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THE OHIO STATE UNIVERSITY, PH.D., 1979

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1979
EFFECTS OF ENTHUSIASM TRAINING ON SUBSEQUENT
TEACHER ENTHUSIASM BEHAVIOR

DISSERTATION

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

By

Amos Rolider, B.A., M.Sc., M.A.

* * * * * *

The Ohio State University
1979

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Advisor
School of Health, Physical Education and Recreation
In Memory of my Father, Yehoshua, and to my Mother, Helga,
this Study is Dedicated
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Thank you all for making my dream come true.
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CHAPTER I
INTRODUCTION

It wasn't until the 1960s that researchers turned their attention to analyzing and counting teacher behaviors to see if a particularly high count of one kind of behavior was related to student achievement. Most researchers in the 1960s began to look less at presage variables (Dunkin and Biddle, 1974) such as the teacher, social class, age, sex and began looking more at process variables such as teacher's classroom behavior, student classroom behavior and the interaction of the two. (Flanders, 1960; Medley and Mitzel, 1959; Soar, 1973; Sprague, 1971) Furthermore, promising, well designed research investigating the relationship between process and product variables, (e.g. Berliner and Tikunoff, 1976; Brophy and Evertson, 1974; Stallings and Kaskowitz, 1974; Berliner, 1976; McDonald and Elias, 1976; Good and Grouws, 1977) had been underway for several years. One outcome of this recent effort has been the isolation of patterns of behavior "that make a difference." Said another way, this research supports the contention that some teacher behaviors are clearly related to student achievement.
In their effort to find out which teacher behaviors make the greatest difference, Rosenshine and Furst (1971), reviewed fifty studies regarding the relationship between process variables and product variables. This review revealed that certain teaching behaviors do seem to be consistently associated with student learning. In spite of the criticism (Flanders, 1973; Gall, 1973; Heath B. Nielson, 1974) of their research findings this review provides (Cruickshak, 1975) some tentative hypotheses upon which teacher education programs can be built, some testable hypothesis for researchers in physical education, and some variables (teaching behaviors) for the evaluation of teaching.

Rosenshine and Furst (1971) presented their findings in three groups. The first group of five teaching behaviors or variables which seem to have the most influence on student outcomes includes: clarity (of teacher's presentation), variability, enthusiasm, task-oriented and/or businesslike behavior, and provision of opportunity to learn what is to be learned.

This study addressed enthusiasm behavior as the area of investigation. Gage (1972) indicated that enthusiasm is one of the very few characteristics of teaching that can be identified as important in helping students to achieve. Siedentop (1976) stated:
Few would argue with the assertion that enthusiasm in teaching is important. A teacher's enthusiasm about the subject matter, the student's and the act of learning, provides an important vehicle for communicating many of the messages listed earlier (p. 127) (messages students gather from the learning environment).

Even though enthusiasm is considered to be an important characteristic of effective teaching (Berliner and Tikunoff, 1976; Evertson and Brophy, 1978) three major problems are immediately apparent. The first is a definitional one. The literature contains many different definitions for teacher enthusiasm. The majority of definitions are combinations of high inference adjectives such as "stimulating", "exciting", "interesting", etc. (Barr and Emans, 1930; Wallen, 1966; Young, 1973; McMillan, 1976; Pohlman, 1976).

In almost all of these studies, the adjectives that communicate enthusiasm were chosen by the researchers themselves (Ryan, 1960; Wallen, 1966; Young, 1973; Brown, 1975) or by expert opinion (Collins, 1976). There was no attempt to consider the pupils' opinions as to what constituted enthusiastic teaching behavior. The second problem concerns the measurement of teacher enthusiasm. Although measurement of other teacher behaviors has increasingly changed from high inference measures (rating) to lower inference measures (systematic observation), the main measures of enthusiasm have been supervisory ratings (Barr, 1961; Medley and Mitzel, 1959), student questionnaires (Solomon, Bezdick, 1963), observer rating and attitude scale (Mastin, 1963;
Collins, 1976), student ranking on Q sorts (Wallen, 1966) and researcher scales (McDaniel, 1974). There is no indication in the literature of the use of a descriptive teacher observation instrument which can provide the researcher with a reliable picture of the ongoing enthusiasm of teachers.

The third question centers on whether training can change one's enthusiasm behavior. With the exception of Collins' recent study (1976), research on teacher enthusiasm has investigated existing levels of behavior with no attempt to manipulate the dependent variable (enthusiasm behavior). The reasons for this are unknown. One might hypothesize the following as possible reasons for the absence of training intervention to increase level of enthusiasm:

1) Enthusiasm is thought to be inherent therefore it cannot be taught or learned

2) Enthusiasm belongs to the affective domain, and instruction in this domain is too complicated and potential for success is very limited.

3) Past definitions of enthusiasm contained high inference terminology such as: "energetic", "stimulating", "expressive", "warm", "supportive", "dynamic", which makes it almost impossible to train teachers to exhibit such abstract qualities.

The past eleven years, research in the field of applied behavior analysis has demonstrated that many behaviors are significantly changeable provided that the behavior is defined objectively and measurably and that the researcher provides the appropriate contingencies. Using an applied behavior approach, research has shown that it is possible to train teachers to use verbal reinforcement to decrease
disruptive behavior (Ringer, 1973), to modify teacher attention to appropriate child responses (Cooper et al, 1970), to train teachers in using various types of feedback to increase appropriate behavior (Greenwood et al, 1977), and to train teachers to use applied behavior techniques as teaching skills. (Clark and MacRai, 1976)

In physical education a number of studies using these techniques has shown that preservice and inservice teacher behaviors have been modified. For example, Rife (1973) used a package intervention to modify student teachers' behaviors. Hughley (1973) monitored the student teachers' rate of verbal feedback including skill feedback statements and behavior interactions. Hustlar (1976) trained cooperating teachers in the use of applied behavior analysis.

Encouraged by this research, the investigator of this study made a serious attempt to refute the previously mentioned assumptions, through a systematic and objective approach in defining and measuring enthusiasm. In addition, a training intervention to increase level of enthusiasm behavior of preservice and inservice teachers was developed and tested.

Definitions of teacher enthusiasm were developed through an extensive survey of pupils, teachers and experts in teacher education who were asked to express their opinions regarding behavior indicants of enthusiastic teachers. A descriptive observational instrument was designed to code the low inference behavioral indicants of enthusiasm and allowed
the observers to obtain reliable data for the subsequent experimental manipulation. A training intervention designed to increase the behavioral indicants of teacher enthusiasm was developed by the researcher.

**Statement of Problem**

The purposes of this experimental study were as follows.

1) to identify and define teacher behaviors that describe teacher enthusiasm in low inference and measurable terms

2) to develop a reliable teacher observation instrument for the purpose of measuring nonverbal and verbal behaviors that communicate teacher enthusiasm

3) to develop a training intervention that would enable preservice physical education teachers to increase their levels of enthusiasm

4) to develop a questionnaire for obtaining student rating of the behavior indicants that communicate enthusiasm performed by their teacher

5) to assess the relationship between student rating and the objective data obtained by the descriptive teacher observation instrument regarding the various behavior categories that communicate enthusiasm

6) to assess the causal relationship between the independent variable (training intervention) and the dependent variable (enthusiasm behavior)

There were specific questions that this research attempted to answer through the analysis of data sources employed in this study.

1) Can enthusiastic teacher behavior be defined in measurable terms and in a reliable way?

2) Can the descriptive teacher observation instrument measure reliably the behavior categories (nonverbal and verbal behaviors) that communicate enthusiasm?
3) Is it possible to train preservice physical education teachers to increase their level of nonverbal behaviors which communicate enthusiasm?

4) Is it possible to train preservice physical education teachers to increase their level of verbal behaviors which communicate enthusiasm?

5) Is it possible for preservice physical education teachers to change their voice projection (voice inflection)?

6) Is it possible to train preservice physical education teachers to increase their level of overall enthusiasm?

7) Is there a correlation between teacher's enthusiasm performance, as measured by the objective instrument, and its rating by students expressed in the written questionnaire?

8) Does the above mentioned correlation vary with grade level of the responding students (elementary, junior high and high school students)?

**Limitations of the Study**

This study was limited by the following factors.

1) The study was limited to the participation of 15 preservice teachers from The Ohio State University Physical Education Teacher Preparation program during the winter of 1979 and the public schools in which the students taught and one inservice teacher currently teaching in the Columbus area.

2) The subject area investigated was limited to physical education in grades 4th through 12th.

3) The study was limited to the observation of selected and precisely defined teacher behaviors.

4) The length of the training intervention was limited to 14 hours per intervention during the Winter Quarter of 1979.
Assumptions of the Study

The following were assumed to be true, relevant and fundamental to this study.

1) The teacher behaviors in this study were observable and measurable and that the observers who recorded those behaviors did so in accordance with the behavioral definitions provided to them.

2) Teacher behaviors observed, within the limitation of the study, were representative of each subject's actual day to day teaching behavior.

3) The observed behaviors of the subjects participating in the study were assumed to be a representative sample of behaviors normally occurring within the limits of the natural setting.

Definition of Special Terms

Several terms employed throughout this study will have restricted and rather specific meanings. Not included within those special terms are the behavioral definitions used in the observation instrument for the study. The reader is directed to Chapter III (Pages 45-52) for those definitions. Other terms used frequently in the study are defined below.

Preservice Physical Education Teacher: Refers to students currently enrolled (at the time of this study) in The Ohio State University Physical Education Teacher Preparation Program.

Inservice Physical Education Teacher: Refers to teachers who are certified K-12 and are currently teaching physical education in the state of Ohio.

Interval Recording: The observational recording of one of several predefined climates, verbal behavior, or non-verbal behavior within a specified period of time.
Dependent Variable: The dependent variables being studied were the selected non-verbal and verbal teaching behaviors that in various combinations describe enthusiasm behavior.

Independent Variable: The independent variable for the present study was training intervention consistent of 14 hour mini-course.

Statistical Significance: The statistical level indicating the probability of difference between mean percentage of baseline behaviors and the mean percentage of behaviors occurring during intervention. The statistical level chosen was p<0.05.

Low Inference Behaviors: Those teacher behaviors that may be objectively observed and counted.

High Inference Behaviors: Those teacher behaviors that necessitate subjective judgment or rating for identification.

Teacher Verbal Enthusiasm: refers to the combination of single verbal variables, low inference teacher behaviors that when exhibited, communicate measurable levels of verbal enthusiasm. In this study, verbal enthusiasm included the following behaviors: General positive behavior and skill feedback, specific positive behavior and skill feedback, general and specific positive feedback followed by corrective statement and positive hustling.

Teacher Non-Verbal Enthusiasm: refers to combination of single nonverbal low inference teacher behaviors that when exhibited communicate measurable levels of enthusiasm. In this study, nonverbal enthusiasm behavior included the following behavior: smiling, gestures, laughing, touching, teacher participation in the activity and teacher modeling.

Teacher Enthusiasm: Refers to combination of non-verbal and verbal low inference teacher behaviors that when exhibited, communicate measurable levels of enthusiasm. In this study, enthusiasm behavior included the following behavior: joking, smiling and laughing, general positive behavior and skill feedback, specific positive behavior and skill feedback, general and specific positive feedback followed by corrective statement, positive hustling, gestures, touching teacher modeling, and teacher participation in the activity.
Summary

Within this chapter a rationale was developed for the importance of defining teacher enthusiasm objectively and in measurable terms. Research suggesting a possible relationship between enthusiasm and student achievement was cited.

A rationale was developed also for training intervention designed especially for training preservice and inservice physical education teachers to increase their enthusiasm. A brief overview of teacher effectiveness research dealing with enthusiasm behavior was presented. The purpose of the study and the specific questions to be addressed in the later chapters were enumerated. Limitations, assumptions and special terms were carefully delineated.

A review of the related literature critical to the implementation of this study will be found in Chapter II. This review will focus on the topics below:

1) A brief historical overview of teaching effectiveness research

2) Teacher effectiveness studies that deal with the possible relationship between process and product variables

3) The importance of teacher enthusiasm

4) Definition of teacher enthusiasm

5) Correlational and experimental studies that deal with teacher enthusiasm

6) Training interventions to increase level of enthusiasm
CHAPTER II
REVIEW OF RELATED RESEARCH

The purpose of review of literature is to organize the existing knowledge in the field of interest, demonstrating what is known, what is unknown and how the current research fits into a larger picture. (Lindvall, 1959, p. 178)

The review of research accepts the above statement as a guiding principle. As in focusing a microscope, a series of stepdown stages have been incorporated that move from a global view on past research in teacher effectiveness through an intermediate view on process-product research.

The structure of this chapter includes three major sections and a summary. The first section deals with historical overview of teacher effectiveness research in the last 30 years. Section II discusses teacher effectiveness studies that deal with possible relationships between process and product variables. This section focuses mainly on the review of process-product research that has been done by Rosenshine and Furst. (1971) The third section reviews some of the more relevant studies in teacher effectiveness research that concentrate mainly on teacher enthusiasm as an area for investigation. The final section summarizes the previous sections and highlights the need for the present investigation.

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Studies of teacher characteristics have abounded since the 30's and now number in the thousands. In spite of this large implied expenditure of time and money, little is known about what constitutes desirable teacher characteristics or, especially, about the influence of teachers on student performance. (Averch, et. al. 1972:52)

Several reasons have been offered by critics for the failure of the early research effort. Dunkin and Biddle (1974) stated that the reasons for this unfruitful research were:

1) Failure to observe teaching activities.
2) Theoretical impoverishment.
3) Use of inadequate criteria of effectiveness.
4) Lack of concern for contextual effects (Dunkin and Biddle (1974, P.13).

This early research focused almost exclusively on administrative rating as means for evaluating teacher effectiveness. Earlier studies seem to accept that the outcome of teaching was supervisor or administrator approval or at least a proxy for something else that was important. A "good" teacher, an effective teacher was one that received high rating by the principal on an evaluation form. (Medley and Mitzel 1950). Generally, this research reported that "good" teachers are friendly, cheerful, sympathetic, and morally virtuous (cf. Getzel and Jackson, 1963)

Introduction of the Observational Schedule and Record Instrument (Medley and Mitzel, 1958), Flanders Interaction Analysis Category by Flanders (1960) and the work of B. O.
Smith (1960), marked the beginning of change which since has grown widely and shown some relationship with educational outcomes. A large percentage of the studies done within the past 15-20 years has involved some adaptation of these observation systems. According to Dunkin and Biddle (1974), this shift in emphasis from an earlier interest in teacher effectiveness to a more extensive focus on the process of teaching is partially due to the reviews of researchers such as Barr (1961), who painted a bleak picture of the success of the former emphasis. It wasn't until fairly recently that relationships were observed between what teachers did (process variable) and what students learn (product variable).

Review of Process-Product Research in Teacher Effectiveness

Compared to the great bulk of effectiveness research focusing upon teacher characteristics, a relatively small number of studies attempting to link teacher behaviors with student outcomes has been conducted. In fact, Rosenshine and Furst (1971) identified only fifty such studies at the beginning of this decade. Rosenshine and Furst (1971) were able to synthesize the results of the fifty studies into eleven complex categories of teacher behaviors which appear to be significantly related to student achievement. Since many of the studies employed multiple measures of teaching behaviors, the categories exhibit a relatively high incidence of overlap in terms of supportive studies. The eleven de-
Derived categories have been further broken into a principle set of five behaviors construed to have strong research support and a secondary set of six behaviors judged to have weaker support. The first set of five behaviors in decreasing order of apparent strengths are the following: clarity, variability, enthusiasm, task oriented and/or business like behaviors; and students opportunity to learn criterion material. The six weaker but promising behaviors are in the following order: use of student ideas and general indirectness, criticism, use of structuring comments, types of questions, probing and level of difficulty of instruction. However, as is typical of most educational research findings, those offered by Rosenshine and Furst have been the subject of professional criticism. According to the critics, (Flanders 1973, Gall 1973, Heath and Dielson, 1974), one major shortcoming was that Rosenshine and Furst assembled and reviewed studies that they said investigated the same thing for example, teacher enthusiasm, when in fact the separate studies investigated different or at least somewhat different things. Thus, concluded the critics, it could not be said that enthusiasm is a characteristic of a good teacher. The difference of opinion stems from the fact that at present, there is not a universally acceptable definition of what constitutes teacher enthusiasm. Rosenshine and Furst viewed enthusiasm as a multidimensional concept which included several teacher behaviors. They pulled together
and saw as one, studies which apparently defined enthusiasm as a) active b) varied in procedure c) stimulating d) original e) alert f) attractive g) dramatic and h) use of humor. Are these behaviors all synonymous with teacher enthusiasm? Rosenshine and Furst thought so; the critics thought not.

For reader convenience, each of the behavior categories established by Rosenshine and Furst (1971) will now be presented, in order of apparent decreasing importance. A brief description will be provided for those categories which comprise the primary set of five behaviors which these authors hold to have strong research support. Since the enthusiasm category is central to this investigation, it will be examined in detail following the initial discussion of all five.

Based upon results from the work of Belgard, Rosenshine, and Gage (1968); Chall and Feldman (1966); Fortune (1967); Fortune, Gage, and Shutes (1966); Hiller, Fisher, and Kaess (1969); Solomon, Bedek, and Rosenberg (1963); and Wright and Nuthall (1970), Rosenshine and Furst (1971) selected teacher clarity as the teacher performance variable with the strongest empirical link with student achievement. In each of these studies, the original investigators found a statistically significant relationship between a measure purporting to reflect teacher clarity and at least one student achievement measure. Further, four other studies, Anderson and Walberg
(1968); Fortune (1967); and Solomon, Bezdek, and Rosenberg (1963), found a statistically significant positive correlation between a concept associated with clarity, termed organization, and a student achievement variable.

The second behavior with strong research support, variability, exhibited a statistically significant relationship with a student achievement measure in three studies (Anthony, 1967; Furst, 1967; and Lea, 1964). Similar results were obtained for another construct, flexibility, in four studies (cf. Fortune, 1967; Solomon, Bezdek, and Rosenberg, 1963; Torrance and Parent, 1966; and Walberg, 1969). While Rosenshine and Furst (1971) subsumed flexibility with the variability classification, they were quick to point out that the former is not to be equated with simple variation in teacher behavior. Instead, it implies change of a particular kind. In fact, they explicitly point out that research employing flexibility as an index of the frequency of simple variations in teacher behavior has not resulted in significant findings (cf. Flanders, 1972; Snider, 1966; Soar, 1966; and Vorreyer, 1965).

Support for the relevance of a third variable, enthusiasm, comes from discovery of a statistically significant correlation between a measure representing teacher enthusiasm and one indexing student achievement in five studies (Conners and Eisenberg, 1966; Fortune, 1967; Kleinman, 1964;
Solomon, Bezdek, and Rosenberg, 1963; and Wallen, 1966). A close examination of these five studies is presented later. Similarly, five studies gave correlational support for a fourth variable, task oriented and/or business like behavior (Chall and Feldman, 1966; Fortune, 1967; Kleinman 1964; Torrance and Parent, 1966; and Wallen, 1966).

The fifth behavior associated with achievement, student opportunity to learn criterion material, marshalled support in three studies (Husen, 1967; Rosenshine, 1968; and Shutes, 1969). A unique problem associated with this category lies in its label. Note that while the category implies teacher action, it is more descriptive of an environmental condition for students than an overt teacher behavior.

Besides the five teacher behaviors cited above, Rosenshine and Furst (1971) also identified six more with somewhat reduced empirical support. The latter six include use of student ideas and general indirectness, criticism, use of structuring comments, types of questions, probing, and level of difficulty of instruction. Since they are not directly related to this investigation, details regarding their substantive outcomes are omitted.

Although Rosenshine and Furst leveled mild criticism at the methodology embodied in most of the research they reviewed, they did not approach the sharpness or detail of criticism put forth by Heath and Nielson (1974) in a subsequent review
of the same material. Among the charges leveled by the latter authors, the most damaging include: 1) Many operational definitions used in the behavior studies do not correspond well with the identified independent variable, 2) Randomization procedures are largely ignored, 3) In most cases, statistical assumptions underlying data analyses are unchecked, and 4) Rosenshine and Furst are accused of ascribing significance in some studies wherein the original author did not. Obviously, this attack strikes at the heart of each of the studies.

Methodological Issues in Teacher Enthusiasm Studies

Importance of Teacher Enthusiasm:

Since very early in educational research on teacher behaviors, teacher enthusiasm was identified as a possible desired characteristic for effective teaching. In 1948, A.S. Barr directed a project to summarize the then state of art in research in teacher effectiveness. In his summary there was a great deal of agreement among the research studies in identifying thirteen characteristics of an effective teacher. Among these characteristics there was one referred to as "buoyancy" which its definition included terms such as "optimism", "enthusiasm", "cheerfulness", "sense of humor" and talkativeness." The "buoyancy" received positive correlation with student teaching ratings, inservice ratings, pupil growth and consensus of opinion. Ryans (1960) studied 6000 teachers
over a six year period and carried out approximately 100 research projects. (It is important to point out that Ryans used for his projects highly skilled and trained observers along with ratings, questionnaires, surveys and interviews.) One of the teacher behaviors that was repeatedly observed as an important one, was "Z pattern" enthusiasm which focused on stimulating, imaginative verses dull, routine teacher classroom behavior. The "Z pattern" was found out to be significantly related to productive pupil behavior in the secondary school. Mastin (1963) examined the effect of teacher enthusiasm on student achievement in social studies. He trained 20 teachers to present two prepared, illustrated lecture lessons, one taught with an indifferent attitude, the other with an enthusiastic attitude. A test of a significance (p<0.1) revealed that the class mean for learning facts was higher for lessons taught with teacher enthusiasm than for those where the teacher was indifferent. When students attitude toward the teacher's work was examined, the lesson and "wanting to learn more about the subject matter" were more positive (p<0.1) when taught by enthusiastic teachers than by unenthusiastic teachers. The same method of investigation was used by Armento (1977), whose conclusions were similar to those noted above for Mastin (1963). Ausubel (1964) and Stephens (1967) indicated that some form of enthusiasm (i.e."communicate a sense of excitement", "lively interest of teachers") is essential for teachers if they want
to be effective. Gage and Berliner (1975) in their book *Educational Psychology*, selected studies on teacher enthusiasm to emphasize the importance of showing enthusiasm while lecturing. Hertz (1972) suggested that enthusiasm is important for meeting educational goals and maintaining student interest. In 1974, JoAnn Gullen, a member of the National Advisory Council on Vocational Education, listed five major problems related to student learning. One of those problems was lack of teacher enthusiasm. Nine years earlier, Haberman (1975) also called for emphasis to be placed on training teachers to be more enthusiastic. In his book *Do Teachers Make a Difference?*, Mood (1970) listed teacher attributes that he felt were as important to learning as is the teachers' verbal ability. In this list he included the following: expressiveness, good humor, enthusiasm, friendliness, imaginativeness, an ability to dramatize. Soar (1973) reported that more recent findings of ratings of teachers have been much more specific in identifying teacher behaviors such as "clarity of expression or enthusiasm" and that the results have most often been positive.

The importance of teacher enthusiasm is not only based upon ranking of supervisor and opinion of experts, but also on the results of correlational and experimental research. As mentioned before, Rosenshine and Furst (1971) in their review of over 50 process-product studies, identified eleven teaching behaviors which were positively related to
student achievement and student attitudes. Five studies in this review were dedicated to teacher enthusiasm. The first among the five studies was done by Solomon, Bezdik and Rosenberg in 1963. They studied 24 college and university teachers who taught evening college courses in Introductory American Government. They analyzed the relationships between teacher behaviors, class, student characteristics and profiles of teacher effectiveness. Two criterion measures were used: 1) factual gain, and 2) comparison gain. The data collected were based on a student questionnaire; ratings by 38 trained raters observing the same two lessons and a teacher questionnaire. This total of 169 scores were factor analyzed and the relationship between them and student gain was studied. Comparison gains were significantly related to the factor "energy" whose descriptors were: enthusiasm, relaxation and mobility. Clarity, whose indicants were expressiveness and enthusiasm, had a significant relationship (.61) (.68) with factual gain. In explaining their results, Solomon et. al. made the following observations: 1) teachers who are stimulating and exciting, encourage students to go beyond the facts, 2) teachers may be presenting the subject in an interesting and exciting manner without dwelling on collection of facts. In a follow-up study Solomon (1969) obtained similar results.

The second study reviewed by Rosenshine and Furst (1971) was a study done by Fortune (1967) which focuses on generality
of presenting behavior in teaching", this study included student teachers who were teaching 4th, 5th and 6th grades special classes in English, Mathematics and Social Studies. They were instructed to teach three 10-15 minute lessons in the content areas. After each lesson the student teacher received two independent supervisory ratings based on an objective check list. For the purpose of this study, the results on the dual: "stimulating alert-apathetic" and "attractive unimpressive" are reported here. The teachers identified as more stimulating ($r=.62$)alert($r=.55$)and attractive($r=.61$)had pupils who achieved higher scores in social studies, mathematics and english. These were significant at the .01 levels.

The third study (Kleinman,1964) investigated the relationship between behaviors of 23 teachers and achievement of 7th and 8th graders. The observers used by Kleinman were trained to use the Rayans instrument. The ratings on enthusiasm (defined as stimulating and original) were significantly related to at least one measure of student achievement. The significant correlation ranged from .37 to .56.

