes. *Journal of Educational Psychology*, 1975, 67, 796-800.


Kemmis, S. Research on action research: An interim report to the educational research and development committee. Deakin University, Australia, 1980.


Quarterman, J. Descriptive analysis of physical education teaching in the elementary school. (Doctoral dissertation, The Ohio State University, 1977). Dissertation
Abstracts International, 1978, 39, 754A.


Tuckman, B.W. and Oliver, W.F. Effectiveness of feedback to teachers as a function of source. *Journal of Educational Psychology*, 1968, 59(4), 297-301.