Connors and Eisenberg's (1966) study was the fourth study reviewed by Rosenshine and Furst (1971). They concluded that teachers that were ranked higher on categories such as: "Active" and "varied in procedure", produced better achievements with students.
The last study reported by Rosenshine and Furst has been done by Wallen (1966) who examined the relationships between teacher characteristics and student behaviors. Wallen used four variables: control, affiliation, stimulation and achievement oriented, as possible correlates to student achievement. Stimulation was described as the degree to which the teacher is stimulating, interesting, activity arousing to her pupil. The results produced some tentative conclusions. The one related to enthusiasm was: "achievement gains in reading vocabulary, appear to be positively correlated with the extent to which the teacher is viewed as stimulating teacher by observers" (Wallen and Wodke, 1963, P.58). Wallen also concluded that teacher characteristics such as: "stimulating", "intellectually effective", "warm", "supportive" are desirable if one is interested in the following pupil outcome: gaining in achievement, liking school, lowering anxiety, and increasing divergent thinking.

In his book *Teaching Behaviors and Student Achievement*, Rosenshine (1971) concluded that "the low inference correlations of enthusiasm are difficult to determine but it is possible that variables such as movement and gestures comprise part of enthusiastic behaviors" (Rosenshine, 1971, P. 148). A few studies support this interpretation. In the study by Solomon et. al. (1963) observer rating on the amount of gesturing loaded on the same factor as observer rating of amount
of enthusiasm. Although movement and gesture are probably not the only low inference behaviors which comprise enthusiastic teacher behavior, the additional low inference correlations remain to be determined.

An experimental study entitled "Audience Recall as a Function of Speaker Dynamism" was done by Coats and Snidgens (1966). They asked two graduate students to lecture to four different classes. The lectures, based on interaction analysis had identical content and lasted approximately 10 minutes. Each speaker delivered four speeches. Two of them were dynamic ("delivered from memory, with much vocal inflection, gesturing, eye contact, animation") and two were static presentations ("read the speech with good diction and sufficient volume, no gestures or direct eye contact, and hold inflection to a minimum"). After each lecture, subjects (n=184) responded to a dynamism scale (Anderson, 1961) and a ten-question multiple choice test. The comparison used to test the difference between the dynamic and static presentation, showed a significance at the .001 level. The students remembered more from the dynamic lecture.

In addition to research results indicating the positive relationship between teacher enthusiasm and student achievement, researchers also have investigated the relationship between teacher enthusiasm and students attitudes (Aiken, 1970; Wallen, 1966; McConnel, 1977; and Pholman, 1976). Pholman,
for example, studied the relationship between college students' perceptions of teacher characteristics and student outcomes. Teacher characteristics investigated were: clarity, student involvement, subject relationships, and knowledgeable enthusiastic presentation. Information on the teachers' characteristics was obtained by using the Teacher Classroom Behavior Instrument (TCBI). Students' attitudes toward the course was measured by using the Measure of Affective Orientation Toward the Subject (MAOTS). Pohlman's findings show clearly that items of teacher clarity and enthusiasm were significantly correlated with positive changes in students' attitudes toward the course.

Definitions of Teacher Enthusiasm

The previous section showed that teacher enthusiasm is widely identified as an important teacher characteristic. It also showed that the term "teacher enthusiasm" still lacks a commonly accepted definition. Generally, definitions can be classified as high inference or low inference. (Gage, 1969; Rosenshine, 1970). The term inference refers to the process intervening between the objective behavior seen or heard and the coding of this behavior on an observational instrument. Low inference behavior focuses upon specific denotable relatively objective behaviors such as; smiling and teacher gives specific skill feedback. Low inference behaviors are usually recorded as frequency counts. High inference behavior
lacks the characteristic of low inference and usually necessitate subjective judgment or rating for identification. Examples for high inference behaviors are: "enthusiasm", "clarity of presentation" and "dynamic teaching."

In most of the studies reviewed in this chapter, high inference terms were used by the researchers to define enthusiasm. For example, Rayons (1960), Wallen (1966), Fortune (1967) and McConnel (1977 used the term "stimulating"; Doerr (1974) and Pholman (1976) used "dynamic"; Solomon (1966), Fortune (1967) and Collins (1976) included the terms "energetic", "active" and "alert" in their definition of enthusiasm. Other terms used in association with enthusiasm were "exciting" (Young, 1973), "interesting" (Brown, 1977), "original" (Kleinman, 1964) and "acceptance of ideas and feelings" (Smidgens, 1966 and Collins, 1976).

The problem with the above mentioned terms is that they are subjectively interpreted and as such eliminate the possibility to reliably measure the actual teacher performance.
Training Teachers to Increase Enthusiasm

Since the present study involved a training intervention that was designed and implemented to increase teacher enthusiasm behavior, literature that deals with this kind of intervention was reviewed. The pioneer attempt to do this was made by Mary Lynn Collins in 1976. Collins designed a mini course on teacher enthusiasm. Twenty preservice elementary teachers who registered to take the mini course became the subjects for her study. One week prior to the training, the researcher video-taped the subjects (both experimental and control groups) teaching 20-30 minute lessons of their choice. Then, the experimental group (10 preservice teachers) were engaged in the mini course that was of two weeks duration and included:

a) Group instruction and evaluation
b) Peer teaching and evaluation
c) Microteaching

As the third step, Collins video taped the subjects (experimental and control groups) in a 20-30 minute lesson of their choice in their classrooms to see if they could maintain a displayed, increased level of teacher enthusiasm. Two observers were trained to use the raters' tally sheet based on low, medium and high descriptions for each of the variables that define teacher enthusiasm. The observers rated the video tapes until they obtained reliability of .90. The findings show
that the preservice teachers in the experimental group demonstrated an overall significant increase (.001) in their displayed level of teacher enthusiasm as compared to the preservice teachers who received no specific enthusiasm training. In her conclusion, Collins noted:

...taken in its entirety, the data from the variance analysis present a rather strong case that it is possible to train a preservice teacher to increase his/her level of teacher enthusiasm as described by the eight variables. (Collins, 1976, p. 7)

Summary

This chapter has examined literature relevant to the parameters of the study. The first portion of the review contains a historical overview of teacher effectiveness research. This review leads us from those studies which are based on supervisory ranking of teacher effectiveness through studies investigating process-process variables to the state of art in teacher effectiveness, research that deals primarily with process-product variables. The second part of the review dealt with methodological issues in teacher enthusiasm studies. This section was divided into three subsections: a) Studies that dealt primarily with the importance of teacher enthusiasm. Studies reviewed in this subsection show clearly that teacher enthusiasm is viewed by administrators and students as an important behavior. Correlational and experimental studies reviewed in this section showed positive relationships between teacher enthusiasm and students' attitude.
and achievement. (b) Definitions of teacher enthusiasm. This subsection focused upon definitions that were used in various studies that investigated teacher enthusiasm. The definitions presented in this subsection showed clearly that most terms used in past research to describe teacher enthusiasm are high inference and as such are subject to subjective interpretations. (c) The final portion of the literature review was focused on the only study that made an attempt to train teachers to increase level of enthusiasm. This pioneer study was made by Collins (1976).

Literature reviewed in this chapter has produced a framework for the methodology of the present study. The following chapters will describe the methods employed in the study and present the results from observing the subjects in natural teaching settings.
CHAPTER III

SOURCES OF DATA, PROCEDURES AND METHODS
OF DATA ANALYSIS

The first section of this chapter will describe how the subjects for the study were selected and the settings in which the study took place. In the second section of the chapter, the procedure for defining teacher enthusiasm behavior is described. In the third section a description of the observation instrument and the training of observers to use that instrument is covered. A short discussion on the establishment of interobserver reliability is also covered in this section. The fourth section described the training intervention employed in the study. The next section attends to the other instrumentation employed in the study. The final portion of Chapter III will describe the methods of data analysis to be used in Chapter IV.

Subjects and Settings

The total number of subjects for this study was sixteen (n = 16). Fifteen subjects, preservice teachers from The Ohio State University, were student teaching in public schools in the greater Columbus, Ohio metropolitan area.
One subject was an inservice teacher currently employed as a teacher of physical education within the greater Columbus public schools system. The fifteen preservice teachers who participated in the study were selected randomly from a list of twenty-four preservice teachers who were scheduled to student teach during the winter quarter of 1979. The inservice teacher who participated in the study volunteered to take part in the study. Once contacted, all subjects participated, received two credit hours of PE 693 (Independent Study) and each subject signed a human subjects consent form (see Appendix A). General characteristics of the subjects including age, sex, year in school, type of program, name of school, grade levels taught, activities taught, type of school are presented in Table 1.
### Table 1

**Characteristics of In-Service Teachers Participated in the Study**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Age</th>
<th>Sex</th>
<th>Year in School</th>
<th>Grade</th>
<th>Activity</th>
<th>Type of School</th>
<th>Type of Class</th>
<th>Previous Teaching Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>21</td>
<td>M</td>
<td>Sr</td>
<td>7-9</td>
<td>Gymnastics, basketball, wrestling</td>
<td>RI</td>
<td>C</td>
<td>X</td>
</tr>
<tr>
<td>6</td>
<td>29</td>
<td>M</td>
<td>Sr</td>
<td>7-9</td>
<td>Gymnastics, basketball, wrestling</td>
<td>Sb</td>
<td>B</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>22</td>
<td>F</td>
<td>Sr</td>
<td>9-12</td>
<td>Basketball, volleyball, ping-pong, recreational games, track &amp; field</td>
<td>Sb</td>
<td>C</td>
<td>X</td>
</tr>
<tr>
<td>8</td>
<td>22</td>
<td>F</td>
<td>Sr</td>
<td>9-12</td>
<td>Basketball, volleyball, ping-pong, recreational games, track &amp; field</td>
<td>Sb</td>
<td>C</td>
<td>X</td>
</tr>
<tr>
<td>13</td>
<td>23</td>
<td>M</td>
<td>Sr</td>
<td>3-5</td>
<td>Gymnastics, basketball, wrestling, floor hockey</td>
<td>Sb</td>
<td>B</td>
<td>X</td>
</tr>
<tr>
<td>7</td>
<td>25</td>
<td>M</td>
<td>Sr</td>
<td>7-9</td>
<td>Basketball, volleyball, floor hockey</td>
<td>Sb</td>
<td>C</td>
<td>X</td>
</tr>
<tr>
<td>9</td>
<td>24</td>
<td>F</td>
<td>Sr</td>
<td>9-12</td>
<td>Basketball, volleyball, ping-pong, recreation</td>
<td>Sb</td>
<td>C</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>25</td>
<td>M</td>
<td>Sr</td>
<td>4-5</td>
<td>Tennis, volleyball, basketball, volleyball, track &amp; field</td>
<td>Sb</td>
<td>C</td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>23</td>
<td>F</td>
<td>Sr</td>
<td>6</td>
<td>Fitness, recreation, volleyball, basketball</td>
<td>Rl</td>
<td>C</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td>23</td>
<td>M</td>
<td>Erskine H.S.</td>
<td>7-9</td>
<td>Floor hockey, basketball, wrestling, floor hockey</td>
<td>Sb</td>
<td>C</td>
<td>X</td>
</tr>
<tr>
<td>12</td>
<td>22</td>
<td>M</td>
<td>Sr</td>
<td>10-12</td>
<td>Basketball, volleyball, recreation</td>
<td>Sb</td>
<td>C</td>
<td>X</td>
</tr>
<tr>
<td>12</td>
<td>22</td>
<td>M</td>
<td>Westwood</td>
<td>4-5</td>
<td>Floor hockey, ping-pong, gymnastics, dance, basketball</td>
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<td>C</td>
<td>X</td>
</tr>
<tr>
<td>14</td>
<td>23</td>
<td>F</td>
<td>Sr</td>
<td>7-9</td>
<td>Basketball, volleyball, gymnastics, basketball</td>
<td>Sb</td>
<td>C</td>
<td>X</td>
</tr>
<tr>
<td>16</td>
<td>22</td>
<td>M</td>
<td>Sr</td>
<td>9-12</td>
<td>Basketball, volleyball, gymnastics</td>
<td>Sb</td>
<td>C</td>
<td>X</td>
</tr>
<tr>
<td>16</td>
<td>22</td>
<td>M</td>
<td>Sr</td>
<td>9-12</td>
<td>Basketball, volleyball, gymnastics</td>
<td>Sb</td>
<td>C</td>
<td>X</td>
</tr>
<tr>
<td>16</td>
<td>22</td>
<td>M</td>
<td>Sr</td>
<td>9-12</td>
<td>Basketball, volleyball, gymnastics</td>
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<td>X</td>
</tr>
<tr>
<td><strong>1</strong></td>
<td>28</td>
<td>F</td>
<td>Inservice</td>
<td>7-9</td>
<td>Gymnastics, basketball</td>
<td>Rl</td>
<td>C</td>
<td>Gyr</td>
</tr>
</tbody>
</table>

**CODES**
- M = Male
- F = Female
- RI = Regular
- U = Unit
- G = Graduate
- X = Experienced

**Inservice Teacher**
PLEASE NOTE:

In all cases this material has been filmed in the best possible way from the available copy. Problems encountered with this document have been identified here with a check mark.

1. Glossy photographs
2. Colored illustrations
3. Photographs with dark background
4. Illustrations are poor copy
5. Print shows through as there is text on both sides of page
6. Indistinct, broken or small print on several pages throughout
7. Tightly bound copy with print lost in spine
8. Computer printout pages with indistinct print
9. Page(s) lacking when material received, and not available from school or author
10. Page(s) seem to be missing in numbering only as text follows
11. Poor carbon copy
12. Not original copy, several pages with blurred type
13. Appendix pages are poor copy
14. Original copy with light type
15. Curling and wrinkled pages
16. Other
Table 2 summarizes the demographic characteristics of the teaching setting.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Level</th>
<th>Location</th>
<th>Class setting</th>
<th>#of different classes observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>JHS</td>
<td>Rural</td>
<td>Indoor gymnasium</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Elem</td>
<td>Suburban</td>
<td>Indoor gymnasium</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>JHS</td>
<td>Suburban</td>
<td>Indoor multipurpose</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>SHS</td>
<td>Suburban</td>
<td>Indoor multipurpose</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>SHS</td>
<td>Urban</td>
<td>Indoor multipurpose</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>JHS</td>
<td>Suburban</td>
<td>Indoor multipurpose</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>JHS</td>
<td>Suburban</td>
<td>Indoor multipurpose</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>SHS</td>
<td>Suburban</td>
<td>Indoor multipurpose</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>SHS</td>
<td>Suburban</td>
<td>Indoor multipurpose</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>SHS</td>
<td>Suburban</td>
<td>Indoor multipurpose</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>Elem</td>
<td>Rural</td>
<td>Indoor gymnasium</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>SHS</td>
<td>Urban</td>
<td>Indoor multipurpose</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Elem</td>
<td>Urban</td>
<td>Indoor gymnasium</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Elem</td>
<td>Rural</td>
<td>Indoor gymnasium</td>
<td>2</td>
</tr>
<tr>
<td>14</td>
<td>JHS</td>
<td>Urban</td>
<td>Indoor gymnasium</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Elem</td>
<td>Urban</td>
<td>Indoor gymnasium</td>
<td>2</td>
</tr>
<tr>
<td>15</td>
<td>Urban</td>
<td>Urban</td>
<td>Indoor gymnasium</td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>JHS</td>
<td>Rural</td>
<td>Indoor gymnasium</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 2 - level and location of schools, type of facility and number of different classes observed for each subject.

Each subject seemed to have adequate facilities and equipment for the activities observed in the study. Generally speaking, the activities taught by the subjects were appropriate for the level of the students. In terms of
safety, all facilities were kept clean and free of debris. It is appropriate to point out that all the preservice teachers were required to teach certain activities chosen by their cooperating (master) teachers.

**Definition of Teacher Enthusiasm**

As mentioned in Chapter I, the first problem encountered in this study was to determine the low inference behavioral indicants of teacher enthusiasm. For this purpose, three sources were asked to specify teacher behaviors that indicate enthusiasm. First, thirteen experts in teacher education were asked to write down the vocal and behavioral indicants which they perceived to communicate the concept of teacher enthusiasm to students. Table 3 summarizes the indicants of teacher enthusiasm most agreed upon by experts.
Table 3

Indicants of Teacher Enthusiasm Indicated by Experts in Teacher Education

<table>
<thead>
<tr>
<th>Enthusiasm Behavioral Indicants Specified by 13 Experts</th>
<th>Percentage of Experts Specified the behavior</th>
<th># of Experts specified the behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of speech, voice inflection, punctuation</td>
<td>100%</td>
<td>13</td>
</tr>
<tr>
<td>Hand movement, gestures</td>
<td>100%</td>
<td>13</td>
</tr>
<tr>
<td>Encouraging students positive reinforcement, positive feedback</td>
<td>100%</td>
<td>13</td>
</tr>
<tr>
<td>Lesson Plan and Equipment ready</td>
<td>92%</td>
<td>12</td>
</tr>
<tr>
<td>Hustling</td>
<td>61.5%</td>
<td>8</td>
</tr>
<tr>
<td>Participating with the students in their Activity</td>
<td>53.8%</td>
<td>7</td>
</tr>
<tr>
<td>Smiling</td>
<td>30.7%</td>
<td>4</td>
</tr>
<tr>
<td>Variety of activities</td>
<td>30.7%</td>
<td>4</td>
</tr>
<tr>
<td>Keeps the students Actively engaged in the Activity most of the Time</td>
<td>30.7%</td>
<td>4</td>
</tr>
<tr>
<td>Positive feedback Precedes negative one</td>
<td>23.0%</td>
<td>3</td>
</tr>
<tr>
<td>Touch Student in Friendly Manner</td>
<td>23.0%</td>
<td>3</td>
</tr>
</tbody>
</table>
Expert responses such as "high expectation from students", "self reinforcement", "eye movement", "giving extra", were not included because of their being high inference behaviors, less amenable to reliable observation. For a complete list of indicants specified by the experts see Appendix D.

Secondly, one hundred physical education teachers in the Columbus metropolitan area responded to the request to recall and specify teacher behaviors they perceived as enthusiastic ones. Table 4 summarizes the most agreed upon teacher behaviors that communicate enthusiasm as specified by the teachers.
Table 4

Indicants of Teachers Enthusiasm Indicated by Public School Teachers from the Greater Columbus Area

<table>
<thead>
<tr>
<th>Enthusiasm Behavioral Indicants Specified by 100 teachers</th>
<th>Percentage of Teacher Specified Behavior</th>
<th># of Teachers Specified the Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encourage Student; Positive Reinforcement; high rate of Encouragement Statements; praises alot</td>
<td>70%</td>
<td>70</td>
</tr>
<tr>
<td>Joking; laughing; sense of humor</td>
<td>50%</td>
<td>50</td>
</tr>
<tr>
<td>Good Preparation, lesson plan Available for Each Activity, Equipment ready before Lesson Starts</td>
<td>33%</td>
<td>33</td>
</tr>
<tr>
<td>Participation with Students in Activity</td>
<td>26%</td>
<td>26</td>
</tr>
<tr>
<td>Voice Inflection</td>
<td>25%</td>
<td>25</td>
</tr>
<tr>
<td>Gestures; hand movement Variety of Facial Expression; Body Movement</td>
<td>20%</td>
<td>20</td>
</tr>
<tr>
<td>Smiling</td>
<td>17%</td>
<td>17</td>
</tr>
<tr>
<td>Helps Whenever Needed</td>
<td>14%</td>
<td>14</td>
</tr>
<tr>
<td>Moving alot in the Gym; Changes Position</td>
<td>11%</td>
<td>11</td>
</tr>
<tr>
<td>Increase Practice Time; Keep Students Busy</td>
<td>10%</td>
<td>10</td>
</tr>
<tr>
<td>Hustling; Hustles Students to Increase Pace of Activity</td>
<td>10%</td>
<td>10</td>
</tr>
</tbody>
</table>

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Other responses made by the teachers such as: "has concern for kids other than school's concern"; "has school spirit"; "doesn't have favorite"; or "willing to help", were not included by the researcher because of their being high inference behaviors less amenable to reliable observation. For a complete list of indicants specified by the teachers see Appendix C.

The third source, 245 students specified behaviors of teachers whom they recalled to be enthusiastic teachers. The students were from twelve schools in the Columbus metropolitan area, seven senior high schools and five junior high schools. Five schools were suburban schools, four were urban schools and three were rural schools. Their grade level ranged from 7 to 12th grade. (For the complete form given the students, see Appendix E) Table 5 summarizes the most agreed upon indicants of teacher enthusiasm as specified by 245 junior high and senior high students.
Table 5

Indicants of Teacher Enthusiasm Indicated by Junior High and Senior High Students in the Greater Columbus Area

<table>
<thead>
<tr>
<th>Enthusiasm Behavioral Indicants Specified by 245 Junior High and Senior High Students</th>
<th>Percentage of Students Specified the Behavior</th>
<th># of Students Specified the Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joking; tells alot of Jokes; Sense of Humor</td>
<td>45.3%</td>
<td>111</td>
</tr>
<tr>
<td>Smiling</td>
<td>30.6%</td>
<td>75</td>
</tr>
<tr>
<td>Friendly toward Students; Helps without Request</td>
<td>20.4%</td>
<td>50</td>
</tr>
<tr>
<td>Keeps Students Busy Most of the Time; Practicing alot</td>
<td>17.9%</td>
<td>44</td>
</tr>
<tr>
<td>Encourages alot</td>
<td>16.7%</td>
<td>41</td>
</tr>
<tr>
<td>Participates with Students in Activity</td>
<td>12.2%</td>
<td>30</td>
</tr>
<tr>
<td>Offers Variety of Activities</td>
<td>11.8%</td>
<td>29</td>
</tr>
<tr>
<td>Involves Everyone in the Activity, Makes it possible for Everyone to Participate —Maximize Participation</td>
<td>10.6%</td>
<td>26</td>
</tr>
<tr>
<td>States Objectives</td>
<td>10.2%</td>
<td>25</td>
</tr>
<tr>
<td>Dressed Appropriately</td>
<td>10.2%</td>
<td>25</td>
</tr>
<tr>
<td>Teacher Changes Position in Gym</td>
<td>10.2%</td>
<td>25</td>
</tr>
<tr>
<td>Does not yell; Change his Voice Rapidly from Smooth to Rough</td>
<td>9.3%</td>
<td>23</td>
</tr>
</tbody>
</table>
Other responses made by students such as: "relaxed and easy to be with—no tension"; "confident—not always on the defense"; "work with students not on them"; "has always something interesting to talk about"; "not mean"; "not boring"; were not included because of their being high inference behaviors, less amenable to reliable observation. For a complete list of indicants specified by the students, see Appendix B.

Total suggestions from the three data sources were 2014, of which 180 were made by the 13 teacher education experts, 631 by teachers, and 1203 by the students. The final categories used by the researcher in order to measure level of teacher enthusiasm were selected by the following procedures. First, the researcher and two second year graduate students in doctoral program in teacher education discussed each of the obtained responses in order to omit those responses that were high inference and unmeasurable. Then the remaining 925 responses were divided into 26 groups of responses that communicate the same behavior. In the third step, every response group (category) exceeding 10% response by at least one of the data sources was selected as a category to be observed and measured by the Teacher Enthusiasm Observation System (TEOS). Table 6 summarizes the final categories selected as behavior indicants communicating teacher enthusiasm and percentage of response made by each of the data sources.
### Table 6

**Final Categories Selected as Behavior Indicators**

*Communicating Teacher Enthusiasm*

<table>
<thead>
<tr>
<th>Category</th>
<th>% of Student Response</th>
<th>% of Teacher Response</th>
<th>% of Expert Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joking</td>
<td>45.3</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Smiling and Laughing</td>
<td>30.6</td>
<td>17</td>
<td>30.7 (n=4)</td>
</tr>
<tr>
<td>Keep Students Busy Actively Engaged Most of the Time</td>
<td>17.9</td>
<td>10</td>
<td>30.7 (n=4)</td>
</tr>
<tr>
<td>Various Types of Positive Feedback Encourages Students</td>
<td>16.7</td>
<td>70</td>
<td>100 (n=13)</td>
</tr>
<tr>
<td>Participate with Students in Activity</td>
<td>12.2</td>
<td>26</td>
<td>53.8 (n=7)</td>
</tr>
<tr>
<td>Offers Variety of Activities</td>
<td>11.8</td>
<td>-</td>
<td>30.7 (n=4)</td>
</tr>
<tr>
<td>Maximize Participation</td>
<td>10.6</td>
<td>-</td>
<td>30.7 (n=4)</td>
</tr>
<tr>
<td>Appropriately Dressed</td>
<td>10.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Voice Inflection (Rate and Punctuation)</td>
<td>9.3</td>
<td>25</td>
<td>100 (n=13)</td>
</tr>
<tr>
<td>Teacher Changes Position in Gym</td>
<td>10.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lesson Plan and Equipment Ready</td>
<td>-</td>
<td>-</td>
<td>.92 (n=12)</td>
</tr>
<tr>
<td>Gestures</td>
<td>-</td>
<td>20</td>
<td>100 (n=13)</td>
</tr>
<tr>
<td>Hustling to Increase Pace of Activity</td>
<td>-</td>
<td>10</td>
<td>61.5 (n=8)</td>
</tr>
<tr>
<td>Touching</td>
<td>-</td>
<td>-</td>
<td>23.0 (n=3)</td>
</tr>
<tr>
<td>Teacher Modeling</td>
<td>-</td>
<td>-</td>
<td>23 (n=3)</td>
</tr>
</tbody>
</table>
Observational Technique

Data for this study were collected by non-participant observers in the natural setting. Five observational techniques were utilized by eight observers to record the specified target behaviors of the sixteen subjects. The methods of collecting observational data were: interval recording, event recordings, group time sampling, vocal checks and position checks. Interval recording is used to measure the occurrence or non-occurrence of behavior within specified time intervals. (Cooper, 1974) In this study interval recording was used to count the occurrence or non-occurrence of climate possibilities and fourteen non-verbal and verbal target behaviors. Event recording is a frequency count of predefined behaviors. (Cooper, 1974) For this study event recording was used to record teacher joking behavior, and the number of times the teacher changed activity or drills during the observational period. Planned activity checks (pla-checks) are time sampling techniques applied to a group behavior. (Hall, 1971) Pla-checks were made every five minutes to determine the number of students actively participating in the skill practice. Vocal checks were made every five minutes in intervals 19-21, 49-51, 79-81, and 109-111. Vocal checks were made to determine rate of speech, voice volume, voice inflection and clarity of speech. Position checks were made initially just before observation started and then every five minutes in intervals
Position checks were made in order to determine teachers' mobility during the observation period. The observation instrument employed in this study was entitled Teacher Enthusiasm Observation System (TEOS). The instrument is a modification of a similar observation system designed by Stewart (1977). The same format has also been employed in the observation of coaching behavior (Siedentop and Crossman, 1978) and by Friedman (1978). The TEOS focuses specifically on the observed behaviors of physical education teachers. Each interval was of five second duration, five seconds to observe then five seconds to record the preceding observation. The observers were provided with pre-programmed cassette audi-tape-recording to cue them to the proper interval for coding purposes and for place check, vocal check and position checks purposes. Figure 1 (modified from Friedman, 1978) illustrates this sequence.
### Table: Cassette Tape Recorder Program Format for Observation with the TEOS

<table>
<thead>
<tr>
<th>Climate</th>
<th>Verbal</th>
<th>Climate</th>
<th>Verbal</th>
<th>Climate</th>
<th>Verbal</th>
<th>Climate</th>
<th>Verbal</th>
<th>Climate</th>
<th>Verbal</th>
<th>Climate</th>
<th>Verbal</th>
</tr>
</thead>
<tbody>
<tr>
<td>HV1/HVII</td>
<td>HV1/HVII</td>
<td>HV1/HVII</td>
<td>HV1/HVII</td>
<td>HV1/HVII</td>
<td>HV1/HVII</td>
<td>HV1/HVII</td>
<td>HV1/HVII</td>
<td>HV1/HVII</td>
<td>HV1/HVII</td>
<td>HV1/HVII</td>
<td>HV1/HVII</td>
</tr>
</tbody>
</table>

"Observe"  "Record 1"  "Observe"  "Record 12"  "Position Check"  "Observe"  "Record 15"

"Observe"  "Record 18"  "Vocal Check"  "Observe"  "Record 30"  "Plot Check"

---

**Figure 1**

Cassette tape recorder program format for observation with the TEOS

(sample of the first 32 intervals)
A critical component of any interval recording system is the precise definition of the constructs of that instrument. In this study, each climate, behavior and event observed were defined for the observer. The definitions were derived mainly from the observation instrument used in Friedman's study (1978) which in turn derived from previous physical education teacher behavior studies. (Anderson, 1974; Siedentop and Hughley, 1975; Tharp and Gallimore, 1976; Stewart, 1977). All the nonverbal behaviors employed in this study were defined by: a professor from the drama department at Ohio State, an expert in teacher education in the Physical Education Department at Ohio State and by the investigator of this study. As stated before, the TEOS allowed an observer to record in the following categories: classroom climate, teacher verbal behaviors, teacher nonverbal behavior, vocal check, position checks, place check and number of changes in activities made by the teacher during the observational period.

Listed on the following pages are the definitions for the climates, behaviors and events observed in the natural setting during the course of this study.

**Definition of Classroom Climates**

Management-(M): This refers to the period of time in class when, theoretically, the opportunity to learn is not present. During this time 51% or more of the students are involved in activities that are only indirectly related to the
class learning activity or activities. In order to code in this category, 51% or more of the students must not be engaged in instruction, practice, or demonstration.

Examples:
- Students involved in changing activities or stations
- Students numbering off for an activity
- Teacher is calling roll
- Students are waiting for class to begin
- Students are waiting for instruction to begin or resume after a fire drill, public address announcement, etc.
- Students are getting out or putting away equipment
- Teacher lectures about unrelated subject matter area: "Everyone walks to pick up equipment", "We are going to work more quietly"
- Teacher designating groups for station work within the gymnasium, rotating stations, changing and/or adjusting equipment, calling a group together from a station, putting out or returning equipment and convening from or dismissing students to the locker room
- Teacher moving a group from indoor to an outdoor environment

Instruction - (I): This refers to the period of time when the class is given the opportunity to learn without actual practice or activity. During this time students may receive information related to the objectives of the lesson, either verbally or nonverbally (51% criteria applies).

Examples:
- Listening to a lecture
- Watching the teacher demonstrate skill
- Watching a film or using other forms of media for explanation and/or demonstration purposes
- Participating in a class discussion or answering teacher questions related to the objectives of the lesson
- Teacher asks questions related to the subject matter
- Teacher answering the questions of others related to subject matter
Activity--(A): This refers to the period of time in class when the students are engaged in active movement or physical activity, performances that are consistent with the objectives of the class. It also refers to the period of time during activity that the teacher provides further instruction related to the activity or task. This might occur in an individual or group basis (51% criterion applies).

Examples

--Students are performing drills
--Students are performing calisthenics or exercise
--Students are participating in group or individual sports or games
--The Teacher re-explains a skill technique while the student is engaged in the activity
--The Teacher models a skill for the student(s) while they are attempting that skill or movement

Definition of Teacher Verbal Enthusiasm Behavior

Behavior and Skill Feedback General--(A + -) (+): Refers to the times the teacher provides positive or supportive statement to behavior episodes related to social and/or academic and related to motor behavior. The feedback does not refer to specifics of the performance. The praise (or the supportive statement) may be directed to a group of students or to the entire class. The feedback is stated in general terms such as "great", "good", "super", "good job", "nice try", "way to go", "good effort."

(-) Refers to statement made by the teacher which is negative: "terrible", "bad job", "bad news", "my son can do it better", "disaster."
Behavior and Skill Feedback Specific - B (+ -): (+)

Refers to the time the teacher provides positive statement to a behavior episode unrelated and related to motor skill performance referring to specifics of the performance, in more exact terms. The praise is supplemented with information directly related to the performance of a social behavior.

Examples:

(+)  
- "Tremendous, class, you lined up beautifully"
- "Fine job, you followed through that time"
- "I like the way you are sitting still without talking to Jody"

(-)  
- "Bad shot, you missed the ball that time"
- "Stop talking to Jody all the time"
- "It was a very bad performance especially the way you followed through"
- "Don't hit it too hard or you will miss the station"

Corrective Skill Feedback - (C): Refers to a response by the teacher to a skill or movement attempted by the student. This feedback is given in response to a performance error by a student.

Examples:

- "Keep your knees bent"
- "More back swing"
- "You are turning your racquet over"
- "More force"
- "Greater control"
- "Arch your back"

NOTE: This behavior may occur during Instruction and Activity climates.
Skill Feedback/Corrective—(A/C): Refers to the times that the teacher provides general positive skill feedback and immediately follows it with corrective statements. Remember, this is the linking together of the two statements in an immediate manner that allows us to code in this category.

Examples:

--"Good but next time bend your knees more"
--"It was terrific but now try to follow through more"
--"Great job, remember to back swing next time"

NOTE: This behavior may not occur in the Management climate.

Hustles—(H): Refers to the times that the teacher uses verbal statements or gestures to activate or intensify the motor performance of the students.

Examples:

--"Run, run, run"
--"Move"
--"Go, go, go"
--"Hustle, hustle, hustle"
--Encouraging clapping of the hands

Note: This behavior may not occur in the Management climate.

Teacher Non-Verbal Behavior I

Touching—(T): Refers to the times the teacher touches a student to communicate an inner positive affective feeling such as pat on back, handshake, hand on shoulder, hug or a stroke on the student's head.

NOTE: Any physical contact that intends to punish students such as a spank/kick will not be coded in this category.
Spotting - (SP): Refers to the times the teacher is assisting a student in the performance of a motor task with the intent of providing safe conditions for that student. Examples include holding hand in the balance beam, holding arms while teaching swimming, physical guidance while teaching the grip in tennis.

NOTE: This behavior may not occur in the Management climate.

Teacher Modeling - (TM +/-): Refers to the times that the teacher demonstrates a skill behavior for one or many students. The teacher may model the skill correctly (+) or incorrectly (-). This behavior may occur in all climates. Showing students how to sit quietly would be considered a modeling behavior.

Teacher Participation - (P): Refers to the period of time that the teacher actively participates in a game or sport with the students. This behavior may occur in the Activity climate only.

Non-Verbal Behavior II

Smiling/Laughing - (S/L): Refers to the times teacher exhibits a facial expression that communicates happiness or amusement usually with parting of the lips and loosening of the facial muscles. It also refers to the times the teacher makes sounds and movement of the face (laughing) communicating amusement, joy and content.
NOTE: If the teacher is consistently talking with mouth more open and exposing teeth, it will not be recorded as smiling/laughing.

Gestures—(GE): Refers to the times the teacher moves hands to indicate or illustrate an idea, feeling and/or message.

Examples:

— Clapping hands as if to say "bravo"
— Fist raising in air as in "right on"
— Waving hands in air
— Extending fist with thumb pointed up for success

A vocal check was made every five minutes for 30 seconds. In the designated time, the observer checked for:
(a) rate of speech (F for fast, N for normal, S for slow). F was coded when the teacher spoke more clearly and faster than normal and S was coded when the teacher spoke more slowly than normal. (b) Voice volume (H for high volume, L for low volume. High volume was coded when the teacher's voice volume was between clearly heard to very loud. Low volume was coded when his voice was between less than clearly heard to a whisper). (c) Voice inflection (VI) refers to the occurrence of change in the teacher's rate of speech from slow to fast and from fast to slow and in the teacher's voice volume from high to low and vice versa. The observers were trained to distinguish between the different categories of the voice check.

Position Check: At the beginning of the lesson the observer
marked the teacher's position by placing an X on the rectangle designated for this purpose according to his position in the gym. Every 5 minutes the observer checked his position within 20 seconds in the designated area in the coding sheet. 

Student Participation Check: Every 5 minutes the observer recorded the number of students actively engaged in the ongoing activity.

Event Recording

Joking: Refers to the times the teacher says or does something that intends to cause amusement, smiling or laughing by the student(s).

Examples:

- Punning
- Breaking monotony by amusing remark
- Short funny story
- Funny remarks

Changing Activity - The observer tallied on the designated line the number of activities (games, drills) included in the lesson as they occurred.

Examples:

- When the teacher teaches the "set" in volleyball, the students will set the ball against the wall, then toward each other and finally in a circle formation. Number of drills coded is - 3.

Example of play change:

- Moving from 2 against 2 in basketball to 4 against 4
- Changing from volleyball to soccer
- Changing the rules in basketball game

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Figure 2 represents the instrument that was used by the observer to code the subjects. Each vertical series of four boxes labeled "C", "V", "NVI", and "NVII" corresponds to one interval, 5 seconds for observation, and five seconds to record. On the bottom of the observation sheet, 2 lines are designated to tally joking and changing activity. Intervals 13-14, 43-44, 73-74, 103-104, are designated for position checks. Intervals 19-21, 49-51, 79-81, 109-111 were designated for vocal checks.
Figure 2 - Teacher Enthusiasm Observation System
The climates, verbal behavior and nonverbal behaviors were listed at the bottom of the coding sheet, and corresponded to the definitions listed on the preceding pages. Each TEOS page was capable of handling 120 intervals or 20 minutes of class time. Pre-program rests were not included. If an observer wanted to rest, he/she was encouraged to do so after the termination of the first 120 intervals. The system was designed so that the observer had short rests at the various checks (position and vocal). Regardless of the system of observation, whenever joking behavior occurred or the teacher changed activity, the observer was instructed to work it in the designated area in the coding sheet. Five second observation intervals are typical of many interval systems found in observational research. Considerable evidence demonstrates that short intervals are preferable when there are many behavior categories (Williams and Anadam, 1973; Bijou, Peterson and Ault, 1973). In this study, each interval was limited to the coding of one climate, one verbal behavior, and two nonverbal behaviors. In each interval, two boxes were dedicated to nonverbal behaviors. When two behaviors of the same level occurred in the same interval, the observer was instructed to determine which behavior had the longer duration.

Description and Training of Observers

Eight individuals collected data for this study. This researcher was responsible for doing reliability checks.
When an observer could not observe, the researcher filled in. Table 7 summarizes background data of each of the eight observers chosen for the study.

<table>
<thead>
<tr>
<th>Observer</th>
<th>Age</th>
<th>Sex</th>
<th>Academic Status</th>
<th>Year in School</th>
<th>Previous experience in observational recording</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>31</td>
<td>M</td>
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<td>1st doctoral prog</td>
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<td>8</td>
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<td>Fb</td>
<td>Undergraduate Senior Student</td>
<td>1st doctoral prog</td>
<td>No</td>
</tr>
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</table>

Training procedures started one month prior to the collection of field data, the following sequence of events was followed during the training of observers.

1) Each observer was provided with manual explaining the TEOS instrumentation including the definitions of all categories and behaviors. The observers were given one week to read the manual and familiarize themselves with it's contents.
2) Training sessions were held in the physical education teaching learning center (TLC) at Ohio State. During these sessions after each observer felt comfortable coding with TEOS and had adjusted to the interval sequence, each observer coded tapes, prepared especially for the training purpose, and reliability was compared to an independent observer (the researcher).

3) When an observer was able to obtain 3 consecutive times, reliability agreement of 0.90 for climate, 0.90 for verbal behavior and 0.75 for nonverbal teacher behaviors, he/she was permitted to begin observation in the real setting but not in the school's which the subjects were teaching. When an observer was able to obtain in this setting 3 consecutive times the same reliability level as required in the lab, he/she was ready to start observation for the study. The criterion levels for the climate and verbal behavior chosen for reliability are similar to those employed by Stewart, (1977) and Freedman (1978) and exceed the criterion suggested by Johnson and Bolstad, (1974). Following the training, each observer received a weekly schedule for observation and he/she was required to be in the observation setting at least 15 minutes prior to the start of the observation in order to be able to fill out a checklist. The observers recorded between 1050 to 1800 intervals on each subject in the study. During the course of the study, this researcher obtained a reliability check with each of the eight observers. Due to time, travel and scheduling limitations, it was not possible to pair observers with each other, more than four times through the entire study. This researcher, checked reliability 5 times with each observer.

The procedure for obtaining inter-observer agreement was as follows:

1) A split jack was connected to the cassette deck so both observers would be cued to the same interval.

2) A class session of at least 120 intervals was coded by both observers.

3) Reliability estimates were obtained by comparing codes for each observer, by scored-interval (S-I) agreement. (see Hawkins and Dotson, 1975).
4) Percent of agreement was obtained by using the following formula:

\[
\frac{\text{Number of intervals in agreement}}{\text{Number of intervals in agreement} + \text{Number of intervals in disagreement}} \times 100
\]

The results of the reliability checks in training and in field observations are reported in the next chapter.

Other Instrumentation Employed in the Study

In addition to observational data collected with the TEOS, data were obtained through the use of questions and a checklist. The students were asked to express their written response on two questions regarding the amount of time the teacher who taught them spent on the verbal and nonverbal behavior recorded by the instrument. The instrument shown in Figure 3 was developed by this researcher and consisted of 13 questions. Some of the questions (1, 3, 5, 9, 11) asked the students to rank the teacher (subject) on a scale of 1-5 when 1 is the lowest and 5 is the highest exhibition of certain teacher behaviors. The other questions (2, 4, 6, 7, 8, 10, 12) were answered yes or no. Students were asked whether in their opinion certain behaviors were sufficiently exhibited by the teacher (subject).
QUESTIONNAIRE I

Dear Student: please take three minutes from your time and concentrate on answering the following questions. Place a circle around the number that reflects your opinion the most. Remember to circle only one number. In the yes/no questions, circle your answer. Thank you very much for your help.

1. Did the teacher who just taught you SMILE?
   
   1 /  2 /  3 /  4 /  5 / 
   not at all little somewhat much very much

2. Do you think that he/she SMILED enough? Yes/No

3. Did the teacher who just taught you keep you BUSY (practicing, playing?)?
   
   1 /  2 /  3 /  4 /  5 / 
   almost none less than half more than almost all of time half half the time

4. Were you BUSY practicing and playing enough? Yes/No

5. Did the teacher who just taught you, TAKE PART in the class activity? (playing, practicing? Yes/no

6. If yes, did you enjoy it? Yes/No

7. Did the teacher who just taught you ENCOURAGE you to practice the activity you just learned?
   
   1 /  2 /  3 /  4 /  5 / 
   not at all little somewhat much very much

8. Do you think that he/she ENCOURAGED you enough to practice the activity? Yes/No

9. Did the teacher who just taught you HUSTLE?
   
   1 /  2 /  3 /  4 /  5 / 
   not at all little somewhat much very much

10. Do you think that he/she HUSTLED enough? Yes/No

11. Is the teacher who just taught you an ENTHUSIASTIC TEACHER? Yes/No

Figure 3: Questionnaire #1 that was given to each student participating in the lesson observed immediately after the lesson ended.
Questionnaire number 2 as shown in Figure 4, served two purposes: 1) to cover for the real questions of the study to avoid possibility that the students will start to "look for" the behaviors under investigation (questions 1, 2, 3, 4) and 2) to ask questions relevant for the purpose of the study (questions 5, 6, 7, 8, 9, 10, 11).
QUESTIONNAIRE II

1. Do you like to PARTICIPATE in PE activities? yes / no

2. Did you like the way the teacher was DRESSED: yes / no

3. Did you like the TONE OF VOICE of the teacher who just taught you? yes / no

4. Did you like today's ACTIVITY?

   1 / 2 / 3 / 4 / 5

   not at all very little little much very much

5. Did the teacher who just taught you HELP you when you needed it?

   1 / 2 / 3 / 4 / 5

   not at all less than half of most of all the time

6. Did he/she HELP you ENOUGH? yes / no

7. Did the teacher who just taught you SMILE?

   1 / 2 / 3 / 4 / 5

   not at all little somewhat much very much

8. Did you think that he/she SMILED enough? yes / no

9. Did the teacher who just taught you keep you BUSY (practicing, playing)?

   1 / 2 / 3 / 4 / 5

   almost none less than half of more than almost all of the time

10. Were you BUSY practicing and playing enough? yes / no

11. Is the teacher who just taught you an ENTHUSIASTIC TEACHER?

    yes / no

Figure 4

Questionnaire #2 that was given to each student participating in the lesson observed immediately after the lesson ended.
The instrument shown in Figure 5 is a checklist developed by this researcher to check the events that occurred before the execution of the lesson such as the preparation of a lesson plan, being on time, and the arrangement of necessary equipment before class began. The other purpose of the checklist was to obtain the subjective opinion of the observer regarding the following teacher behaviors: competency in the subject matter, level of enthusiasm, competency in managing the class and rapport building with students. Data obtained from the checklist were not analysed in later chapters.
CHECKLIST

Observer_________________________  Teacher_________________________

School_________________________  Grade______Subject matter_________________________

Time of arrival to gym_______ Time lesson starts______________

Before lesson begins
1. Time the teacher arrives to gym_________________________
2. Is the teacher dressed appropriately, bearing in mind the intended subject matter? yes / no
3. Is all the equipment for the forthcoming lesson ready for use? yes / no
4. Does the teacher have written evidence (lesson plan of any kind for the expected outcome of the lesson? yes / no
5. Did he/she start the lesson right on time? yes / no
   If not__________ minutes late.

After lesson ends (You may do this at home)

On a scale of 1-5, when 1 is the lowest exhibition and 5 the highest, rank the teacher's performance in this lesson.

1. Competency in the subject matter_________________________
2. Level of enthusiasm_________________________
3. Competency in managing the class_________________________
4. Evidence of rapport building_________________________

Figure 5

Checklist filled out by observers before and after an observed lesson.
Training Intervention

The intervention was designated to train the subjects to increase their level of enthusiasm. It consisted of a fourteen hour mini-course which took place in the Teaching Learning Center (TLC) at Ohio State. Each group of subjects met 7 times during a week for 2 hours session every time. The following are general descriptions of the sessions' content:

Session I:

a) Introduction to the course - 15 minutes
b) Social interaction activity and videotaping a segment of 4 minutes of subject teaching a motor skill selected by him - 35 minutes
c) Lecture on Trends in Teacher Effectiveness Research and its relation to enthusiasm behavior - 25 minutes
d) Presentation of baseline data of each subject with explanation of definition - 30 minutes
e) Assignment given for the next session - 10 minutes

Session II:

a) Introduction and social activity - 15 minutes
b) Viewing of special videotapes - 30 minutes
c) Microteaching with group and leader feedback with emphasis on general behavior and skill feedback - 35 minutes
d) Watching videotapes of the preceding microteaching and recording the target behavior - 30 minutes
e) Assignment for the next session - 10 minutes

Session III:

a) Introduction and social activity - 15 minutes
b) Viewing special videotapes that emphasize behavior and skill feedback/specific and skill feedback/corrective
c) Microteaching followed by group and leader feedback emphasizing the target behavior - 35 minutes
Session III (Cont'd.):

d) Viewing videotapes of preceding microteaching and recording the target behavior - 30 minutes
e) Discussion and assignment for next session - 15 minutes

Session IV:

a) Introduction and social activity - 15 minutes
b) Lecture on ways to reduce management time - 15 minutes
c) Microteaching emphasizing hustling behavior - 15 minutes
d) Viewing videotapes of the preceding microteaching and recording the target behavior - 30 minutes
e) Discussion on the topic: How to teach students to discriminate between various teacher responses, as means of solving discipline problem - 30 minutes
f) Assignment for next session

Session V:

a) Introduction and social activity - 15 minutes
b) Lecture on non-verbal communication as a teaching and skill - 20 minutes
c) Viewing videotapes emphasizing smiling and gesture behavior - 20 minutes
d) Microteaching; teaching a motor skill without verbal responses followed by group and leader feedback - 30 minutes
e) Viewing videotapes of preceding microteaching followed by a discussion - 25 minutes
f) Assignment for next session - 10 minutes

Session VI:

a) Introduction and social activity - 15 minutes
b) Lecture: The use of voice to the benefit of the effective teachers illustrated by demonstrations - 30 minutes
c) Exercise voice projection emphasizing rate of speech, volume and voice inflection - 35 minutes
d) Videotaping each subject teaching 8 minutes emphasizing total enthusiasm behavior - 45 min.

Session VII:

a) Individual discussion with each subject on individual problems and future goals - 120 minutes
In spite of the investigator's effort to assure an equal treatment to the three groups of subjects during the intervention training, some differences in content and session duration occurred and were recorded by an independent observer. (see Appendix J) Following the training intervention, after each observation the subjects viewed their own coding sheet and discussed it with the observer. In order to enhance generalization, the observers were instructed not to discuss data with the subjects in the last two observations made on every subject.

**Design and Analysis**

A probe and multibaseline design across subject (Horner and Baer, 1978) was chosen in order to analyze the functional relationship between the dependent variable (enthusiasm behavior) and the independent variable (training intervention). This design shows the functionality of the intervention by demonstrating that the intervention produces the same kind of behavior change: (1) across a variety of behaviors of the same subject within a given setting, or (2) across a variety of settings for the same behavior of a single subject, or (3) across a variety of subjects displaying the same setting (Cooper, 1974) or various combinations of those three, e.g. across different subjects each displaying the same set of behaviors in different but similar settings (Horner and Baer, 1978) which was the case in the present study. According to Horner and Baer (1978, p. 193), "the multiple probe technique can also be used to
replace the continuous baseline measurement of the traditional multiplebaseline technique in those instances when measurement during extended baseline is impractical..." which was the case in the present study mainly because of problems of scheduling and availability of observers. Allan and Johnston (1969) suggested the possibility of baseline based on intermittent observations, so that limited observer time can be used more efficiently to collect data on a large number of subjects or across a large number of settings. In the present study, baseline data were initially measured intermittently and then frequently before intervention started. Table 8 summarizes the number of observations and intervals made on each subject before intervention (baseline) and during intervention.
### Table 8

Number of observations on each subject before, and during intervention

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<td>600</td>
<td>7</td>
<td>1050</td>
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**Analysis**

The significance of results in single subject research is evaluated both experimentally and therapeutically (Kazdin and Mahoney, 1976). The degree of experimental significance is determined by the amount of change that occurred over baseline rates. Therapeutic change is determined by the degree to which behavior change allowed the individual to function more efficiently in the setting. The experimental
significance of reported behavior change was evaluated in this study by "visual inspection": graphic records of the target behaviors were inspected and the degree of change was evaluated. Experimental significance was also analyzed statistically by implementing sub-program T-test. Therapeutic change was determined by the subjects report of feeling on an evaluation form that was given to them at the end of the experiment. Data analysis in the present study used descriptive statistics such as measures of mean differences, variance ranges and percentages. The analysis of the data includes also correlational analysis. The basic analytic mode for the observational data was frequency of occurrence expressed in the percent of total intervals for each climate, verbal behavior and non-verbal behavior. Percent of total intervals was obtained by counting the number of intervals for each behavior and then dividing that figure by the total number of coded intervals in that category. Selected items from the two questionnaires were correlated with the observation instrument results. In single subject research inferences to the population can only be made by replicating the study in different settings, involving different behaviors, and by different researchers. The generalizability of findings was also limited to the extent that a cause and effect
relationship could be established through the use of the probe multiple baseline design. The following sub-programs were employed in the analyses:

1) T-test
2) Pearson Product Correlations

Summary

This chapter described the subjects and the settings in which those subjects were observed. The method for arriving to operational definition of teacher enthusiasm behavior was discussed. Next a thorough discussion of the TEOS was presented including the definitions of category and behaviors employed in that instrument. Training procedures and inter-observer reliability methods for observers were also discussed. The training intervention was discussed in detail.

The chapter concluded with a presentation of the research design chosen to demonstrate functional relationships and the methods of data analyses employed to this study. Chapter IV will present the findings of the study in the following format:

1) Interobserver reliability results
2) Subject results
3) Probe multiplebaseline results
4) Correlational analyses results
5) Combined analyses of results
CHAPTER IV
ANALYSIS AND DISCUSSION OF DATA

This chapter contains the results of the analysis of the data collected during this investigation. The chapter is divided into the following sections:

1. Reliability of observation and data recording
2. Data analysis for each of the sixteen subjects participating in the study
3. Analysis of five selected variables that communicate teacher enthusiasm
4. Probe multiple baseline analysis
5. Correlational analysis results

Data will be reported in a summary format followed by topical discussions as they relate to the specific questions posed in Chapter I. The first portion of Chapter IV presents the results of reliability checks conducted on observers using the Teacher Enthusiasm Observation System (TEOS).

Reliability

Studies which gather data through observational recording must demonstrate that the data are reliable. In single subject research, this is accomplished through two observers using the same procedures to obtain the same results.
Disagreements generally occur when observers apply different criteria to the behavior they are observing. This factor reemphasized the need for more precise behavioral definitions. Johnson and Bolstand (1974) listed five problems that can result in reduced observer agreement. The first is lack of observer accuracy due to misunderstanding or misinterpretation of instrument definition. This problem was resolved in this study by giving detailed definitions followed by a number of examples to demonstrate the actual behavior. In order to avoid misinterpretations, discussions among observers and the investigator were held periodically. Because poor observer accuracy may also stem from improper coding or out of sequence coding, the prerecorded tape and split-jack system virtually eliminated out of sequence coding in this study.

Other problems associated with observer agreement are error, reactive effect, instrument decay and consensual drift. Of these four, consensual drift tends to be the most troublesome. Drift occurs when two observers tend to apply their own idiosyncratic interpretations to behavior, or they have developed a subtle series of cues for each other during observation. Most of these problems were eliminated in this study by rotating observer settings and pairings during the data collection.

The method used in this study to demonstrate interobserver agreement was a calculation of the percent of
agreement by employing a formula suggested by Bijou, Peterson and Ault (1968):

\[ \text{Percent agreement} = \frac{\text{agreements}}{\text{agreements} - \text{disagreements}} \times 100 \]

Agreements were counted for each interval by category (observers could agree on the climate but disagree on the behavior observed in which both observers recorded the presence of the behavior). Disagreements included the coding of different climates, verbal behavior, or non-verbal behaviors within an interval, or intervals in which an observer failed to code a behavior. All intervals in which neither observer scored the behavior as occurred were ignored in calculating agreement scores. This process has been labelled scored-interval agreement (S-I). (Hawkins and Dotson, 1976) (S-I) agreement is the prevalent reliability method used in observational recording.

The method of reliability used in this study for the event recording (pla check, voice check, joking and changing activity) was as follows: the smaller total number of events tallied during each reliability session by one observer was divided by the larger total of events tallied by the other observer. Table 9 reports the obtained reliability measures for each climate, verbal behavior, non-verbal behavior I, non-verbal behavior II and for the events coded with the TEOS during the field check with each of the eight observers.

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### Table 9

Interobserver Reliability for Field Checks

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observer 1</th>
<th>Observer 2</th>
<th>Observer 3</th>
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<th>Observer 5</th>
<th>Observer 6</th>
<th>Observer 7</th>
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<td>95.2 95.9 96.0 96.1 95.2</td>
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</tr>
</tbody>
</table>

* Indicates category not coded by either observer during the reliability check.
Discussion of Reliability

The agreement levels of the climate and the verbal behavior found in this study compare favorably to the agreement level reported by Stewart (1977) and Freedman (1968). This is probably due to the fact that in the present study skill and behavioral feedback were combined ("good job" paired to skill attempt or to good behavior were treated the same and coded by the observer as A+) and thus facilitated the observers' task. The criteria of reliability determined on the basis of pilot observations for the non-verbal behaviors was 75% which was maintained through all the reliability checks (see Table 9). The comparative results and the level of reliability achieved in the present study indicate that TEOS can be used successfully to collect reliable data on the level of enthusiasm of physical education teachers in the natural setting.

Data Analysis of Individual Subjects

This section presents data collected for each of the participating subjects. Data are presented in a comparative manner between baseline and intervention. Presage and context variables concerning each subject are discussed and followed by tables and graphs presenting data collected in baseline and intervention. The tables in this section present an overall comparison for each of the 16 subjects of percentage of total intervals spent on:
1. Activity climate
2. Giving general positive statements followed by a corrective statement
3. Smiling
4. Exhibiting verbal enthusiasm
5. Exhibiting non-verbal enthusiasm
6. Exhibiting overall enthusiasm

Percent of occurrence
1. Voice inflection
2. Active engagement of students

Mean rate observation of
1. Joking
2. Change of activity

The figures in this section present in graphic form, an overall comparison of the sixteen subjects for total intervals spent:

1. Giving general positive feedback followed by corrective statements
2. Smiling
3. Exhibiting verbal enthusiasm
4. Exhibiting non-verbal enthusiasm
5. Exhibiting overall enthusiasm

A topical discussion will be presented following the tables and graph for each subject.

Subject 1

Subject 1 was the only inservice teacher who participated in this study. The data for Subject 1 were collected
from two different 6th and 7th grade coeducational classes. Activities taught by this subject included disco dance and gymnastics. During baseline, 600 intervals were observed and the same number of intervals after intervention started.

Table 1 and Table 2 provide supplementary information regarding Subject 1. Analysis of data indicate that Subject 1 has improved seven out of ten variables analyzed. Changes were made in mean percentage of voice inflection from 60% in baseline to 80% in intervention and of A/C from 0% to 4.45%. Data also show a decrease 2.85% in mean percentage of smiling behavior and of 1.1% in non-verbal enthusiasm compared to their baseline mean percentage. Subject 1 improved her initial overall enthusiasm performance of 6.8% mean percentage in baseline to 7.3% in intervention—a gain of 0.5%. Table 10 presents for Subject 1 an overall comparison of baseline and intervention of single and combined variables that communicate enthusiasm. For visual inspection, the reader is referred to Figure 6 which profiles graphically the before and after intervention data of two single and three combined variables which communicate enthusiasm.
Table 10

Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 1

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Total Intervals</th>
<th>Mean Rate/Observation</th>
<th>Total Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Baseline Minimum Maximum</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intervention Minimum Maximum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A (Climate)(^a)</td>
<td>66 48 80</td>
<td>69.5 56 84</td>
<td>3.5</td>
</tr>
<tr>
<td>A/C(^b)</td>
<td>0 0 0</td>
<td>4.45 1.70 8.50</td>
<td>4.45</td>
</tr>
<tr>
<td>Smiling</td>
<td>6.33 0.8 14.2</td>
<td>3.47 0 10.6</td>
<td>-2.85</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td>0.7 0.02 1.05</td>
<td>3.4 1.7 5.2</td>
<td>2.00</td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td>2.9 15.0 9.9</td>
<td>9.9 1.4 13.9</td>
<td>-1.1</td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td>6.8 2.1 9.3</td>
<td>7.3 2.9 9.1</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Percentage of Occurrence

| Voice Inflection          | 60 40 80 | 60 80 70 | 60 90 20 |

Percentage of Engagement

| Active Engagement of Students | 85 80 100 | 90 90 100 | 90 90 100 | 90 90 100 |

Mean Rate/Observation

| Joking                     | 0.75 0 1 1.5 0 | 3 0.75 |
| Change of Activity         | 3 1 5 3 1   | 4 0    |

\(^a\)Time spent practicing the activity

\(^b\)Positive feedback followed by corrective statement
Figure 6 - Profile of enthusiasm behavior of Subject 1.
Subject 2

Observational recording for Subject 2 took place in two combined 4th and 5th grade coeducational classes. Activities taught by this subject included team handball, volleyball and gymnastics. During baseline, 600 intervals were observed while 450 intervals were observed during intervention. Table 1 and Table 2 provide supplementary information regarding Subject 2. Analysis of data indicate a change in eight of the ten variables analyzed.

Changes in mean percentage were made in active engagement of students from 40% in baseline to 80% in intervention, and in smiling behavior from 5.03% to 21.35%. Data also show no change in mean percentage of joking and time spent on practicing activity (Climate) between baseline and intervention. Subject 2 improved his initial overall enthusiasm performance of 5.7 mean percent in baseline to 10.3% in intervention—a gain of 4.6%. The overall comparison of mean percentage baseline and intervention for subject 2 is presented in Table 11 and represented graphically in Figure 7.
### Table 11

Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 2

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Total Intervals</th>
<th>Percentage of Occurrence</th>
<th>Percentage of Engagement</th>
<th>Mean Rate/Observation</th>
<th>Total Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Baseline Minimum</td>
<td>Maximum</td>
<td>Mean</td>
<td>Intervention Minimum</td>
</tr>
<tr>
<td>A (Climate)a</td>
<td>60</td>
<td>27.7</td>
<td>86.5</td>
<td>60.5</td>
<td>40</td>
</tr>
<tr>
<td>A/Cb</td>
<td>2.60</td>
<td>0</td>
<td>7.6</td>
<td>5.37</td>
<td>3.2</td>
</tr>
<tr>
<td>Smiling</td>
<td>5.03</td>
<td>2.9</td>
<td>6.2</td>
<td>21.35</td>
<td>13.4</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td>4.3</td>
<td>3.1</td>
<td>5.5</td>
<td>6.5</td>
<td>5</td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td>6.7</td>
<td>4.6</td>
<td>9.4</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td>5.7</td>
<td>4</td>
<td>6.9</td>
<td>10.3</td>
<td>6.8</td>
</tr>
</tbody>
</table>

**Percentage of Occurrence**

| Voice Inflection | 80 | 60 | 100 | 95 | 80 | 100 | 15 |

**Percentage of Engagement**

| Active Engagement of Students | 40 | 25 | 50 | 80 | 60 | 100 | 40 |

**Mean Rate/Observation**

| Joking                        | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Change of Activity            | 2 | 1 | 4 | 3 | 3 | 3 | 1 |

*a* Time spent practicing the activity  
*b* Positive feedback followed by corrective statement
Figure 7 - Profile of enthusiasm behavior of Subject 2.
Subject 3

Subject 3 was observed in three different 7th and 9th grade coeducational classes. Gymnastics, fitness, volleyball and basketball were the activities taught by this Subject. During baseline, 560 intervals were observed and 1050 intervals were observed after intervention started. Table 1 and Table 2 provide supplementary information regarding Subject 3. Changes occurred following baseline in nine out of ten variables analyzed. Mean percentage of active engagement of students from 45.5% percentage of 90.5% and of verbal enthusiasm from 2.1% to 10%. The data also show a decrease of 0.5 in mean percentage of joking behavior. Subject 3 improved his initial overall enthusiasm performance of 2.9% mean percentage in baseline to 8.6% in intervention—a gain of 5.7%. The overall comparison of mean percentage of baseline and intervention for Subject 3 is presented in Table 12 and represented graphically in Figure 8.
### Table 12
Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 3

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Total Intervals</th>
<th>Mean</th>
<th>Baseline Minimum</th>
<th>Baseline Maximum</th>
<th>Intervention Minimum</th>
<th>Intervention Maximum</th>
<th>Mean Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A (Climate)^a</td>
<td></td>
<td>62</td>
<td>16</td>
<td>89</td>
<td>80</td>
<td>51</td>
<td>95</td>
</tr>
<tr>
<td>A/C</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6.6</td>
<td>3.8</td>
<td>8.6</td>
</tr>
<tr>
<td>Smiling</td>
<td></td>
<td>5.65</td>
<td>0</td>
<td>8.6</td>
<td>14.14</td>
<td>0.8</td>
<td>25.5</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td></td>
<td>2.1</td>
<td>0.2</td>
<td>3.1</td>
<td>10</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td></td>
<td>3.5</td>
<td>3.3</td>
<td>3.8</td>
<td>7.8</td>
<td>4.6</td>
<td>11.9</td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td></td>
<td>2.9</td>
<td>2.0</td>
<td>3.5</td>
<td>8.6</td>
<td>6.8</td>
<td>10.8</td>
</tr>
<tr>
<td>Percentage of Occurrence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voice Inflection</td>
<td></td>
<td>70</td>
<td>50</td>
<td>83</td>
<td>98</td>
<td>67</td>
<td>100</td>
</tr>
<tr>
<td>Percentage of Engagement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active Engagement of Students</td>
<td></td>
<td>45.5</td>
<td>25.6</td>
<td>61.2</td>
<td>90.5</td>
<td>43.4</td>
<td>95.5</td>
</tr>
<tr>
<td>Mean Rate/Observation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joking</td>
<td></td>
<td>1.5</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Change of Activity</td>
<td></td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

^aTime spent practicing activity

^bPositive feedback followed by corrective statement
Figure 8—Profile of enthusiasm behavior of Subject 3.

OVERALL ENTHUSIASM BEHAVIOR

VERBAL ENTHUSIASM

NON-VERBAL ENTHUSIASM

GENERAL POSITIVE FEEDBACK FOLLOWED BY CORRECTIVE STATEMENT

SMILING BEHAVIOR

PERCENTAGE OF TOTAL INTERVALS

Day of Observation
Subject 4

The data for Subject 4 were collected from three different 9th through 12th grade co-educational classes. Activities taught by this subject included basketball, volleyball, table tennis, recreational games and fencing. During baseline, 600 intervals were observed and the same number of intervals were observed after intervention started. Table 1 and Table 2 provide supplementary information regarding Subject 4. Analysis of data indicate that Subject 4 has improved ten out of ten variables analyzed. Changes were made in mean percentage of active engagement of students from 28.4% in baseline to 79.6% in intervention; smiling behavior from 6.1% to 25.9%; and non-verbal enthusiasm from 3.3% to 10.9%. Subject 4 improved her initial overall enthusiasm performance on a 2.6% mean percentage in baseline to 9% in intervention--a gain of 6.4%. The overall comparison of mean percentage of baseline and intervention for Subject 4 is presented in Table 13 and represented graphically in Figure 9.
<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Total Intervals' Mean</th>
<th>Percentage of Total Intervals' Minimum</th>
<th>Percentage of Total Intervals' Maximum</th>
<th>Percentage of Occurrence</th>
<th>Percentage of Engagement</th>
<th>Mean Rate/Observation</th>
<th>Total Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Minimum</td>
<td>Maximum</td>
<td>Mean</td>
<td>Minimum</td>
<td>Maximum</td>
<td>Change</td>
</tr>
<tr>
<td>A (Climate) ( ^{a} )</td>
<td>83</td>
<td>60</td>
<td>100</td>
<td>86</td>
<td>81</td>
<td>91</td>
<td>3</td>
</tr>
<tr>
<td>A/C ( ^{b} )</td>
<td>0.67</td>
<td>0</td>
<td>2.7</td>
<td>4.15</td>
<td>1.8</td>
<td>7.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Smiling</td>
<td>6.1</td>
<td>2.7</td>
<td>11.8</td>
<td>25.9</td>
<td>13.4</td>
<td>37.0</td>
<td>19.8</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td>1.7</td>
<td>0.2</td>
<td>4.3</td>
<td>6.1</td>
<td>1.9</td>
<td>8.9</td>
<td>4.4</td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td>3.3</td>
<td>0.4</td>
<td>8.4</td>
<td>10.9</td>
<td>7.9</td>
<td>12.9</td>
<td>7.6</td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td>2.6</td>
<td>0.3</td>
<td>6.8</td>
<td>9</td>
<td>7.5</td>
<td>10.3</td>
<td>6.4</td>
</tr>
<tr>
<td>Active Engagement of Students</td>
<td>28.4</td>
<td>10.2</td>
<td>60.7</td>
<td>79.6</td>
<td>60.4</td>
<td>97.5</td>
<td>51.2</td>
</tr>
<tr>
<td>Mean Rate/Observation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joking</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Change of Activity</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

\( ^{a} \) Time spent practicing the activity

\( ^{b} \) Positive feedback followed by corrective statement
Figure 9 - Profile of enthusiasm behavior of Subject 4.

- Overall Enthusiasm Behavior
- Verbal Enthusiasm
- Non-Verbal Enthusiasm
- General Positive Feedback Followed by Corrective Statement
- Smiling Behavior

Day of Observation
Subject 5

Observational recording for Subject 5 took place in three different 10th through 12th grade classes. Activities taught by this subject included floor-hockey, basketball, square dance and volleyball. During baseline, 450 intervals were observed and the same number of intervals were observed after intervention started. Table 1 and Table 2 provide supplementary information regarding Subject 5. Analysis of data indicates change in all the variables analyzed. Changes in mean percentage were made in A/C from 0.1% in baseline to 4.5% in intervention; in smiling behavior from 5.3% to 12.8% in intervention; and in non-verbal enthusiasm from 2.9% to 7.5%. Subject 5 improved his initial overall enthusiasm performance of 2.4% mean percentage in baseline to 7% in intervention—a gain of 4.7%. The overall comparison of mean percentage of baseline and intervention for Subject 5 is presented in Table 14 and represented graphically in Figure 10.
Table 14
Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 5

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Occurrence</th>
<th>Percentage of Total Intervals</th>
<th>Mean</th>
<th>Baseline</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Intervention</th>
<th>Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Climate)(^a)</td>
<td>75.1</td>
<td>90.3</td>
<td>88.5</td>
<td>81.1</td>
<td>98</td>
<td>13.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A/C(^b)</td>
<td>66.6</td>
<td>100</td>
<td>95</td>
<td>90.2</td>
<td>100</td>
<td>28.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smiling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Time spent practicing the activity
\(^b\) Positive feedback followed by corrective statement
Figure 10 - Profile of enthusiasm behavior of Subject 5.
Subject 6

The data for Subject 6 were collected from three different 7th through 9th grade classes. Activities taught by him included gymnastics, basketball and wrestling. Six hundred intervals were recorded during baseline and 900 intervals after intervention started. Table 1 and Table 2 provide supplementary information regarding Subject 6. Analysis of data indicate that Subject 6 has improved eight of ten variables analyzed. Changes were made in the time he spent in activity practice (A climate) from 60% in baseline to 88 mean percent in intervention; in A/C from 2.4% to 13.5% and in smiling behavior from 0% to 18.8%. Data also show a decrease of joking. Subject 6 maintained his 100% level of voice inflection in baseline throughout the intervention and improved his initial overall enthusiasm performance of 4.6% mean percent in baseline to 11.1 mean percent in intervention—a gain of 5.1%. Table 15 presents an overall comparison of baseline and intervention of single and combined variables that communicate enthusiasm. For visual inspection, the reader is referred to Figure 11 which graphically profiles the baseline and after-intervention data of two single and three combined variables which communicate enthusiasm.
Table 15
Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 6

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Total Intervals</th>
<th>Percentage of Occurrence</th>
<th>Percentage of Engagement</th>
<th>Mean Rate/Observation</th>
<th>Total Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Baseline Minimum</td>
<td>Mean</td>
<td>Intervention Minimum</td>
<td>Maximum</td>
</tr>
<tr>
<td>A (Climate)\textsuperscript{a}</td>
<td>60</td>
<td>24</td>
<td>91</td>
<td>88</td>
<td>72</td>
</tr>
<tr>
<td>A/C\textsuperscript{b}</td>
<td>24</td>
<td>0</td>
<td>5.3</td>
<td>13.5</td>
<td>3.1</td>
</tr>
<tr>
<td>Smiling</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>18.8</td>
<td>5.8</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td>3.6</td>
<td>3.1</td>
<td>4.2</td>
<td>10.6</td>
<td>6</td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td>7.8</td>
<td>1.9</td>
<td>14.8</td>
<td>11.6</td>
<td>7.5</td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td>4.6</td>
<td>2.9</td>
<td>10.1</td>
<td>11</td>
<td>7.8</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Time spent practicing the activity
\textsuperscript{b}Positive feedback followed by corrective statement
Figure 11 - Profile of enthusiasm behavior of Subject 6
SUBJECT 7

Observational recording for Subject 7 took place in three different 7th through 9th grade classes. Activities taught by this subject included gymnastics, basketball, wrestling and floor hockey. During baseline, 600 intervals were observed and 1050 intervals in intervention. Table 1 page 35 and Table 2 page 36 provide supplementary information regarding Subject 7. Analysis of data indicate a change in nine out of ten variables analyzed. Improvements in mean percentage were made in voice inflection from 70.4% in baseline to 88.5% in intervention; non-verbal enthusiasm from 1.78% to 8.3%; and, in active engagement of students from 70.5% to 95.5%. Data also show a decrease in joking between baseline to intervention. Subject 7 improved his initial overall enthusiasm performance of 1.8% mean percent in baseline to 8.9% in intervention—an impressive gain of 7.2%. The overall comparison of mean percentage baseline and intervention for Subject 7 is presented in Table 16 and represented graphically in Figure 12.
Table 16
Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 7

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Total Intervals' Mean</th>
<th>Baseline Minimum</th>
<th>Maximum</th>
<th>Intervention Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Climate)a</td>
<td>72</td>
<td>51</td>
<td>82</td>
<td>77</td>
<td>38</td>
<td>96</td>
<td>5</td>
</tr>
<tr>
<td>A/Cb</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2.4</td>
<td>0</td>
<td>5.9</td>
<td>2.4</td>
</tr>
<tr>
<td>Smiling</td>
<td>1.25</td>
<td>0.8</td>
<td>1.7</td>
<td>15.6</td>
<td>1.6</td>
<td>23.0</td>
<td>14.35</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td>1.8</td>
<td>0.4</td>
<td>2.5</td>
<td>9.8</td>
<td>2.6</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td>1.78</td>
<td>0.8</td>
<td>2.53</td>
<td>8.3</td>
<td>2.66</td>
<td>13.8</td>
<td>6.6</td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td>1.8</td>
<td>1</td>
<td>2.4</td>
<td>8.9</td>
<td>2.6</td>
<td>13.3</td>
<td>7.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage of Occurence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice Inflection</td>
</tr>
<tr>
<td>70.4</td>
</tr>
<tr>
<td>52.5</td>
</tr>
<tr>
<td>85.4</td>
</tr>
<tr>
<td>88.5</td>
</tr>
<tr>
<td>30</td>
</tr>
<tr>
<td>95.1</td>
</tr>
<tr>
<td>18.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage of Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Engagement of Students</td>
</tr>
<tr>
<td>70.5</td>
</tr>
<tr>
<td>51.5</td>
</tr>
<tr>
<td>90.4</td>
</tr>
<tr>
<td>95.5</td>
</tr>
<tr>
<td>72.4</td>
</tr>
<tr>
<td>100</td>
</tr>
<tr>
<td>25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean Rate/Observation</th>
<th>Total Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joking</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>-1</td>
</tr>
<tr>
<td>Change of Activity</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

*a* Time spent in practicing activity

*b* Positive feedback followed by corrective statement
Figure 12 - Profile of enthusiasm behavior for Subject 7.
Subject 8

The data for Subject 8 were collected from three different 9th through 12th grade co-educational classes. Activities taught by her included basketball, volleyball, table tennis, recreational games and fencing. During baseline, 450 intervals were recorded and 600 during intervention. Table 1 and Table 2 provide supplementary information regarding Subject 8. Analysis of data indicate change in nine out of ten variables analyzed. Changes in mean percentage were made in time spent in activity practice (A climate) from 43% in baseline to 80% in intervention; and in active engagement of students from 51.4% to 70.5%. Data show no change in change of activity between baseline and intervention. Subject 8 improved his initial overall enthusiasm performance of 7.2% mean percent in baseline to 9.6% in intervention—a gain of 2.4%. The overall comparison of mean percentage of baseline and intervention for Subject 8 is presented in Table 17 and represented graphically in Figure 13.
Table 17
Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 8

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Total Intervals</th>
<th>Percentage of Occurrence</th>
<th>Percentage of Engagement</th>
<th>Mean Rate/Observation</th>
<th>Total Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Minimum</td>
<td>Maximum</td>
<td>Mean</td>
<td>Minimum</td>
</tr>
<tr>
<td>A (Climate) (^a)</td>
<td>43</td>
<td>33</td>
<td>54</td>
<td>80</td>
<td>54</td>
</tr>
<tr>
<td>A/C (^b)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3.8</td>
<td>0</td>
</tr>
<tr>
<td>Smiling</td>
<td>6.2</td>
<td>0</td>
<td>10.9</td>
<td>6.4</td>
<td>1.1</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td>2.8</td>
<td>2.2</td>
<td>3.8</td>
<td>4.1</td>
<td>1</td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td>10.2</td>
<td>5.3</td>
<td>14.5</td>
<td>13.2</td>
<td>5.1</td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td>7.2</td>
<td>4.1</td>
<td>9.8</td>
<td>9.6</td>
<td>3.6</td>
</tr>
<tr>
<td>Voice Inflection</td>
<td>42.7</td>
<td>21.4</td>
<td>53.5</td>
<td>55.5</td>
<td>30.2</td>
</tr>
<tr>
<td>Active Engagement of Students</td>
<td>51.4</td>
<td>35.7</td>
<td>72.4</td>
<td>70.5</td>
<td>61.1</td>
</tr>
</tbody>
</table>

\(^a\) Time spent practicing activity
\(^b\) Positive feedback followed by corrective statement
Figure 13 - Profile of enthusiasm behavior for Subject 8.
Subject 9

Observational recording for Subject 9 took place in three different 9th to 12th grade co-educational classes. Activities taught included volleyball, basketball, table tennis, recreational games and fencing. During baseline intervals were recorded and 600 intervals during intervention. Table 1 and Table 2 provide supplementary information regarding Subject 9. Analysis of data indicate a change in all the variables analyzed. Changes in mean percentage were made in A/C from 0% in baseline to 5.32% in intervention and in smiling behavior from 4.0% to 9.97%. Subject 9 improved her initial overall enthusiasm performance of 2.5% mean percent in baseline to 6.9% in intervention—a gain of 4.4%. The overall comparison of mean percentage of baseline and intervention for Subject 9 is presented in Table 18 and represented graphically in Figure 14.
Table 18

Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 9

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Total Intervals' Baseline Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Intervention Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Climate)\textsuperscript{a}</td>
<td>78</td>
<td>70</td>
<td>94</td>
<td>86</td>
<td>80</td>
<td>92</td>
<td>8</td>
</tr>
<tr>
<td>A/C\textsuperscript{b}</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5.32</td>
<td>0</td>
<td>11.70</td>
<td>5.32</td>
</tr>
<tr>
<td>Smiling</td>
<td>4.0</td>
<td>1.60</td>
<td>5.90</td>
<td>9.97</td>
<td>1.70</td>
<td>23.10</td>
<td>5.97</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td>1.1</td>
<td>0</td>
<td>2.5</td>
<td>5.3</td>
<td>1.9</td>
<td>8</td>
<td>4.3</td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td>3.3</td>
<td>2.5</td>
<td>3.8</td>
<td>7.9</td>
<td>2.6</td>
<td>11.3</td>
<td>4.2</td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td>2.5</td>
<td>1.5</td>
<td>3.2</td>
<td>6.9</td>
<td>2.3</td>
<td>9</td>
<td>4.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage of Occurence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice Inflection</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage of Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Engagement of Students</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean Rate/Observation</th>
<th>Total Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joking</td>
<td>0.25</td>
</tr>
<tr>
<td>Change of Activity</td>
<td>2</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Time spent practicing activity
\textsuperscript{b} Positive feedback followed by corrective statement
Figure 14 - Profile of enthusiasm behavior for Subject 9.
Subject 10

The data for Subject 10 were collected from three different 9th through 12th grade co-educational classes. Basketball, volleyball, fencing, recreational games and table tennis were the activities taught by this subject. Six hundred intervals were recorded during baseline and 600 in intervention. Table 1 and Table 2 provide supplementary information regarding Subject 10. Improvements were made in all ten variables analyzed. Among the changes were A/C from 0% mean percent in baseline to 3.52% in intervention; voice inflection from 50.5% to 70.5%; and, verbal enthusiasm 0.1% to 2.6% mean percent. Subject 10 improved his initial overall enthusiasm performance of 1.5% mean percentage in baseline to 3.1% in intervention—a gain of 1.7%. The overall comparison of mean percentage of baseline and intervention for Subject 10 is presented in Table 19 and represented graphically in Figure 15.
# Table 19

Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 10

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Total Intervals</th>
<th>Percentage of Occurrence</th>
<th>Percentage of Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Baseline Minimum</td>
<td>Maximum</td>
</tr>
<tr>
<td>A (Climate)(^{a})</td>
<td>78</td>
<td>61</td>
<td>95</td>
</tr>
<tr>
<td>A/C(^{b})</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Smiling</td>
<td>0.85</td>
<td>0</td>
<td>3.40</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td>0.1</td>
<td>0</td>
<td>0.4</td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td>2.3</td>
<td>0</td>
<td>7.2</td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td>1.5</td>
<td>0</td>
<td>4.3</td>
</tr>
</tbody>
</table>

| Voice Inflection | 50.5 | 40.6 | 61.4 | 70.5 | 50 | 90.5 | 20 |

| Active Engagement of Students | 85  | 75.5 | 100  | 85.5 | 70 | 100  | 0.5 |

| Joking | 0.5  | 0    | 2    | 1    | 1  | 4    | 0.5 |
| Change of Activity | 0    | 0    | 0    | 1    | 0  | 3    | 1   |

\(^{a}\)Time spent practicing activity
\(^{b}\)Positive feedback followed by corrective statement
Figure 15 - Profile of enthusiasm behavior for Subject 10.
Subject 11

Observational recording for Subject 11 took place in two different 4th and 5th grade co-educational classes. Activities taught included gymnastics, recreational games and basketball. Six hundred intervals were recorded during baseline and 900 intervals in intervention. Table 1 and Table 2 provide supplementary information regarding Subject 11. Analysis of data indicate change in eight out of ten variables analyzed. Changes in mean percentage were made in voice inflection from 65.6% in baseline to 95.5% in intervention; in A/C from 2.25% to 9.75%; and, smiling behavior from 2.67% to 9.5%. Data also show no change in mean percentage of joking and time spent on practicing activity (A climate) between baseline and intervention. Subject 11 improved his initial overall enthusiasm performance of 5.7% mean percent in baseline to 7.9% in intervention—a gain of 2.2%. The overall comparison of mean percent and of baseline and intervention for Subject 11 is in Table 20 and represented graphically in Figure 16.
Table 20
Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 11

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Total Intervals</th>
<th>Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Baseline</td>
<td></td>
<td></td>
<td>Intervention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Minimum</td>
<td>Maximum</td>
<td>Mean</td>
<td>Minimum</td>
<td>Maximum</td>
<td></td>
</tr>
<tr>
<td>A (Climate)a</td>
<td></td>
<td>46</td>
<td>33</td>
<td>59</td>
<td>46</td>
<td>34</td>
<td>53</td>
<td>0</td>
</tr>
<tr>
<td>A/Cb</td>
<td></td>
<td>2.24</td>
<td>0</td>
<td>6.40</td>
<td>9.75</td>
<td>5.30</td>
<td>17.00</td>
<td>7.5</td>
</tr>
<tr>
<td>Smiling</td>
<td></td>
<td>2.67</td>
<td>0.80</td>
<td>7.40</td>
<td>9.50</td>
<td>3.40</td>
<td>17</td>
<td>6.83</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td></td>
<td>3.9</td>
<td>0.7</td>
<td>9.3</td>
<td>6.5</td>
<td>4.3</td>
<td>8.4</td>
<td>2.6</td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td></td>
<td>7</td>
<td>4.4</td>
<td>11.1</td>
<td>8.8</td>
<td>6.6</td>
<td>10.1</td>
<td>1.8</td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td></td>
<td>5.7</td>
<td>3</td>
<td>10.4</td>
<td>7.9</td>
<td>6</td>
<td>9.3</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Percentage of Occurrence

| Voice Inflection          | 65.6 | 40.4 | 71.9 | 95.5 | 75.4 | 100   | 29.9   |

Percentage of Engagement

| Active Engagement of Students | 85.7 | 65.1 | 100  | 90.5 | 60.1 | 100   | 4.8    |

Mean Rate/Observation

<table>
<thead>
<tr>
<th>Joking</th>
<th>Change of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Change

<table>
<thead>
<tr>
<th>Joking</th>
<th>Change of Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

\(^a^\) Time spent practicing activity
\(^b^\) Positive feedback followed by corrective statement
Figure 16 - Profile of enthusiasm behavior for Subject 11.
Subject 12

The data for Subject 12 were collected from three different 10th through 12th grade classes. Activities taught by this subject included floor hockey, square dance, volleyball, table tennis and gymnastics. Six hundred intervals were recorded in baseline and 600 in intervention. Table 1 and Table 2 provide supplementary information regarding Subject 12. Analysis of data indicate change in nine out of ten variables analyzed. Changes in mean percentage were made in smiling behavior from 6.94% in baseline to 15.03% in intervention and A/C from 1.1% to 8.8%. Data also show a decrease in joking behavior. Subject 12 improved his initial overall enthusiasm performance of 4.1% mean percent in baseline to 7.7% in intervention—a gain of 3.6%. The overall comparison of mean percentage of baseline and intervention for Subject 12 is presented in Table 21 and represented graphically in Figure 17.
Table 21
Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 12

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Mean</th>
<th>Baseline Mean</th>
<th>Baseline Minimum</th>
<th>Baseline Maximum</th>
<th>Intervention Mean</th>
<th>Intervention Minimum</th>
<th>Intervention Maximum</th>
<th>Mean Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Climate)&lt;sup&gt;a&lt;/sup&gt;</td>
<td>65</td>
<td>43</td>
<td>85</td>
<td>67</td>
<td>50</td>
<td>91</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>A/C&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1.10</td>
<td>0</td>
<td>5</td>
<td>8.80</td>
<td>6.70</td>
<td>11.30</td>
<td>7.70</td>
<td></td>
</tr>
<tr>
<td>Smiling</td>
<td>6.94</td>
<td>0.50</td>
<td>16.80</td>
<td>15.03</td>
<td>12.60</td>
<td>17.40</td>
<td>8.09</td>
<td></td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td>1.4</td>
<td>0</td>
<td>3.7</td>
<td>5.9</td>
<td>5.2</td>
<td>6.6</td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td>5.9</td>
<td>3.2</td>
<td>8.5</td>
<td>9</td>
<td>7.1</td>
<td>10.8</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td>4.1</td>
<td>1.9</td>
<td>6.6</td>
<td>7.7</td>
<td>6.6</td>
<td>9.1</td>
<td>3.6</td>
<td></td>
</tr>
</tbody>
</table>

**Percentage of Occurrence**

| Voice Inflection              | 81.5 | 77.4 | 92.6 | 95    | 85    | 100     | 13.6     |

**Percentage of Engagement**

| Active Engagement of Students | 75.5 | 42.4 | 81.1 | 85.5  | 75.5  | 95.8    | 10       |

**Mean Rate/Observation**

| Joking                         | 1.5  | 1    | 3    | 0     | 1     | 4       | -1.5     |
| Change of Activity             | 1    | 0    | 3    | 3     | 3     | 3       | 2        |

<sup>a</sup> Time spent practicing activity
<sup>b</sup> Positive feedback followed by corrective statement
Figure 17 - Profile of enthusiasm behavior for Subject 12.
Subject 13

Observational recording for Subject 13 took place in two different 4th and 5th grade co-educational classes. Activities taught by this subject included gymnastics and volleyball. Six hundred intervals were recorded during baseline and 760 in intervention. Table 1 and Table 2 provide supplementary information regarding Subject 13. Improvements were made in all the variables analyzed. An improvement in mean percentage was made in active engagement of students from 55.1% in baseline to 75.2% in intervention. Data also show small changes in mean percentage of verbal enthusiasm (1.9%) and non-verbal enthusiasm (1.9%). Subject 13 improved his initial overall enthusiasm performance of three mena percent in baseline to 4.9% in intervention—a gain of 1.9%. The overall comparison of mean percentages of baseline and intervention for Subject 13 is presented in Table 2 and represented graphically in Figure 18.
<table>
<thead>
<tr>
<th>Behavior</th>
<th>Mean Baseline</th>
<th>Percentage of Total Baseline Intervals</th>
<th>Mean Intervention</th>
<th>Percentage of Total Intervention Intervals</th>
<th>Mean Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (Climate)(^a)</td>
<td>61</td>
<td>40</td>
<td>79</td>
<td>75</td>
<td>44</td>
</tr>
<tr>
<td>A/C(^b)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.66</td>
<td>0</td>
</tr>
<tr>
<td>Smiling</td>
<td>4.65</td>
<td>1.70</td>
<td>9.60</td>
<td>7.50</td>
<td>1.70</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td>0.8</td>
<td>0</td>
<td>2</td>
<td>2.7</td>
<td>5.2</td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td>4.5</td>
<td>3</td>
<td>7.1</td>
<td>6.4</td>
<td>4.7</td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td>3</td>
<td>2.1</td>
<td>5.1</td>
<td>4.9</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Percentage of Occurrence

| Voice Inflection             | 20.5          | 10.5                                   | 30.4              | 25.5                                     | 20.5        |
| Active Engagement of Students | 55.1          | 35.5                                   | 85.2              | 75.2                                     | 45.1        |
| Mean Rate/Observation         |               |                                        |                   | Total Change                              |             |
| Joking                       | 0             | 0                                      | 0                 | 1                                        | 0           |
| Change of Activity           | 0             | 0                                      | 0                 | 2                                        | 1           |

\(^a\) Time spent practicing activity
\(^b\) Positive feedback followed by corrective statement.
Figure 18 - Profile of enthusiasm behavior for Subject 13.
Subject 14

The data for Subject 14 were collected from two different 4th and 5th grades and three different 7th to 9th grade co-educational classes. Four hundred and fifty intervals were recorded in baseline and 1050 in intervention. Table 1 and Table 2 provide supplementary information regarding subject 14. Analysis of data indicate that Subject 14 has improved in eight out of ten variables analyzed. Improvements in mean percentage were made in voice inflection from 70.6% in baseline to 91.1% in intervention and of active engagement of students from 60.4% to 75.1%. The data also show that no changes were made in time spent on practicing the activity (A climate) (66%) and in change activity (2%). Subject 14 improved his initial overall enthusiasm performance of 3% mean percent in baseline to 9.2% in intervention—a gain of 6.2%. The overall comparison of mean percentage of baseline and intervention for Subject 14 is presented in Table 23 and represented graphically in Figure 19.
Table 23

Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 14

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Total Intervals</th>
<th></th>
<th></th>
<th>Mean Intervals</th>
<th></th>
<th></th>
<th>Mean Intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline</td>
<td>Mean Min</td>
<td>Max</td>
<td>Mean Min</td>
<td>Max</td>
<td>Mean</td>
<td>Min</td>
</tr>
<tr>
<td>A (Climate)</td>
<td></td>
<td>66</td>
<td>54 79</td>
<td>67 57</td>
<td>76</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>A/C</td>
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<td>1.40</td>
<td>0 4.20</td>
<td>6.97 0</td>
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<tr>
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<td>7 9.50</td>
<td>10.74 6.20</td>
<td>18.00</td>
<td>2.78</td>
<td></td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td></td>
<td>3.7</td>
<td>1.7 6.1</td>
<td>7.5 1</td>
<td>9.1</td>
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<tr>
<td>Non-Verbal Enthusiasm</td>
<td></td>
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<td>4.4 13.8</td>
<td>10.3 6.3</td>
<td>12.9</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td></td>
<td>3</td>
<td>3.3 10.7</td>
<td>9.2 7.4</td>
<td>10.6</td>
<td>6.2</td>
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<table>
<thead>
<tr>
<th>Percentage of Occurrence</th>
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<th></th>
<th></th>
<th>Mean Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice Inflection</td>
<td></td>
<td>70.6</td>
<td>50.4 80.6</td>
<td>91.1 70.4</td>
</tr>
</tbody>
</table>

| Percentage of Engagement     |                               |           |           |               |           |           |     |     |     |
| Active Engagement of Students|                               | 60.4      | 40.5 85.7 | 75.5 64.4     | 95.1   | 15.1     |            |      |        |

| Mean Rate/Observation        | Total Change                  |           |           |               |           |           |     |     |     |
| Joking                       |                               | 1.5       | 0 3 2     | 0 4           | 0.5     |          |     |     |     |
| Change of Activity           |                               | 2         | 1 4 2     | 2 2           | 0       |          |     |     |     |

\(^a\) Time spent practicing activity

\(^b\) Positive feedback followed by corrective statement
Figure 19 - Profile of enthusiasm behavior for Subject 14.
Subject 15

Observational recording for Subject 15 took place in three different 7th through 9th grade co-educational classes. Four hundred and fifty intervals were recorded during baseline and 600 in intervention. Table 1 and Table 2 provide supplementary information regarding Subject 15. Analysis of data indicate that Subject 15 has improved nine out of ten variables analyzed. Changes were made in mean percentage of active engagement of students from 40.5% in baseline to 75.5% in intervention; in A/C from 0% to 5.72%; and, in non-verbal enthusiasm from 3.1% to 2.5%. Data also show a decrease in change of activity (-1). Subject 15 improved his initial overall enthusiasm performance of 1.9% mean percentage in baseline to 8.7% in intervention—a gain of 6.8%. The overall comparison of mean percentage of baseline and intervention for Subject 15 is presented in Table 24 and represented graphically in Figure 20.
Table 24
Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 15

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Total Intervals</th>
<th>Percentage of Occurrence</th>
<th>Percentage of Engagement</th>
<th>Mean Rate/Observation</th>
<th>Total Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Minimum</td>
<td>Maximum</td>
<td>Mean</td>
<td>Minimum</td>
</tr>
<tr>
<td>A (Climate)a</td>
<td>43</td>
<td>40</td>
<td>46</td>
<td>60</td>
<td>46</td>
</tr>
<tr>
<td>A/Cb</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5.72</td>
<td>0</td>
</tr>
<tr>
<td>Smiling</td>
<td>0.70</td>
<td>0</td>
<td>2.10</td>
<td>7.72</td>
<td>4.20</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7.6</td>
<td>0.5</td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td>3.1</td>
<td>2.2</td>
<td>4.2</td>
<td>9.5</td>
<td>3.7</td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td>1.9</td>
<td>1.3</td>
<td>2.6</td>
<td>8.7</td>
<td>2.6</td>
</tr>
</tbody>
</table>

*Time spent practicing activity*

*Positive feedback followed by corrective statement*
Figure 20 - Profile of enthusiasm behavior for Subject 15.
Subject 16

Data for Subject 16 were collected from two different 7th and 8th grade co-educational classes. Gymnastics and disco dance were the activities taught by this subject. Six hundred intervals were recorded in baseline and 1050 in intervention. Table 1 and Table 2 provide supplementary information regarding Subject 16. Analysis of data indicate a change in eight out of ten variables analyzed. Improvements in mean percentage were made in voice inflection from 40.5% in baseline to 75.7% in intervention and in smiling behavior from 5.65% to 13.67%. Data also show that there were no changes in joking, and in non-verbal enthusiasm. Subject 16 improved her initial overall performance of 6.7% mean percent in baseline to 10.3% in intervention—a gain of 1.5%. The overall comparison of mean percentage of baseline and intervention for Subject 16 is presented in Table 25 and represented graphically in Figure 21.
Table 25
Overall Comparison of Single and Combined Variables Communicating Teacher Enthusiasm for Subject 16

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Percentage of Total Intervals</th>
<th>Percentage of Occurrence</th>
<th>Percentage of Engagement</th>
<th>Mean Rate/Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Baseline Minimum</td>
<td>Maximum</td>
<td>Mean</td>
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<tr>
<td></td>
<td>Mean</td>
<td>Minimum</td>
<td>Maximum</td>
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</tr>
<tr>
<td>A (Climate)(^a)</td>
<td>64</td>
<td>44</td>
<td>87</td>
<td>74</td>
</tr>
<tr>
<td>A/C(^b)</td>
<td>0.62</td>
<td>0</td>
<td>2.50</td>
<td>4.17</td>
</tr>
<tr>
<td>Smiling</td>
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<td>0</td>
<td>10.00</td>
<td>13.67</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td>1</td>
<td>0.5</td>
<td>18</td>
<td>4.8</td>
</tr>
<tr>
<td>Non-Verbal Enthu.</td>
<td>10.4</td>
<td>9.5</td>
<td>11</td>
<td>10.4</td>
</tr>
<tr>
<td>Overall Enthu.</td>
<td>6.7</td>
<td>5.9</td>
<td>7.2</td>
<td>8.2</td>
</tr>
<tr>
<td>Voice Inflection</td>
<td>40.5</td>
<td>30.7</td>
<td>62.4</td>
<td>75.7</td>
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<td>Active Engagement of Students</td>
<td>85.1</td>
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<td>95.6</td>
<td>88.4</td>
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<td>Joking</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Change of Activ.</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

\(^a\)Time spent practicing the activity
\(^b\)Positive feedback followed by corrective statement
Figure 21 - Profile of enthusiasm behavior for Subject 16.
Discussion of Data Analysis for Individual Subjects

The results presented in this section indicate that five subjects improved all ten variables analyzed; five improved nine out of the ten variables, five improved eight out of ten variables; and, one subject improved seven out of ten variables analyzed. Four subjects decreased and two did not change their levels of joking behavior. The remaining ten subjects did not improve their joking behavior significantly. The reason for this is probably that the present researcher did not find a method to train the subjects to increase their level of joking behavior. Mean percent of students actively engaged in the activity learned, rose from 64.6% in baseline to 85.0% in intervention, which indicates that during intervention, the subjects kept more students busy practicing the learned activity.

Mean percentage of A/C of eight subjects which was zero during baseline, improved substantially after intervention from 1.66% (Subject 13) to 6.60% (Subject 3). The findings in this section also indicate clearly that Subject 1, the only inservice teacher participating in the study, did not improve significantly in two of the combined variables (verbal and overall enthusiasm) and even dropped in her non-verbal enthusiasm performance (-1.1). It is important to note that Subject 1's performance of non-verbal (11%) and overall (6.8%) enthusiasm before intervention was initially high compared to other subjects. Analysis of
data also show that all the subjects who participated in this study improved their voice inflection between 5.0% and 35.2% and their overall enthusiasm (Combination of ten single verbal and non-verbal behaviors which communicate enthusiasm) between 0.5% and 6.8% mean percent of change. The findings presented in this section show that the subjects improved their enthusiasm from baseline to intervention. The question whether the improvement was due to intervention or not will be discussed later in this chapter.

**Analysis of Six Selected Variables That Communicate Enthusiasm**

Another way to examine the data collected in this study is to gather the data obtained for a given behavior from all the subjects. For this purpose six variables were selected to be examined regarding the different level of performance of the subjects between baseline and intervention and the magnitude of this difference. The variables selected were:

1. A (Climate)—Time spent on practicing the activity
2. Smiling behavior
3. A/C—General behavior or skill feedback followed by corrective statement given by the teacher
4. Verbal Enthusiasm—Combination of general behavior or skill feedback, specific skill or behavior feedback, positive hustling and A/C
5. Non-Verbal Enthusiasm—Combination of touching, teacher modeling, teacher participation in the activity, gestures, smiling and laughing
6. Overall Enthusiasm—Combination of the non-verbal and verbal enthusiasm
The mean percentage of the combined variables was computed by adding the mean % of each variable included in the combination and dividing it by the total number of variables of the combination.

A (Climate)

A (Climate) is defined in this study as the period of time in class when the students were engaged in active movement or physical activity, performances that are consistent with the objectives of the class. It also refers to the period of time during activity in which the teacher provides further instruction, related to the activity or task. Table 26 compares the mean percentage scores of activity time spent by each subject in baseline and intervention. The data presented in this table indicates that the mean percent of activity time spent by the subjects in baseline ranged from 42.6% (Subject 15) to 86.66% (Subject 9). The overall mean percent in baseline for all subjects was 65.53. In intervention, the mean percent range from 45.76 (Subject 11) to 87.8% (Subject 6). The overall mean percentage in intervention for all subjects was 73.1%, a gain of 7.6%.
| Sub. | Baseline | | | | | Intervention | | | | | | | | Mean | Change | * | | | |
| 1    | 66.05    | 14.94 | 56.00 | 84.10 | 69.52 | 14.18 | 48.00 | 80.00 | 3.5 | 0.7473 |
| 2    | 60.60    | 25.38 | 27.70 | 86.50 | 60.52 | 18.64 | 40.70 | 85.00 | 0  | 0.9964 |
| 3    | 62.45    | 33.44 | 16.10 | 89.10 | 80.21 | 14.41 | 51.30 | 95.30 | 18 | 0.2154 |
| 4    | 83.30    | 18.90 | 60.00 | 100.00 | 86.37 | 4.05 | 81.20 | 91.10 | 3  | 0.7612 |
| 5    | 76.46    | 24.25 | 48.50 | 91.70 | 81.76 | 0.56 | 81.30 | 82.40 | 6  | 0.7415 |
| 6    | 59.60    | 27.94 | 24.50 | 91.30 | 87.87 | 8.41 | 72.00 | 100.00 | 28 | 0.1358 |
| 7    | 71.70    | 13.95 | 51.30 | 82.20 | 77.40 | 19.32 | 58.70 | 86.00 | 5  | 0.6140 |
| 8    | 43.43    | 10.57 | 33.30 | 54.40 | 80.27 | 17.79 | 54.20 | 92.50 | 37 | 0.0254 |
| 9    | 86.66    | 5.95  | 80.70 | 92.60 | 78.10 | 10.80 | 70.80 | 94.10 | 8  | 0.2418 |
| 10   | 77.87    | 14.45 | 60.60 | 95.30 | 84.15 | 13.22 | 68.60 | 100.00 | 6  | 0.5455 |
| 11   | 46.40    | 10.71 | 33.30 | 59.30 | 45.76 | 7.57 | 54.00 | 53.30 | 1.36| 0.9148 |
| 12   | 65.26    | 14.94 | 43.30 | 84.70 | 67.30 | 20.95 | 50.00 | 90.60 | 2  | 0.8762 |
| 13   | 75.32    | 23.40 | 44.00 | 100.00 | 60.94 | 16.97 | 40.00 | 78.70 | 14 | 0.3158 |
| 14   | 64.43    | 12.66 | 54.10 | 79.40 | 66.43 | 6.75 | 57.50 | 77.50 | 0  | 0.9782 |
| 15   | 42.66    | 3.55  | 40.00 | 46.70 | 59.97 | 10.24 | 45.80 | 68.30 | 17 | 0.0404 |
| 16   | 64.20    | 20.05 | 43.50 | 87.30 | 73.94 | 13.52 | 53.30 | 87.50 | 10 | 0.3567 |

*t-test, p<0.05

Table 26 - Comparison of mean percentage of activity time spent by each subject.
Smiling

Smiling was defined for this study as the time a teacher exhibits a facial expression which communicates happiness or amusement usually through parting the lips and loosening of facial muscles. Table 27 compares the mean percentage scores of smiling behavior exhibited by each subject in baseline and in intervention. The overall mean percent in baseline for all subjects was 4.10% while in intervention it was 12.33%, an overall improvement of 8.23% mean percent. The range of improvement was from 0.2% (Subject 8) to 18.8% (Subject 6) mean percent. The data also show a decrease of 2.85% mean percent from baseline to intervention for Subject 1.
<table>
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<td>maxi</td>
<td>$\bar{X}$</td>
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</table>

**t-test, p < 0.05**

**Table 27 - Comparison of mean percentage of smiling behavior exhibited by subjects.**
A/C was defined for this study as the times that the teacher provides general positive and behavior feedback immediately followed by a corrective statement. Table 28 compares the mean percentage scores of A/C exhibited by each subject in baseline and in intervention. The data presented in this table indicates that the mean percent of A/C given by the subjects ranged between 0% subjects (1, 3, 5, 8, 9, 10, 13, 15) and 2.37% (Subject 6). The overall mean percent in baseline for all subjects was 0.76%. In intervention, the mean percent ranged from 1.66 (Subject 13) to 15.57 (Subject 7). The overall mean percentage in intervention for all subjects was 6.50%—a gain over baseline of 5.74%.
<table>
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<th>SD</th>
<th>min</th>
<th>maxi</th>
<th>X</th>
<th>SD</th>
<th>min</th>
<th>maxi</th>
<th>Mean change</th>
<th>*t-test, p &lt; 0.05</th>
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Table 28 - Comparison of mean percent of A/G, exhibited by subjects.
Verbal Enthusiasm

Verbal enthusiasm behavior is defined in this study as a combination of behavior and skill feedback general, behavior and skill feedback specific, A/C and positive hustling (time teacher uses verbal statements to activate or intensity the motor and the behavioral performance of the students). Table 29 compares the mean percentage scores of verbal enthusiasm exhibited by each subject in baseline and in intervention. The overall mean percent in baseline for all subjects was 1.95% and in intervention 6.26% which was an overall improvement of 4.3% mean percent. The range of improvement was between 14% (Subject 8) and 8% (Subject 7) mean percent.
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_t-test, p<0.05_

_Table 29 - Comparison of mean percentage of verbal enthusiasm behavior exhibited by subjects._
Non-Verbal Enthusiasm

Non-verbal enthusiasm is defined in this study as a combination of touching (time the teacher touches a student to communicate an inner positive affective feeling such as a pat on back or hug), teacher modeling, teacher participation, smiling, laughing and gestures (time the teacher moves hands to indicate or illustrate direction, idea or feeling). Table 30 compares the mean percentage scores of non-verbal enthusiasm exhibited by each subject in baseline and intervention. The overall mean percent in baseline for all subjects was 5.76 while in intervention it was 9.28—an overall improvement of 3.52 mean percent. Improvement ranged between 1.2% mean percent (Subject 16) and 7.6 (Subject 4). The data also show a decrease of 1.1 mean percent from baseline to intervention for Subject 1.
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t-test, p \leq 0.05

Table 30 - Comparison of mean percentage of non-verbal enthusiasm behavior exhibited by subjects.
Overall Enthusiasm Behavior

Overall enthusiasm behavior is defined in this study as a combination of non-verbal and verbal enthusiasm. Table 31 compares the mean percent scores of overall enthusiasm behavior exhibited by each subject in baseline and intervention. The data presented in this table indicates that the mean percent of overall enthusiasm of all subjects in baseline ranged between 1.5% (Subject 10) and 7.3% (Subject 8). The overall mean percent in baseline for all subjects was 4.24%. In intervention, the mean percent ranged from 3.2% (Subject 10) to 11.2% (Subject 6). The overall mean percentage in intervention for all subjects was 7.82%—a gain over baseline of 3.58%.
| Sub. | X   | SD  | mini | maxi | X   | SD  | mini | maxi | mean change | *  
|------|-----|-----|------|------|-----|-----|------|------|-------------|-----
| 1    | 6.8 | 3.2 | 2.1  | 9.3  | 7.3 | 2.9 | 9.1  | 0.5  | 0.8424      |     |
| 2    | 5.8 | 1.2 | 4.05 | 6.91 | 10.4| 2.6 | 6.8  | 12.4 | 4.6         | 0.0191 |
| 3    | 3.0 | 0.6 | 2.1  | 3.5  | 8.7 | 1.6 | 6.8  | 10.8 | 5.7         | 0.0001 |
| 4    | 2.7 | 2.8 | 0.4  | 6.8  | 9.05| 1.3 | 7.6  | 10.3 | 6.4         | 0.0065 |
| 5    | 2.4 | 0.3 | 2.1  | 2.8  | 7.0 | 2.1 | 5.8  | 9.4  | 4.7         | 0.0182 |
| 6    | 6.2 | 3.4 | 2.9  | 10.1 | 11.2| 2.6 | 7.9  | 15.3 | 5.1         | 0.0217 |
| 7    | 1.8 | 0.6 | 1.1  | 2.45 | 8.95| 3.45| 2.7  | 13.3 | 7.2         | 0.0005 |
| 8    | 7.3 | 2.9 | 4.1  | 9.8  | 9.6 | 5.9 | 3.6  | 16.9 | 2.4         | 0.5593 |
| 9    | 2.5 | 0.9 | 1.5  | 3.3  | 6.9 | 3.1 | 2.35 | 9.0  | 4.4         | 0.0652 |
| 10   | 1.5 | 2.0 | 0    | 4.4  | 3.2 | 2.2 | 0    | 4.7  | 1.7         | 0.2949 |
| 11   | 5.75| 3.25| 3.0  | 10.4 | 7.9 | 1.3 | 6.0  | 9.3  | 2.2         | 0.2798 |
| 12   | 4.2 | 1.7 | 1.9  | 6.6  | 4.8 | 1.3 | 6.6  | 9.15 | 3.7         | 0.0201 |
| 13   | 3.05| 1.4 | 2.1  | 5.1  | 4.9 | 0.6 | 4.0  | 5.5  | 1.9         | 0.0293 |
| 14   | 6.3 | 3.9 | 3.4  | 10.7 | 9.2 | 1.3 | 7.4  | 10.7 | 2.9         | 0.3257 |
| 15   | 1.9 | 0.7 | 1.35 | 2.7  | 8.75| 4.1 | 2.7  | 11.2 | 6.8         | 0.0429 |
| 16   | 6.7 | 0.6 | 5.95 | 7.2  | 8.3 | 2.2 | 5.5  | 11.2 | 1.5         | 0.1214 |

**t-test, p < 0.05**

*Table 31 - Comparison of overall enthusiasm behavior.*
Discussion

The data reported in this section indicates that fourteen out of sixteen subjects increased the time spent practicing the learned activity from baseline to intervention. The improvement in mean percentage ranged from 1.36 (Subject 11) to 37.0% (Subject 8). Subject 2 and 14 which had 60.6% and 66.43% mean percent respectively in baseline maintained the same mean percentage in intervention. The mean percent of A (Climate) for all subjects in intervention (73.1%) was higher than the 65.7% reported by Friedman (1978). In terms of statistical significance of change between baseline and intervention, only Subject 8 and 15 achieved a statistically significant change at P<0.05.

Fifteen out of sixteen subjects increased their smiling behavior from baseline to intervention. This improvement in mean percentage ranged from 0.2% (Subject 8) to 18.8% (Subject 6). The reason for the decrease of 2.85% from baseline to intervention for Subject 1 is unknown. Statistical analysis of the data showed significant change in smiling behavior from baseline to intervention in subjects 2, 3, 4, 6, 7, 11, 12, 13 and 15 at P<0.05 level. All the subjects improved their verbal enthusiasm from baseline to intervention. The improvement ranged from 1.4% (Subject 8) to 8.0% (Subject 7) mean percent. Statistical analysis of the data showed significant changes in verbal enthusiasm performance of subjects 1, 2, 3, 4, 5, 6, 7, 9, 10, 12, 14, 139.
15 and 16 at P<0.05 level. The data also showed that fourteen out of sixteen subjects improved their non-verbal enthusiasm from baseline to intervention in the range of 1.2% mean percent (Subject 10) to 7.6% (Subject 4). Subject 16 did not improve her initial high (10.45%) non-verbal enthusiasm performance from baseline to intervention. Subject 1 decreased her non-verbal enthusiasm performance from 11% in baseline to 9.96% in intervention which was due to the decrease in smiling behavior. Statistical analysis of the data showed significant changes also in non-verbal enthusiasm performance of subjects 2, 3, 4, 5, 7 and 15 at P<0.005 level. All subjects who participated in this study improved their overall enthusiasm performance. This improvement ranged from 0.5% (Subject 1) to 7.2% (Subject 7) mean percent. Statistical analysis of the data showed a significant change at P<0.05 level from baseline to intervention in Subjects 2, 3, 4, 5, 6, 7, 12, 13 and 14. Subjects 1, 8, 11 and 15 who did not show a significant change between baseline and intervention, ranged from 5.7% to 7.3% in their initial performance of overall enthusiasm which were the highest mean percents achieved in baseline among all the subjects.
Probe Multiple Baseline Analysis

The primary analysis of the data was made by using a probe multiple baseline design across subjects or three groups of subjects. (Horner and Baeer, 1978) With regard to this design, Pechacek (1978) stated:

"...Within multiple baseline experiments, several baselines are formed and then the independent variable (interventions) are sequentially introduced into the environment of each baseline. Treatment effects are demonstrated when each baseline changes in the desired direction only after the intervention (page 359). By intervening upon one group of subjects while maintaining baseline rate in the other two groups of subjects, a functional relationship is demonstrated."

In his book Measurements and Analysis of Behavioral Techniques (1974) Cooper stated that:

"...The application of the same intervention procedure to the second behavior condition or individual may further increase confidence that the treatment variable was the factor responsible for behavior change. The multiple baseline design employing two baselines can provide strong implications concerning effectiveness of the intervention techniques ... usually three or four baselines will produce almost completely convincing results. (page 137)"

Observation of baseline for the present study started on January 12, 1979 for all 16 subjects participating in the study. The first group of six subjects started intervention training on January 31, 1979 and terminated it on February 7, 1979. The second group started intervention on February 8, 1979 and terminated it on February 15, 1979. The third group of subjects went into training intervention on February 16, 1979 and finished on February 23, 1979. Observation
of all the subjects continued until March 13, 1979. After intervention started, and whenever observed, subjects received immediate feedback on their enthusiasm performance by the observers and were shown the data previously recorded. Two weeks before the termination of the study, whenever an observation was taken, the subjects did not receive any feedback from the observers in order to facilitate future generalization.

Results

Figure 22 represents the daily mean percent of total intervals of verbal enthusiasm behavior scores for each group of subjects across experimental conditions. The overall mean percent of total intervals of verbal enthusiasm during baseline condition for Group I was 2.05%; 1.48% for Group II; and 2.45% for Group III. The overall mean percent of total intervals during intervention condition for Group I was 5.78%—a gain of 3.73%, for Group II 6.11%—a gain of 5.23%, and for Group III 7.0%—a gain of 4.55%. The results of the t-test showed significant differences in verbal enthusiasm (P<0.05) between baseline and intervention, of four subjects from Group I (2, 3, 4, 9), all the subjects from Group II (5, 7, 12, 16), and three subjects from Group III (6, 14, 15).

Figure 23 represents the daily mean percent of total intervals of non-verbal enthusiasm behavior scores for each group of subjects across experimental conditions. The
The overall mean percent of total interval of non-verbal enthusiasm during baseline condition for Group I was 4.9%; for Group II 5.27%; and for Group III 6.09%. The overall mean percent of total intervals of non-verbal enthusiasm during intervention condition for Group I was 9.40%—a gain of 4.49%. Group II had 8.85—a gain of 3.58% and Group III showed 10.91%—a gain of 4.82%. The results of the t-test showed significant differences in non-verbal enthusiasm (P<0.05) between baseline and intervention of three subjects from Group I (2, 3, 4), three subjects from Group II (5, 7, 12) and three subjects from Group III (6, 13, 15).

Figure 24 represents the daily mean percent of total intervals of overall enthusiasm behavior scores for each group of subjects across experimental conditions. The overall mean percent of total intervals of enthusiasm behavior during baseline condition for Group I was 3.8%; for Group II 3.7%; and, for Group III 4.6%. The overall mean percent of total intervals during intervention condition for Group I was 7.9—a gain of 4.1%; for Group II 7.2—a gain of 3.5%; and, for Group III 8.3%—a gain of 4.1%. The results of the t-test showed significant differences in overall enthusiasm (P<0.05) between baseline and intervention of three subjects from Group I (2, 3, 4), for two from Group II (5, 7) and two from Group III (5, 16).
Discussion

The results obtained from analysing the probe baseline design regarding the verbal enthusiasm performance of the subjects indicated that the training intervention was responsible for the subsequent improvement of fourteen subjects' verbal enthusiasm performance. With the exception of Subjects 2, 9 and 11 who showed a trend toward therapeutic change in the last phase of the baseline, all the subjects showed a stable and consistent performance of verbal enthusiasm during baseline.

The results of the t-test showed that eleven subjects improved their verbal enthusiasm performance significantly (P<0.05). The mean percent gain in verbal enthusiasm performance ranged from 3.73% to 5.23% for the three groups and represented a substantial gain in terms of improvement of each of the variables that verbal enthusiasm is part of.

The training intervention was also responsible for the improvement of all subjects' non-verbal enthusiasm performance with the exception of Subject 16. Subjects 5, 6, 8, 11 and 13 showed a trend toward therapeutic change in the last phase of baseline. The remaining ten subjects showed a stable and consistent performance of non-verbal enthusiasm. Some degree of variability in the non-verbal enthusiasm performance of the subjects as shown in Figure 23 might be due to the occasional needs of the teacher to smile less in order to effect change, for example, when there is a discipline problem. The results of the t-test showed
that nine subjects improved their non-verbal enthusiasm performance significantly (P<0.05). The mean percent gain in non-verbal enthusiasm performance of the three groups which ranged from 3.58% to 4.82% was a substantial gain in terms of improvement of each of the variables that non-verbal enthusiasm consisted of. When a subject improved each of the single behaviors that communicate non-verbal enthusiasm even a little, the performance of overall non-verbal enthusiasm was visible. Figure 24 which presents the daily mean percent of total intervals of overall enthusiasm behavior scores for each group of subjects across experimental conditions showed that the training intervention was responsible for the improvement of the subjects' enthusiasm performance. Subjects 6, 8 and 13 showed a trend toward a therapeutic change in the last phase of baseline. The remaining subjects showed a stable and consistent performance of overall enthusiasm. The results of the t-test showed that eight of the subjects improved their overall enthusiasm performance significantly (P<0.05). The mean percent gain in overall enthusiasm performance of the three groups which ranged from 3.5% to 4.1% was a substantial gain considering the fact that overall enthusiasm consisted of ten non-verbal and verbal indicants.
Summary

The probe multiple baseline design was used to determine the degree to which changes in enthusiasm behavior were attributable to the intervention training designed to increase the level of enthusiasm of fifteen pre-service physical education teachers. Table 32 summarizes the change in mean percentage of verbal, non-verbal and overall enthusiasm achieved by the three groups.

These results and the probe multiple baseline design graphs demonstrate that the implementation of the training intervention was responsible for the improvement of the subjects' enthusiasm performance in a natural setting. However, this study does not claim generalization of the new behavior acquired by the subjects because even though immediate feedback was removed in the last two weeks of observation, the observer's presence in the gym had some effect on the subsequent teacher enthusiasm performance and because the time which elapsed between the end of the training intervention (mini course) and the end of the study was too short for generalization to occur.

Correlational Analysis

A final mode of analysis was to correlate selected student's responses on the written questionnaire with the observational data from the TEOS. The purpose of this analysis was to test possible correlation between:
Table 32

Overall Mean Percent of Verbal, Non-Verbal and Overall Enthusiasm Achieved by the Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Verbal Baseline</th>
<th>Intervention</th>
<th>Gain</th>
<th>Non-Verbal Baseline</th>
<th>Intervention</th>
<th>Gain</th>
<th>Overall Enthusiasm Baseline</th>
<th>Intervention</th>
<th>Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.05</td>
<td>5.78</td>
<td>3.73</td>
<td>4.91</td>
<td>9.40</td>
<td>4.49</td>
<td>3.8</td>
<td>7.9</td>
<td>4.1</td>
</tr>
<tr>
<td>2</td>
<td>1.48</td>
<td>6.71</td>
<td>5.23</td>
<td>5.27</td>
<td>8.85</td>
<td>3.58</td>
<td>3.7</td>
<td>7.2</td>
<td>3.5</td>
</tr>
<tr>
<td>3</td>
<td>2.45</td>
<td>7.00</td>
<td>4.55</td>
<td>6.09</td>
<td>10.91</td>
<td>4.82</td>
<td>4.6</td>
<td>8.7</td>
<td>4.1</td>
</tr>
</tbody>
</table>
A. Class mean score of questions which asked students to rank the teacher according to the extent to which he/she exhibited selected behavior indicants which communicated enthusiasm with the mean percent of total intervals obtained by the TEOS for the same selected behaviors

B. Class mean score of the questions which asked students to decide whether or not the exhibited amount of selected enthusiasm behavior was sufficient with mean percent of total intervals obtained by the TEOS for the same selected behaviors

C. Class mean score of the question which asked students to decide whether or not their teacher was enthusiastic compared with the mean percentage of overall enthusiasm behavior obtained by the TEOS

The observational recorded by TEOS were correlated to 3,600 questionnaires divided into four different categories of responding students:

1. Elementary students K-6 (33 observations)
2. Junior High students 7-8 (53 observations)
3. Senior High students 10-12 (41 observations)
4. Overall number responding students (131 observations)
Results

The following are results of correlational analysis grouped into tables. The level of probability at which the results of this correlational analysis would be considered statistically significant was set at 0.05 for all aspects of the data analyses.

Table 33

Correlation Between Class Mean Score for Question 1 and Mean Percent of Smiling

<table>
<thead>
<tr>
<th>Question 1: Did the teacher who just taught you smile?</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Much</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Much</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smiling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J.H.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sr. High</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at P<0.05

Table 34

Correlation Between Class Mean Score for Question 2 and Mean Percent of Smiling

| Question 2: Do you think he/she smiled enough? Yes/No |
|------------------------------------------------------|---|---|---|---|
| Smiling                                              | 1 | 2 | 3 | 4 |
| Elementary                                           |   |   |   |   |
| J.H.                                                 |   |   |   |   |
| Sr. High                                             |   |   |   |   |
| Overall                                              |   |   |   |   |

* Significant at P<0.05

152
Table 35

Correlation Between Class Mean Score for Question 3 and Mean Percentage of Overall Enthusiasm

<table>
<thead>
<tr>
<th>Question 3: Did the teacher who just taught you keep you busy (practicing, playing)?</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>almost half of the time</td>
<td>less than half the time</td>
<td>half the time</td>
<td>more than half the time</td>
<td>almost all the time</td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>J.H.</td>
<td>Sr. High</td>
<td>Overall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A (Climate)</td>
<td>.06</td>
<td>.04</td>
<td>.03</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>Enthusiasm</td>
<td>.28</td>
<td>.17</td>
<td>.35*</td>
<td>.35</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at P<0.05

Table 36

Correlation Between Class Mean Score for Question 4 and Mean Percentage of A (Climate) and Overall Enthusiasm

<table>
<thead>
<tr>
<th>Question 4: Were you busy practicing and playing enough? Yes/No</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>J.H.</td>
<td>Sr. High</td>
<td>Overall</td>
<td></td>
</tr>
<tr>
<td>A (Climate)</td>
<td>.11</td>
<td>.01</td>
<td>.07</td>
<td>.27</td>
</tr>
<tr>
<td>Enthusiasm</td>
<td>.58</td>
<td>.02</td>
<td>.58</td>
<td>.47</td>
</tr>
</tbody>
</table>
Table 37
Correlation Between Class Mean Score of Question 5 and Mean Percentage of Teacher Participation in the Activity

Question 5: Did the teacher who just taught you take part in the class activity? Yes/No

<table>
<thead>
<tr>
<th>Teacher Participation</th>
<th>Elementary</th>
<th>J.H.</th>
<th>Sr. High</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.48*</td>
<td>.66*</td>
<td>.75*</td>
<td>.71*</td>
</tr>
</tbody>
</table>

*Significant at P<0.05

Table 38
Correlation Between Class Mean Score of Question 6 and Mean Percent of Verbal, Non-Verbal and Overall Enthusiasm

Question 6: Did the teacher who just taught you encourage you to practice the activity you just learned?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td>Little</td>
<td>Somewhat</td>
<td>Much</td>
<td>Very Much</td>
</tr>
<tr>
<td>Verbal Enthusiasm</td>
<td>.23</td>
<td>.02</td>
<td>.48*</td>
<td>.40*</td>
<td></td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td>.41</td>
<td>.18</td>
<td>.40*</td>
<td>.33*</td>
<td></td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td>.37</td>
<td>.12</td>
<td>.45*</td>
<td>.41*</td>
<td></td>
</tr>
</tbody>
</table>

* Significant at P<0.05

154
Table 39
Correlation Between Class Mean Score of Question 7 and Mean Percentage of Verbal, Non-Verbal and Overall Enthusiasm

<table>
<thead>
<tr>
<th></th>
<th>Elementary</th>
<th>J.H.</th>
<th>Sr. High</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal Enthusiasm</td>
<td>.58</td>
<td>.58*</td>
<td>.41*</td>
<td>.37*</td>
</tr>
<tr>
<td>Non-Verbal Enthusiasm</td>
<td>.52</td>
<td>.52*</td>
<td>.57*</td>
<td>.43*</td>
</tr>
<tr>
<td>Overall Enthusiasm</td>
<td>.58</td>
<td>.58*</td>
<td>.58*</td>
<td>.47*</td>
</tr>
</tbody>
</table>

* Significant at P<0.05

Table 40
Correlation Between Class Mean Score of Question 8 and Mean Percentage of Hustling Behavior (H)

<table>
<thead>
<tr>
<th></th>
<th>Elementary</th>
<th>J.H.</th>
<th>Sr. High</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hustling Beh. (H)</td>
<td>.43</td>
<td>.29</td>
<td>.11</td>
<td>.14</td>
</tr>
</tbody>
</table>
Table 41
Correlation Between Class Mean Score of Question 9 and Mean Percentage of Overall Enthusiasm

Question 9: Did the teacher who just taught you help you when needed?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Half of the time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most of the time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All the time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Enthusiasm</td>
<td>.29</td>
<td>.33</td>
<td>.77*</td>
<td>.41*</td>
<td></td>
</tr>
</tbody>
</table>

* Significant at P<0.05

Table 42
Correlation Between Class Mean Score of Question 10 and Mean Percentage of Overall Enthusiasm

Question 10: Did he/she help you enough? Yes/No

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Enthusiasm</td>
<td>.06</td>
<td>.13</td>
<td>.57*</td>
<td>.00*</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at P<0.05
Table 43
Correlation Between Class Mean Score of Question 11 and Mean Percentage of Overall Enthusiasm

Question 11: Is the teacher who just taught you an enthusiastic teacher? Yes/No

<table>
<thead>
<tr>
<th></th>
<th>Elementary</th>
<th>J.H.</th>
<th>Sr. High</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Enthusiasm</td>
<td>.20</td>
<td>.32*</td>
<td>.48*</td>
<td>.42*</td>
</tr>
</tbody>
</table>

* Significant at P<0.05

Discussion of Correlational Analysis Findings

When analyzing the correlational findings, several significant relationships were found. First, it is quite clear that when a teacher increased the amount of smiling behavior in class, the increased level was detected by all students who responded. On the other hand, in the question "Did the teacher smile enough?", only senior high school students ranked their teacher higher on this question when the teacher exhibited an increased amount of smiling (r<.35) sig. at P<0.05.

The data presented in Table 35 shows no significant correlation between the time the teacher spent on practicing the activity (A Climate) and the student responses to Question 3 which asked: "Did the teacher keep you busy (Practicing, playing)?" However, when the teacher exhibited a higher level of overall enthusiasm senior high students ranked him/her higher on the same question. This finding is commensurate with the
students' responses when asked to define teacher enthusiasm (see Table 5). There was no significant correlation between the responses to Question 4 which asked whether or not the teacher kept them busy (practicing, playing) enough and the mean percentage of intervals teachers spent on practicing the activity and level of overall enthusiasm. After examining Question 5, Table 37, it is clear that when the teacher participated more with the class, it was detected by all responding students. From the results shown in Table 38, we can see that when the teacher exhibited more non-verbal, verbal and overall enthusiasm behavior, only senior high school students ranked him/her higher on the question, "Did the teacher who just taught you encourage you?" (.48, .40, .45 P<0.05) On the question "Did the teacher encourage you enough?" a positive correlation (r < .41-.58) was found between the teacher mean percent of non-verbal, verbal and overall enthusiasm and the students' responses to this question.

There was no significant correlation between the amount of positive hustling given by the teacher and the students' responses to the "hustling" question (Table 40). A high correlation (r < .77) was found between the mean percent of enthusiasm exhibited by the teacher and senior high student responses to the question "Did the teacher help you when you needed it?" The question "Did the teacher help you enough?" was given a favorable response (yes) by senior high students whenever the teacher exhibited a higher amount of overall enthusiasm.
enthusiasm. No significant correlation was shown between teacher enthusiasm and elementary students' responses to the question "Is the teacher who just taught you an enthusiastic teacher?" However, there was a significant positive correlation ($r < .32$) between teacher enthusiasm and the response to this question by junior high students and an even higher correlation ($r < .48$) between teacher enthusiasm and senior high students' written responses to this question. This last finding strengthens the validity of the present definition of teacher enthusiasm employed in this study.

In general, significant correlations were found between senior high students' written responses to the questionnaire and the level of behavior indicants which communicated enthusiasm exhibited by their teachers, while there was no significant correlation found in most cases between elementary and junior high students' written responses to the questionnaire and the level of behavior indicants communicating enthusiasm obtained by the TEOS. Possible reasons for this difference are: that whenever elementary students liked a particular teacher they ranked him/her favorably regarding his/her actual performance in specific behavior indicants; and that some of the terms used in the questionnaires were too difficult for the elementary and junior high students to comprehend, e.g. hustle and enthusiasm.
CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter will present the conclusions drawn from the observational and questionnaire data. Conclusions will focus primarily upon the multiple baseline analysis and the correlational analysis in relation to the specific questions posed in Chapter I. The chapter concludes with recommendations for future study.

Summary

The purpose of this experimental study was six-fold:

1. To identify and define teacher behaviors that describe teacher enthusiasm in low inference and measurable terms.

2. To develop a reliable teacher observation instrument for the purpose of measuring non-verbal and verbal behaviors that communicate teacher enthusiasm.

3. To develop a training intervention that would enable preservice physical education teachers to increase levels of enthusiasm.

4. To develop a questionnaire for obtaining student rating of the behavior indicants that communicate enthusiasm performed by their teacher.

5. To assess the relationship between student rating and the objective data obtained by the descriptive teacher observation instrument regarding the various behavior categories that communicate enthusiasm.
6. To assess the causal relationship between the independent variable (training intervention) and the dependent variable (enthusiasm behavior)

The subjects in the study were fifteen student teachers at The Ohio State University who were teaching in the Columbus, Ohio area along with one in-service teacher currently teaching physical education in the Columbus area. To achieve this study's goals and purposes, teacher behaviors which describe teacher enthusiasm in low inference and measurable terms were identified and defined. Secondary students, teachers and teacher-education experts were actively engaged in the definitional task. A descriptive teacher-observation instrument was developed for the purpose of measuring verbal and non-verbal behaviors that communicate teacher enthusiasm. Eight observers were trained to use the Teacher Enthusiasm Observation System (TEOS). A total of seven verbal and six non-verbal behaviors, three classroom climates and two types of events were included in the TEOS. Observational data were collected with the TEOS which employed interval, event, time group sampling and voice check recording methods. Nearly 20,000 five-second intervals of climates and behaviors in 171 observations were coded in this study. Reliability checks were conducted at the conclusion of observer training five times for each observer in the field. Interval-by-interval inter-observer reliabilities were calculated and found to exceed training criterion levels for all instrument
categories. In addition to the observational data, whenever an observation was made, the observer administered questionnaires to the students who took part in the lesson immediately thereafter.

The purpose of the questionnaire was to obtain written student responses regarding the behavior indicants which communicate enthusiasm as performed by their teacher. Correlational analysis was performed to seek possible correlations between:

1. The class mean score of the teacher's level of performance of selected behavior indicants which communicate teacher enthusiasm, and the mean percentage of the same behaviors obtained by the TEOS

2. The class mean score on the questions which asked whether or not the teacher performed the selected enthusiasm behavior sufficiently often, and the mean percentage of the same behaviors obtained by the TEOS

3. The class mean score on the question which asked whether or not the teacher who had just taught them was an enthusiastic one, and the mean percentage of overall enthusiasm obtained by the TEOS

During the entire study, nearly 4,000 questionnaires were distributed among elementary 4th and 5th grade students, junior high students and senior high students in the Columbus, Ohio area. The training intervention consisted of fourteen hours of an intensive minicourse which was especially designed to increase the level of enthusiasm behavior of the participants. Probe multiple baseline design across subjects was employed in order to demonstrate
a functional relationship between the dependent variable (enthusiasm behavior) and the independent variable (training intervention).

Conclusions

Within the limitations of this study and as a result of analyzing the reliability scores, students written responses and probe multiple baseline analysis, the following conclusions were drawn:

1. Following definitional guidelines, it was possible to identify and define reliably non-verbal and verbal behavior indicants that describe teacher enthusiasm behavior.

2. The observational recording instrument which was designed to record teacher enthusiasm behavior was capable of measuring reliably behavior indicants (verbal and non-verbal) which communicate enthusiasm.

3. The results obtained from the analysis of the probe multiple baseline design indicate that it is possible to train pre-service physical education teachers to increase their level of verbal enthusiasm behavior (3.73% - 5.23%). Visual inspection of the graphs revealed that in general, the subjects exhibited during baseline a stable and consistent level of verbal enthusiasm behavior. In intervention, newly acquired level of verbal enthusiasm was maintained without a substantial variability.

4. The results obtained from the analysis of the probe multiple baseline design indicated that it was possible to train pre-service physical education teachers to increase their level of non-verbal enthusiasm behavior (3.58% - 4.82%). With the exception of three subjects who showed some therapeutic change, all the subjects exhibited a stable and consistent level of non-verbal enthusiasm in baseline. In intervention, the newly acquired level of non-verbal enthusiasm was maintained without a substantial variability.
5. The results obtained from the analysis of the individual data indicate that it is possible to change voice inflection of pre-service physical education teachers.

6. From the data obtained by the TEOS, and as a result of the multiple baseline analysis, a final conclusion can be drawn indicating that it is possible to train pre-service physical education teachers to increase their overall level of enthusiasm as defined in this study.

7. The results of the correlational analysis indicate that:
   (a) There is a positive correlation between the student's mean score of the teacher's level of smiling and the mean percentage of the subjects' smiling behavior obtained by the TEOS. The positive correlation was found for elementary students \( r = .39 \), junior high students \( r = .31 \) and for senior high students \( r = .31 \).

   (b) Positive correlation \( r = .48 \) was found between senior high students mean score of the teacher's level of encouraging behavior and the mean percentage of the subject's overall enthusiasm obtained by the TEOS. No correlation was found between elementary and junior high students' score of the same behavior and subject's overall enthusiasm obtained by the TEOS.

   (c) Positive correlation \( r = .35 \) was found between senior high students' mean score on the question "Did the teacher who just taught you keep you busy?", and the subject's mean percent of overall enthusiasm obtained by the TEOS.

   (d) Positive correlation \( r = .77 \) was found between senior high student responses on the question, "Did the teacher who just taught you help you when you needed it?", and the subject's mean percent of overall enthusiasm obtained by the TEOS.

   (e) Positive correlation was found also between senior high students' scores on the questions concerning whether or not the teacher who had taught them had encouraged them enough \( r = .58 \) and "helped enough" \( r = .57 \) and the mean percentage of the subject's overall
enthusiasm. On the same questions, no correlation was found between elementary and junior high students' responses and overall enthusiasm behavior.

(f) No correlation was found between students' responses regarding hustling and the actual teacher mean percent of hustling behavior.

(g) No correlation was found between student response on the question, "Were you busy practicing and playing enough?" and the actual teacher mean percent of overall enthusiasm and A climate.

(h) Positive correlation \( (r = .42) \) was found between the average student response to the question "Is the teacher who just taught you an enthusiastic teacher?", and the subjects' mean percent of actual overall enthusiasm. This correlation strengthens the validity of the definition of enthusiasm employed by this study.

The correlational analysis revealed that the questionnaire was too difficult to respond to in most cases for elementary students and in some cases for junior high students. The low correlation obtained by elementary students may also be due to the fact that when youngsters "like" a teacher, they tend to score him/her favorably for all behavior indicants on which they were asked to respond, and vice versa.
Recommendations for Further Study

Based upon the results and conclusions of this study and based upon many of the questions left unanswered, this researcher suggests the following topics for future researchers interested in teacher enthusiasm behavior.

1. Use of larger and more varied samples of students participating in the definitional aspect of this study.

2. Modification of the teacher enthusiasm observation system in order to render it more capable of measuring teacher movement in the gym.


4. Use of inservice teachers as subjects for possible training in teacher enthusiasm.

5. Extension of the present study to other settings and for longer periods of time.

6. Correlation of teacher enthusiasm with student motivation and achievement.

In order to define teacher enthusiasm, this researcher feels that student involvement in the definitional task is essential. The sample of students used for the definitional task in the present study was rather small and quite homogenetic in background characteristics. It is recommended that future research use larger samples of students from various locations and characteristics in order to collect universal student opinion which will reflect current thinking of youngsters. It is also recommended that students
participate in the ranking of the behavior categories obtained through their own collective ranking efforts.

The Teacher Enthusiasm Observation System designed to measure level of enthusiasm in the present study did not succeed in measuring teacher's movement in the gym during the lesson itself. Because teacher movement in the gym was viewed as an important indicant of teacher enthusiasm by the three sources that were asked to define teacher enthusiasm in the present study, it is recommended that future research be capable of measuring this behavior in an accurate and reliable manner. Future research might examine possible relationships between teacher preparation before the actual teaching and the subsequent teacher enthusiasm.

Only one in-service teacher participated in the present study. The results obtained from this subject indicate that the amount of change in enthusiasm level between baseline and intervention was rather small. The results obtained from this subject cannot be generalized for obvious reasons. Therefore, it is suggested that any future research use in-service teachers as candidates for enthusiasm training.

The need for replicated study is of particular importance due to the single subject design used in the present study. The role of replication in applied behavior analysis occupies a different role from group design statis-
tical studies. The single subject design utilized in this study cannot make any claims for generalization until the study has been replicated several times at least and the same kind of effects in different settings are found.

Future research in teacher enthusiasm in physical education settings should include measures of pupil learning. Research must attempt to find methods for assessing student gain in physical education. When student responses can be accurately evaluated in physical education settings, the linkage between student performance in the gym and teacher enthusiasm can be identified.
I consent to serve as a subject in the research investigation entitled:

The Effect of Enthusiasm Training on the Subsequent Teacher

Enthusiasm Behavior.

The nature and general purpose of the research procedure have been explained to me. This research is to be performed by or under the direction of Dr. Daryl Siedentop, who is authorized to use the services of others in the performance of the research.

I understand that any further inquiries I make concerning this procedure will be answered. I understand my identity will not be revealed in any publication, document, recording, video-tape, photograph, computer data storage, or in any other way which relates to this research. Finally, I understand that I am free to withdraw my consent and discontinue participation at any time following the notification of the Project Director.

Signed (Subject)

Date __________________________ A.M.

Time __________________________ P.M.

Witness - (Auditor)

Investigator
APPENDIX B

LIST OF ENTHUSIASM BEHAVIOR INDICANTS OBTAINED BY STUDENTS
works in small groups
happy or not mad

don't embarrass you purposely
remembers your name
makes you feel comfortable, not strict about little things
knows a little about you so they don't say something wrong to you
keeps up to date on how you're doing and how you can do better
don't push harder than people ready for

be funny to break monotony
varies so as to keep interesting
stay out of textbook as much as possible
go outside on nice days
do things that pertain to subject but don't just work in a book or homework

smiles
makes it fun
don't put bad moods on the students

jokes around
act out what they teach
doesn't give lectures
try to play games in class on what you're studying
doesn't stay on one subject too long
shows interest in everyone not just the class favorites
works on your individual problems not only as a class

jokes around

teaches in a way that students can participate
tries to play learning games
doesn't spend too long on one subject cause it gets boring and interest is lost

offers help when you need it not just on school work but when you need someone to talk to you can trust

does exciting things
helps students who need it
no homework on weekends
chew gum or eat in class but student responsible for clean up or punished
doesn't yell much

maintains discipline
does the thing he teaches e.g. push-ups
relates to students about school affairs
talkes to each person to see what he/she likes

thinks like us not a dictator but more as a friend
allows you to express your ideas that might help someone out
talks to each one to find out what they like to do
doesn't contradict all the time, offers praise
_________ keeps things moving
do things with students
lets them know teacher is boss
design class to have work time and fun time
keeps class under control
_________
talks about different things on a particular subject
friendly to kids
don't lecture on bad behaviors, let them know what they (kids) are doing right
smiles and enjoys teaching
doesn't bring home problems to school
_________
active in class
talks and explains subject
demonstrates what is to be done
talks privately with each student if he can
asks and answers questions
gives test that cover subject well
_________
keeps things moving
works hard
pass everyone
more fun things
does things people like to do
helps one who need it
don't yell

does not put one class above another
helps and demonstrates when students need it
smiles
takes job seriously
treats kids as people not numbers
gives individual attention when possible

move a lot with body and hands
has a high exciting voice when speaking
gets students involved in activities
in control of students at all times, disciplining when necessary
look at all suggestions

not be so strict
have more study sheets
work with students
have days that kids can do what they want
have more quizzes
have more tests
have homework for the kids
teaches exciting things
jokes

participates in class
shows kids how to do things instead of explaining
makes class exciting and not boring
has class discussions
doesn't do all the talking, lets kids talk
doesn't think they know everything

jokes around with students
smiles a lot
makes you try your hardest in what you're doing
when you start getting tired or something he pushes you on
isn't serious about everything all the time

smiles a lot
gives each a fair chance
gets involved in programs or activities
teaches what students need and want to learn about the course
helps individuals get along

jokes
smiles
not giving these surveys
using outside sources to supplement textbooks

discussion in class
doing things in class
getting things done on time
keeps your attention
doesn't lecture

makes class interesting
knows what they're talking about

let you go at your own pace
don't yell
help you so you understand
give you encouragement
let you know when you're doing a good job

active in school activities
take part in class
not boring
keep class going
get papers graded and returned on time

discussions with students in class
participate in class
don't give so much homework that you can't do it all
more friendly
help when a student is not sure of how to do something

------------
do things students like
give them choices between different courses of gym
participates with students instead of sitting around and telling them what to do
gives examples of how to do different things
helps students when needed
criticize only when needed
in good mood most of the time
interesting, doesn't give long, boring lectures

------------
organized
don't be a skipper
use a working deodorant, ha!

------------
happy
motivate you
good, positive attitude
happy to help you with a problem (not personal but math, history)

------------
keep class alert and listening
smile most of the time
have interesting ideas to do in class, like good projects
have class debates on discussions instead of lecturing all period
leave their personal problems out of the classroom
should try to talk to all students in class
use other means to get point across e.g. audiovisual aid
have control of class without being a dictator
no pets, pays attention to everyone
doesn't follow lesson plan but does what they want

have class discussions instead of lecturing every day
experts on their subject
asks relevant questions on test not picky, minute ones
don't take personal problems out on students
uses audio or visual aids to get point across
has control without being a dictator
more concerned with teaching something that will be valuable later in life rather than getting thru a certain number of chapters before semester is out
doesn't favor some students over others
doesn't assign homework over weekends or holidays
doesn't mind getting off the subject a little
has a good sense of humor

jokes around
smiling, in a good mood
tries to help each individual
gets to know each student personally

179
gives us free time to do homework and talk
lets us go to the bathroom when we wanted to go
gets people out of study hall

has a stupid attitude
smiles a lot

gives a lot of comments
jokes a lot with students
pays attention to all students not just one

tries to get involved with everyone
doesn't follow old routines
tries new experiments

she wasn't afraid of using bad language and she would say anything she wanted
she was always telling jokes

liked to joke around
doesn't give out too much homework
explains homework
is very nice

jokes a lot
nice and understanding
makes classroom fun rather than boring
compliments people when they've done well
tells people if they're doing wrong
enjoys life and what he is doing

smiles while explaining a point
maintain eye contact with students
speak dynamically
add interesting anecdotes to lectures
give examples of practical applications of material
place him/herself on a level with students
listen with interest/encourage students to present their own input
be willing to help students who don't understand
simulate real life application of material in class

Student responses
always joking
trying to help you with all of your problems
hardly ever yells at you but when he does it's to help you
a teacher you can talk with about anything
a teacher who is very polite
when they don't yell at you for doing something wrong

helped everybody when they needed help
was never in a bad mood, always smiling
teaching is easy to understand
one who does practical jokes
one that's really cool
long hair
smokes
knows what's going on
one who's cool with the kids
knows how people feel about school and feels the same way
one who's crazy
one who allows you to chew gum and candy

he always had us working, made us laugh, nice person
treated us like her own children, happy and cheerful

would say that I could do better in school
used to coax me and say I could do anything if I would try
kept the class at a fast pace
helped in sports

should want to get work done
be peppy and cheerful
shouldn't nag at the students
should try to help their students as much as possible

tries to bring current situations and apply them to the subject
organizes class period so that students do not get bored but still remain attentive
can find humor in their lectures to keep kids awake

not act bored during class or with their own material
act fairly happy all the time
not refuse to communicate with students on their level, help out with problems if consulted.
find new methods of teaching instead of just lectures
would not restrict themselves to teaching only their own major, would discuss other areas and topics
could allow group discussion and voice their own opinions
can be optimistic and open-minded about things but also face reality

help out students the best he/she can with anything
be friendly and easy going

make class enjoyable
not too possessive of students
keep class interesting
teach lessons to the fullest without losing anyone
add a little humor
get class participation
discuss the opinions of students
keep a pleasant atmosphere by doing something to the room

joke once in a while
answers question to the best he can and if he doesn't know will try to find out
has discussion periods where everybody can join in and understand what is being said
makes jokes to keep students interested
remains on a friendly basis with students
use current situations in class
keep class moving at fast pace and slow down if class needs it joke once in a while

smile
make hand and body gestures
introduce new techniques
bring in new subject matter
promote good humor

keep class interesting by bringing in outside materials
talk to students as people and not lower individuals
make a course challenging but not too hard
keep an easy type atmosphere in the room
encourage the slower students to do better

understands the students, can relate to them
really get into their lectures and throw a few jokes in
cover what they want to and don't stretch it out, make it interesting
mess around during the free time right along with you
don't go too deep into detail, get off subject once in a while

show films, do homework in class

change tone of voice, aren't so boring

bring new things into class, things happening currently
relates well to students, can be one of them, understands how they feel
doesn't always have to stick to what was planned for the day
can find humor in every day class situations
really enjoys what he's doing, doesn't get bored

be clear, give directions clearly
be interested in what they're teaching
make activities fun
keep firm control

discuss problems in school system
tells jokes on occasion
laughs a lot
stands when lecturing
in control of class
explain and really go into a subject
show care for individual students, especially slow students
always in same mood, don't take mood or feeling out on students
discuss school problems or current events
controls his moods in class
doesn't tend to talk about one subject for a long period of time
doesn't always worry about rules and regulations
tries to get along with students
does something unusual every once in a while
can put down a smart aleck or get a quiet person to participate

always smiling, happy, energy flowing out
bring in interesting things in the class that were good topics for rap sessions
has time to be concerned about student as an individual
be friends with students in and out of class
creative in presenting things to class
can take a joke

keeps class interested
not too strict but not too lenient
makes jokes every once in a while
demonstrates instead of just talking about it
gets involved with class discussions
be aware of what is going on in the school
have a good sense of humor and try to get along with the "rowdies"
be strict without letting students know it, be fun about it too
smile

smiling and relates to the students well, even thinks like us sometimes
tells jokes during class because he knows big lectures can cause boredom
keeps class going at a steady pace, doesn't stop and pass time for 3-5 minutes at a time
says what he wants to say then lets us do our assignment or other work we have to work on
good personality doesn't get upset very easily, can also take bad jokes from students
communicates with students outside school e.g. at sports
helps the student all he/she can and gets involved in discussion

lets you get off the subject for a minute then back on it, helps keep you from getting bored
smiles and makes jokes every so often about what they are talking about
keep class moving at a fair pace but not too fast
do not keep repeating over and over
have games to play that go along with what is being studied
do not go to the very end of the period, they give you time to think at the end

walk about the room while lecturing, enthusiasm in their voice
class lectures planned and know exactly what they're going to discuss each day
take time sometimes to talk about your problems or the problems of school
make test questions interesting or even humorous
never seem bored with their work and are usually smiling

________________________

show interest in their work and as well as yours
explain problems you don't understand
smile and talk about experiences that happened to them that
will help you remember
walk around and joke with everyone
write comments on papers that are graded and say what is right
or wrong or that they even looked at it
do discussions that involve everyone and aren't boring

________________________

expect what you can do at your best, at your own comfortable
rate; an enthusiastic teacher would put themselves aside to
give a student extra help when needed.

in explaining work teacher should dictate at a pace which is
comfortable with students
be themselves
shouldn't lay down lots of rules and not follow through on
them
shouldn't be serious all the time, make learning fun and en-
joyable

________________________

help students when help is needed
always in a good mood
willing to try new things
tries to get along with all
jokes around with students
smile
shows an interest in pupil's personal life

joke around

not too old fashioned about how students life and their ways and words

talk about past experiences that happened to him if it relates to the subject

give personal experiences or examples

smiles a lot, seems to be having fun at teaching

laughs some, is energetic

has a lot of pep

all around friendly, makes jokes

talks a lot, keeps the class going

smiles

have a human attitude toward you by making exceptions or doing something special for you when he/she knows it is important

you have to learn in class but the teacher can make it more interesting by using you or your friend as examples

isn't sarcastic

listen to what your students have to say

jokes around with students

doesn't treat older students like imbeciles

tries to make up original assignments

has discussion about topics that the class enjoys
be humorous
don't bore the class with a lot of lectures
gets involved with projects together
take good field trips to interesting places
show interest in teaching
talk about various subjects
be as interesting as possible

dropped the hands a lot, made lots of different expressions
she hardly ever sat down because she couldn't see you and keep your interest
talked about things having to do with what we were studying but interesting.
asked every day lots of questions
smiled and was friendly to everyone

feels free to do things not in the books
makes things clear for student to understand
listens to what kids have to say

aren't always serious about everything
concerned about what we are learning
gives everyone a chance for an opinion
always takes time out for students
not always running out of room
not easy, but we can understand
is willing to help and explain

gets involved with students and tries to help everyone who has a problem
someone who tries to get everyone involved with what happens
someone who is nice and doesn't try yelling at the students
when a student causes trouble instead of getting mad and sending him down to the office tries to settle his problem
one who can laugh at different things

kids around
real nice and funny
gets involved with students
gets involved in school activities
doesn't yell
don't assign any homework

able to take a joke
be nice
likes to do a lot of things

not afraid to say the way they feel or think
laughs and has a good time with people
teaches properly without making things difficult
tries to understand the student and the way he/she feels
plans different activities
is versatile
able to talk to
being as equal as the other person, not trying to be better than someone else
always in a good mood
can take a joke from the class
likes to talk to the class
participates with class projects
jokes around
takes us places
gets involved in school activities
doesn't give a lot of homework
smiling and laughing all the time
aren't afraid to laugh, likes to joke around
makes things easy to understand and will always help you
some days when there is nothing to do you have fun games to do
lets you have your own opinion
doesn't get mad real easy, will kid first and warn and then get mad
jokes with students
always smiling
has a good teaching guide
the way he showed us how to do things
they're nice and know how to cope with a situation if one comes up
their classes are not boring and they go fast

has an ugly mustache
looks like Harpo Marx
has a good attitude
is smart
one that's cool and acts cool

understands the way his class feels about something
do what we want to do
they're nice and know how to cope with a situation
they're up-to-date with us

helps everyone with their work
jokes once in a while

doesn't holler all the time
has something fun for you to do
nice and not a groucher
allows you to chew gum

has a nice calm voice
never makes long speeches or lectures
always joked with the class

always told jokes, it was fun to be in his class

making fun of someone or telling stupid stories and making weird names for things

active and always on the go

be ready and willing always to talk about his/her subject

asks students out for dates

spends time with each individual

doesn't waste time

makes sure everybody understands before proceeding

keep an alert tone of voice

have some humor blended in with lectures to keep them interesting

get the class as involved as he can in the discussion, let them do some of the talking

spend a lot of time thinking of new ways to make class more interesting

get involved with class instead of just telling them what to do

participate in school activities or something so they can know students

be pleasant

try to understand when the student has a problem or something

not scared of students but doesn't take advantage of his authority
brings out interesting points in his subject
is fairly strict
relates to the kids and their problems well

Student Comments
respect students and command their respect
dresses accordingly—good pants, casual shirt, not jeans and t-shirt
smiles often can relax and joke
is available for personal contact
asks are there any questions often
puts primary importance in class on students' questions
respects all questions especially those the majority of the class thinks trivial or unimportant
is able to put himself in the student's position
makes clear what the objectives of the course are, strives to make clear those objectives through teaching, grades fairly according to mastery of objectives
treats his students as well as they treat him and makes it clear that this motto is standard procedure for teacher/pupil relationships

uses strict discipline
smile sometimes
makes the activity sound worthwhile to the students
does not give instructions for too long but extends them over a period of time

has good control of the class
good sense of humor and walks with class
makes the class interesting
answers appropriate questions
gives help when asked
explains himself distinctly
compliments students on something good they've done
gives extra time out of class to help a student

makes student do things himself
she is pushy
treated us like we were in high school but we weren't
made us be dressed and participate
could understand when students weren't feeling well
is good looking

competes in sports with students
kept class going and always had something to do
doesn't get mad, mean or dirty
gets kids perked up for activities
encourages kids to go out for sports
is humorous, good sense of humor

teacher is glad and excited to answer questions
smiles a lot, never seems to run out of things to say
if showing a film, will often stop the film to point out things
makes the class fun
have cute teachers
nice teachers
understanding
seem to enjoy teaching
don't pick favorites
tells and shows students what they're doing wrong
doesn't scream or yell
grades fairly
doesn't make you feel bad for asking what may be a dumb question but is something you don't understand

gets involved with class
flexible about rules of class
asks class what they would like to do
is patient
keeps student interest with up-to-date talks, not lectures
doesn't give goofy written tests on things like volleyball or soccer, gives skill tests

is not boring
smiles sometimes
are humorous
makes the topic interesting
allows some freedom to talk but disciplines the class well
holds no grudges against students
do modern and fun things in class
don't yell
humorous

________________________
keeps class busy
gives help
not really mean
smiles a lot
tells some jokes so that students won't fall asleep

________________________
did fun things
were not fools

________________________
gets involved with students i.e. going to sports
helps if you don't understand
has parties in class
is happy in class
has an extra day just going into different aspects of teaching the subject

________________________
sound and looks happy
never lets class be empty of things to do
cheerful room--posters, etc.
class doesn't go too slowly, doesn't get boring
keeps moving and talking
students have some say in how they study and learn

__________________________

sense of humor
good personality
projects to do in class
never lets class lag or get boring
not hung up on grades

__________________________
good looking teachers
doesn't get angry if you don't understand something
seems happy in their teaching
speak loudly and clearly
understand when a student can't participate
treat everyone equal
listen to problems
don't make you feel stupid for asking a question

__________________________
make class interesting
grade papers quickly
explains clearly
lets students make decisions as to how class is run and what should be expected.
plans fun things to do instead of lecturing all the time
have patience
don't criticize much
act interested
have discussions not directly related to material but about the material
treats students like adults

happy disposition
speak clearly, distinctly
interesting topics to teach
to decent looking, not just physical but nice clothes, stylish that kids can relate to
control their anger
don't have pets
good grooming habits
talks to students, doesn't think the younger generation is disgraceful
someone you can talk to like a friend
grades fairly
doesn't make student feel dumb if he asks a "stupid" question
interested in what they're teaching
interesting lesson related to subject being learned in a constructive way
happy with themselves
talk with students not at them
relate with overall feelings of students
involve all students not just the ones that are exceptional in the certain subject they are teaching

willing to help
patient
speaks and treats us on our level
understands
is interesting
enjoy what they are doing
doesn't act superior (even if they may be)
explains well, easy to understand
tells you in a nice way what you did wrong and how to correct it
is willing

------------------
willing to help

nice, doesn't have a fit when you don't understand
have fun with class
understanding
patient with class
likes what he/she is doing

------------------
jokes around and is hardly ever boring, acts young
good personality
not boring
fun to be around, humorous

------------------
helps you, if you don't understand doesn't yell because you can't do it
considerate but strict

201
keeps class going and keeps class enjoying it
makes class fun, not just something we have to take
keeps class moving
able to cut down on confusion
is fair in what he/she asks and grades people on what they try
not if they are a jock or something
helps everybody
has patience
gets along with students
gets involved in class
gets to know everyone in class or at least tries
on time and ready to go
understanding
gives 110% in class
doesn't pick favorites
praises
not real stern
helps out
makes sure things are going right and student understands
doesn't speak in a harsh voice
bubbly
kind, helpful, energetic
keep class orderly
has an outline or plan they follow
learns from mistakes and doesn't make them again
polite
doesn't promote busy work
class is fun not a bore

smiles a lot
knows a lot about teaching

jokes
smiles
acts crazy
makes work fun, willing to help
shares personal experience

involved in school activities, is good with kids
relates to kids' problems and has a good personality
good sense of humor, tells jokes

tells jokes

leave more time for playing
conveys enthusiasm

smiles
lets us do what we want
gives enthusiasm

smiles, friendly, polite

keeps class moving
tells jokes
keeps class involved in discussions

has good out-of-class relations with students
genuine concern for physical and mental health and welfare of students
treats students as friends
keeps discipline without being a tyrant
participates in some activities as students
does not harass students or provoke distrust
doesn't nag students

helps with problems
rewards people when they've done a good job
participates with us
keeps class in good spirits
does not bore us
keeps order without raising voice
involved in extra curricular activities
in good humor

tells jokes
makes topic interesting to hold attention
grades counting class participation

smokes
drinks
is in control
has fun

wants you to participate in class and get involved
tells jokes to keep class going
does special things for us e.g. playing an instrument
makes interesting assignments
no busy work
makes class fun instead of a chore

jokes
doesn't treat the class like a life or death situation
explains so it's understandable

205
makes things fun
is funny

------------------
loud voice
keeps things together
knows how to deal with kids when they are down

------------------
keeps class in order
do things in class other than study

------------------
doesn't put down or laugh at a student
smiling, speaks enthusiastically like he's really interested in subject

doesn't lounge in class, is alert
walks around
while standing moves arms is constantly ready
if he doesn't know he tries to find answer
relates to students
encourages students

------------------
lets you do your own things
if you do something to get better in the subject and show interest, teacher meets you half way

doesn't carry over a bad mood to your class

------------------
interested in students, they are important

206
good personality, doesn't act like he doesn't care
don't look depressed or sad
be patient, some students are slower and less talented

helpful, teaches the right way to do something
never yelled if we did something wrong, helped us to correct it
smile, tells you you did something right and were pleased with you
keeps class moving

show enthusiasm in their work
smile, tell jokes in class
get to know students
show they care about students

confidence in what they are teaching and how they are teaching
speak loudly and clearly so no trouble in hearing or understanding
students know what is expected of them
keep class in control
let us get off the subject sometime
never told us our ideas were wrong, suggested better ones

smile, asks student how he is doing
not take preference to certain students
when a student cannot participate finds other ways in which he can be graded
shows encouragement
gets involved, excited in students' activities
knows students individually

interesting, funny things to talk about during class and everyone gets involved
whole class period isn't just a discussion
discussions aren't boring

cheerful
helpful
helps students who are ahead to do more research or get more insight into a subject
makes class relaxed and at ease
doesn't ridicule or punish slower students

gets involved with students
tries to make class more enjoyable

nice, pleasant

asks what you think of course, what could be done to change it

don't lecture, gets class involved
don't just do classwork, has field trips, etc.
try to do different things every day
don't do things no one wants to do
in a good mood

--------------
nice, could talk with him didn't feel scared to death of him
casual atmosphere, jokes with you while you're learning

--------------
has nice things to say in the halls
give you time to joke in class
slow to anger

--------------
in a good mood
all the kids are well liked, no pets
teacher might just sit down and talk like a friend

--------------
controls the students
not too strict
sense of humor, but if they can't tell jokes it is worse if
they do
good explainer
shows interest in subject

--------------
reads stories
helps students after school
normally smiling
tells jokes

--------------

209
doesn't drag the lectures
makes you participate in class
jokes, makes you feel comfortable
gives praise for good work
always seems to be in a good mood
answer questions and don't seem bothered
get everyone involved in a discussion
don't get off the subject

makes jokes
teacher beat on us for fun

makes jokes
beat on us for fun
are usually nice

smiles
gives everyone a chance
helps lost kids
courteous
jokes around

nice
encourages
smiles, cracks jokes sometimes
helps with problems
gives everyone a chance to participate

smiles a lot
uses visual aids
spends time on preparing activities so that everything goes smoothly and well
doesn't yell a lot

encouragement when doing well and help when needed
familiar with subjects and know extra information to make it interesting
treat us as equals

jokes with students in class and out
tries to help anyone he can
makes class fun and interesting
doesn't stick strictly to rules.
smiles, is friendly during class
makes your question seem important instead of making you feel dumb
goes over things so you understand
doesn't always have to do something in class, has free time
allows students to sometimes voice their opinion
talks to you about problems you might have

has something interesting to talk about
lets you talk the last couple of minutes of class
isn't picky about everything
isn't too strict
likes to joke around
lets you get away with things other teachers wouldn't
doesn't repeat himself
makes a boring subject interesting

_________
don't have to take notes
not mean
not boring
doesn't talk about same thing every day
doesn't talk about himself

_________
gets involved with students
takes time to explain right procedure to students
stays after class to participate with students e.g. a coach

_________
tells jokes if you were going to have a test
nice, friendly
not dull
makes you feel better if you get a bad grade

_________
tells a joke
encourages you
talks to you about school and not about school
smiles

jokes in class
says hello back all the time
smiles a lot
friendly when feeling down or sick
encouraging at all times

tells jokes
encourages you when you get a bad grade
friendly
makes you laugh
smiles often

laughs with class
friendly
not grumpy
parties
helps when in trouble
tells jokes'
wears short skirts

gets involved in games
plays with class (shoots in basketball)
explains clearly

213
parties
nice legs and wears short skirts

________
offers help after class if needed
if you don't understand, doesn't yell and make you feel dumb
offer comparisons between subjects and every day things
gives the impression they understand your problem
makes student think
gives impression they like kids
shows new aspects to old problems
makes you feel you are learning
imparts the will to learn
instructional

________
encourages you to get better grades
friendly
not boring
takes time to explain
jokes around
gives you time to talk

________
smile
walks a lot
tells weird stories
talks about himself
takes time
disciplines

jokes
parties

smiles
humorous
physically demonstrates, less textbook approach
creative
no tolerance for jerks

doesn't always stay on subject
smiles a lot
tells jokes
doesn't lecture all the time
talks about interesting subjects

smiles a lot
jokes
uses illustrations
encourages you
doesn't lecture all the time
uses class projects to help you in studies
friendly
fair grading level
good grooming
don't have favorites

let's the class do about anything
helps you get better grades
explains things
have fun together
lets you talk to other kids during class

happy in class
good attitude
makes class fun
smiles a lot
encourages you
helps you when needed

smiles a lot
jokes around not straight lecture
interesting subject and topic
friendly
not boring

laughs with class
wears tight jeans
tells jokes
makes subject interesting
talks about himself but not too long
smiles
never puts down your ideas
does activities with class
doesn't pick on anyone
understanding
friendly but puts down class rules and sticks with them
has patience
takes time to explain

____________________________
laughs
smiles
tells jokes
doesn't stick on subject too long
participates
explains
does fun things with class
isn't critical
happy

____________________________
smiles
participates with class
explains clearly
jokes around
don't lecture all the time
makes class fun
isn't boring
don't stick to one subject too long
don't talk over students head
don't assign too much homework

smiles
explains clearly
participates in class
jokes around
doesn't lecture constantly
makes class fun
isn't boring doesn't talk over your head
doesn't assign too much homework

smiling
participates with class
explains clearly
jokes around
doesn't lecture constantly
makes class fun
isn't boring
doesn't talk over your head
doesn't assign too much homework

doesn't teach a lot
considerate
smiles
doesn't teach over your head
never gives lectures
isn't boring
tells jokes

varies class routine
allows students to teach
accepts criticism
brings in outside information
gears class to the level of the students in it
doesn't say anything student can't understand
smiles
doesn't make class boring

smiles
talks a lot
interesting things to do
don't listen to tape recording but the teacher himself
don't do the same thing every day
friendly
talks to everyone in class
leaves their problems at home
doesn't have favorites
no set schedule

helpful and honestly concerned about kids
shows enthusiasm in what he does it holds students attention
jokes to relieve tension
don't dwell on one subject too long, it gets boring
reflect the mood you would want students to have
believes in what he's teaching--kids will show more interest, lesson will have more meaning

willing to help
understands if you can't do something

tries to help everyone and show them what they are doing wrong
does things the whole class likes to do
doesn't treat kids like 2-year olds
doesn't try to make them completely quiet
don't hate a kid just cause you hate her sister

not always in a bad mood
talkes to individuals
doesn't act superior or likes he's great stuff
understands when you can't do something

tries to understand you and your views
shouldn't let moods interfere with class

uses new ideas
works in small groups
makes people do what you tell them or at least try

kind
cooperates with other teachers
has concern for kids other than schools concerns
involved in school athletics
have school spirit
firm when needed
involved with students

joins class in talks
doesn't stand there and talk the whole period
has group talks
class projects
helps kids having problems

joins class in talks
don't talk whole period
class projects
helps those having problems
has group talks

gives extra credit projects

-------------------

ask and do the most exciting sports to keep kids happy

friendly to all

helps all

varies doesn't do same thing year after year

tries different ways of punishing kids

doesn't have favorites

-------------------

uses new ideas

organized

dress nicely
APPENDIX C

LIST OF ENTHUSIASM BEHAVIOR INDICANTS OBTAINED BY TEACHERS
smile and mean it

say hi to students first, don't wait for them to greet you

correct them when they are wrong and let them know you are firm but fair and do this out of concern for them

never avoid their company, if they want to be near you accept it as a sign they like you

help them academically and with their personal problems

make them feel they can come to you for help—hug them if this helps

always try to find something good to say about each student

always thank them if they do something to please you and praise them when they do something well

tell them if there is something they can't do you will help them try

be a good disciplinarian and have a sense of humor

smile when looking at student

relax and easy to be with—no tension

use knowledge to help not beat student over the head with patient but have expectations

confident not always on the defense

like what they do, able to tell it

work with students, not on them

real, not gods and when a mistake is made admit it

never make fun of anyone but have a positive sense of humor

tell class additional secrets about their subject area—historical details, etc.
spend extra time with students--after school, clubs, sports, etc.
chat with students in lunch room, halls
comment on written work--personal, funny, etc.
sensitive to students' personal problems
listens during discussions and draws answers or suggestions from students
laughs with students
marks or gives credit for all work done
praises slower students when they accomplish what they can
challenge brighter students with interesting extra assignments
may make use of some grouping

accentuate voice, happy to be with class
smiles frequently
touches in a friendly manner, frequently
try to see each student, personally during class time, at least once, more if possible
high energy level, move about room, speaks often, highly involved
participates in class, much more than observing
enjoys being in the class so much that there is laughter from the teacher and students
has humor and jokes with class
plans activities that students enjoy and want to participate in; students ready and eager to start class
no one is concerned with how much time is left in class; everyone highly involved so no one is asking is it time to go yet
smiling

ask if she can be of help without waiting to be asked

Sometimes we like to just sit and think! Can you think with a pencil and paper for 5 minutes? Try it!

Lately I have noticed that you really enjoy talking. Get a partner and talk for 5 minutes. Then summarize briefly what you talked about.

I appreciate seeing how much you have improved since school began. With this project I hope you will show some more improvement.

_____________________
Walk around classroom

smile, laugh if the occasion calls for it

draw diagrams with a little humor

rename sections of chapters making them "Catchy"

allow students to ask question not relating to topic and willing to answer

research answers to question asked that teacher did not know at time of asking

get excited together with class over a "great revelation" after really working at it

deviate from text in lecture extras--teacher knows

_____________________

makes the subject interesting, even the boring parts seem interesting (the teacher has complete control of the situation)

concerned about the well being of the "total" student but still keeps professional distance.

_____________________

body movement

hand gestures

vocal expression varied
pleasant voice
interesting material
varied activities for students

jumping around the room, like using analogies
believing in the subject being taught, teacher must be excited about the subject topic
giving working solutions, one to one attention to stumped students

positive initial statement at beginning of class
responded to each student
encouraged student's thinking
showed evidence of loving his subject

I have a little surprise for you today! You'll need a pencil! You did so well on the quiz yesterday that---

Since you liked Edgar Allan Poe's "The Raven" let's continue by hearing recorded---

I really liked the short stories several of you wrote. With the writer's permission, I'd like to read

Your papers were interesting but I think an outline of subject to be included would have helped your papers very much

Enthusiastic teachers would do and/or say

Vary lesson plans and methods rather than one format, e.g. lecture, discussion, movie, game, etc.

Genuinely like kids rather than pretending to
Have a variety of facial expressions rather than smiling or frowning all the time

Have a good knowledge of and liking for the subject matter they choose to teach

Have good eye contact with students

Move around rather than sit at desk all the time

Speak loudly enough and not in monotone

creates an environment that welcomes the student, a clean organized well lit room with relevant displays and posted student work

practices what he teaches, exemplifies the topic through example (PE-healthy; English--speaks and writes carefully; home ec-good lab practice, sews own clothes)

is warm and concerned about the student's personal lives, asks questions about how the students are doing at home and in other classes, LISTENS

contacts parents to inform them of their students' abilities and progress

supports positive attitudes and gives students credit for being enthusiastic

is enthusiastic even when he/she doesn't feel like being enthusiastic BUT NOT PHONEY

move around the room vs. hiding behind a desk

tends to teach from a positive viewpoint

trying to clarify the assignment for all students so all can understand

usually in a cheerful mood, full of enthusiasm, excited and interested

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make the student feel interested, feel a part of the classroom.

The following are things that enthusiastic teachers would do and/or say. Try to be as specific as you can.

Smile and mean it.

Say "Hi" to students first; don't wait for them to greet you.

Correct them when they are wrong and let them know you are firm, but, fair and do this out of concern for them.

Never avoid their company; if they want to be near you accept it as a sign they like you.

Help them academically and with their personal problems.

Make them feel they can come to you for help - (hug them if this helps).

Always try to find something good to say about each individual student.

Always "thank" them if they do something to please you and praise them when they do something well.

Tell them if there is something that they can't do, that you will help them try.

Be a good disciplinarian and have a sense of humor.

Accentuated voice, happy to be with class.

Smiles frequently.

Touches in friendly manner, frequently.

Try to see each student, personally during class time, at least once, more if possible.

High energy level, in that the teacher is moving about the room often and speaking often - highly involved.

Participates in the class, much more than observing.

Enjoys being in the class so much that there is laughter from the teacher and students.
Has humor and jokes with class.

Plans activities that students enjoy and want to participate in. Students ready and eager to start class.

No one is concerned with how much time is left in class. Everyone, teacher and student, highly involved so much that class may go over time. "No one is asking, is it time to go in yet?"

Always smiled, and didn't over do it, and occasionally asked if she could be of help - without waiting to be asked.

Tell the class additional "secrets" about their subject area. (interesting history details, etc.)

Spend extra time with students (after school, clubs, sports, etc.)

Chat with students in lunchroom, halls, etc.

Comment on written work (personal, funny, etc.)

Sensitive to students' personal problems.

Listens during class discussions and draws answers or suggestions from students.

Laughs with students.

Marks or gives credit for all work done.

Praises slower students when they accomplish what they can.

Challenges brighter students with interesting extra assignments.

They smiled when they looked at me.

They were relaxed, and easy to be with - no tension.

They used their knowledge to help not to beat you over the head with.

They were patient, but also had their expectations.

They were confident, not always on the defense.
They liked what they were doing - you could tell.
They worked with you - not on you.
They were real - not gods and when they screwed up they said so.
They never made fun of anyone, but they did have a good sense of humor, a positive one.
APPENDIX D

LIST OF ENTHUSIASM BEHAVIOR INDICANTS OBTAINED BY TEACHER EDUCATION EXPERTS
travels around the teaching area, i.e., doesn't remain in one place

interacts with MANY class members during a class, probably more than 25%

may tend toward rapid speech pattern, compared with normal patterns

tendency to use one phrase, such as super, terrific, fantastic

may use hustles frequently

tendency to teach with a critical demandingness, really wants and expects students to learn and cooperate

lesson for less effective teacher may be characterized by dangles and flipflops

students seem to pay attention to enthusiastic teachers, indirect assessment

often a variety of activities, within and between classes, not same thing day after day

suspect that one of the best indicators may be the amount of time a teacher spends actually preparing for classes. Apathetic teachers don't seem to plan much, if at all.

____________________

punctuation of speech accented by hand movements

vocal indicants

rate of speech (fast)

consistent and great variation in volume, inflection, rate and tone

energy expended (lots of it)

volume (loud)

intensity evidence in listening, eye to eye contact

constantly searching (during teaching) for illustrations to make a point, examples are precise

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moves around room constantly
(almost) never sits down
love of work obvious, everybody knows it
long hours at the job every day
knows a lot about what is involved, is an expert, knowledge comes from constant devotion to area of interest and never-ending study and reflection
loves to share ideas, like to talk shop

____________________
outstretched arms
open palms
finger punctuation
hands on hips
erect posture
intense
fluent
dramatic pauses
intonational punctuation
frequent accentuation
congruence between what one says and what one does
moderate self reference about doing what one teaches
eye contact
interest in students who indicate interest in the subject being taught
disinterest and/avoidance of students who do not show interest in the subject being taught

____________________
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fast-paced movements

variable facial expressions used for emphasis when speaking; hand gestures

being on time for classes; having expectations that students will learn

showing positive feelings about the subject/class/students

participating in activities on own time; talking about that participating with students

variable vocal tones and volume for emphasis

fast rate of speech

nonverbal vocalizations which communicate interest, provide for varied presentation

active involvement out of class

reminders to students about outside events they can be involved in

willingness to help students get better

eyes dancing, snapping, shining, lighting up wide, eyebrows raised eye contact with learner(s)

gestures frequent and demonstrative

large body movements, quick body movements

facial expressions vibrant, demonstrative expressing joy, surprise other emotions

great or sudden changes from rapid excited speech to a whisper varied, lilting, uplifting intonations

word selection, use highly descriptive, variable use of many adjectives, adverbs, exclamations

acceptance, enjoyment, response to learners and their ideas

high energy level

behavioral

clapping

raising hands in air (as official does when goal is scored)
punching motion with fist, i.e. go get em
congratulatory movements, slapping hands, patting on butt, hugging
manually assisting students during performance
cheering, YEAH
yelling encouragement, you can do it
voices volume high/speech moderately rapid
superlative reactions, wow, terrific, etc., to student performance

participating vigorously in movement activities with pupils

There probably are three sub-sets of teacher enthusiasm--
enthusiasm for the subject matter (teacher likes golf),
Enthusiasm for students (teacher enjoys and values the class),
Enthusiasm for teaching (teacher enjoys helping learners)

Each of the three may have its own characteristic set of behavioral indicants. Certainly, moving about the learning environment so as to be close to and involved in learning is one behavior that may be generic to all three. Absolute frequency of teaching behaviors probably is another (excluding highly repetitive actions)...Bookhout's old study showed a clear positive correlation between absolute frequency and student perception of teacher warmth.

People differ considerably in their characteristic use of vocal behaviors to convey enthusiasm...but when it becomes deliberate use, as in the attempt to recruit interest and variation, in all its forms, seems to be the rule. This may be a mediating variable, however, more directed at getting the students attention than at conveying the teacher's own attitude about the subject matter per-se...for the latter they may more typically use direct communication "I like this, it is fun (or important) stuff!"

Active teacher participation in the activity...joining in.

Lesson pacing--brisk and well articulated (few sharp discontinuities) all reflecting a high level of teacher investment in planning.
All indications that the teacher regards class time as a "valuable" to be conserved and used rather than filled - i.e. great attention to managerial efficiently coupled with high stress on learning, tend to convey the teacher's sense of the importance of the subject matter - hence enthusiasm for the subject.

The behavioral indicants almost certainly are different for different populations - i.e., children and supervisors probably read different signals in perceiving teacher enthusiasm. Further, I am sure there are significant ecological differences between enthusiasm in the classroom and in the gymnasium.

Smiling; particularly when providing feedback.

Touching; such as pat on back, handshake, hand on shoulder, etc.

Vigorous, even animated skill demonstrations.

Participating in activities with students.

Moving throughout the activity area; eyes focused on students - not standing in one place or starring blankly.

Tendency towards fast rate of speech

Noticeable voice inflections, particularly when emphasizing important aspects of skill/activity instruction and when providing feedback.

Prompt vocal feedback following skill attempts.

Tendency to talk throughout much of the lesson.

Usually exhibits high rate of verbal feedback/reinforcement.

Well-planned instructional design; facilities and equipment are ready before class begins.

Teacher is on-time, but loses time consciousness during class period; tends to run overtime in attempt to teach "one more thing."

Teacher moves class into activity shortly after class begins.

Teacher provides opportunities for and promotes extracurricular physical activities (extended program).
Teacher does "little extras" such as maintaining current/interesting bulletin boards, opening gym before school and during lunch hour, providing additional help for poorly skilled students, making relevant books and magazines available for student use, maintaining student files, communicating pertinent information (i.e., programs, individual progress, etc.) to parents.

demonstrating movement or tasks vigorously and attentively
tells students how much you like the activity, the class, them
high frequency of interaction with students
signs that indicate teacher is having a great time, laughing, joking, smiling, etc.

most of what we call enthusiasm is vocal, however, I feel facial expressions may play an important part but I do not have any ideas of what they are.

variation of vocal intensity
variation in rate of speech
verbal statements about how important the activity is, i.e. self reinforcement
intensity of facial expression as though in though or animation
physical movements (gestures, etc.) in keeping with pace of voice

Gestures that express what words are saying, e.g. hands indicating bringing together, hand punctuating as a comma, exclamation mark or question mark.

Changes in rate slow at times more rapid at others
Emphasizes by increased volume.
Emphasizes by "clipped" sharp firm enunciation
Pauses (silence) followed by carefully expressed ideas.
Combinations of the above.

for students by proximity to them; by eye contact.
for activity - by participating
for ideas - by sharing one's own ideas and honoring others' ideas

for the educational situation - by being relaxed and spontaneous as though at ease and able to express self as a person

Clapping
Jumping up and down
Giving "Five"
Fist raised in air (as in "right on")
Thumbs up
Waving hands in air to be chosen

This must be judged with respect to the same individual not between individuals

Comments with raised pitch of voice, e.g. bravo, yeah, Way to go, etc.

Loud/shrill whistle
Praise statements usually loud "I like it, I like it"
Encouragement statements (as from teammates) "You'll do it, You'll do it"

Signs
Hurrying to get involved - line up, get onto floor, etc.

Smiling
handclapping
frequent positive prompting
frequent positive hustles
positive expectations verbalized
key phrases "all right", etc.
modeling
direct statements of expectant
smooth transitions
start on time
brisk pacing of instructor
APPENDIX E

LETTER TO STUDENTS REQUESTING THEM TO SPECIFY
TEACHER ENTHUSIASM BEHAVIORS
Dear Student:

I am a graduate student at O.S.U. in physical education teacher preparation. As a dissertation topic, I chose to develop an instrument that will measure teacher enthusiasm and also to design an instructional unit to train teachers to increase the level of teacher enthusiasm.

Close your eyes for a moment. Try to remember all the teachers whom you would consider enthusiastic. Try to recall the specific behaviors that made you think those teachers were enthusiastic. For example, enthusiastic teachers might smile a lot or keep the class moving at a fair pace or ? After you have generated your list of behaviors that make teachers enthusiastic, please write them on the enclosed form and return them to me.

Thank you so much for your cooperation and help.

Sincerely,

Amos Rolider
Teaching Assistant

encl.
APPENDIX F

LETTER TO TEACHERS REQUESTING THEM TO SPECIFY TEACHER ENTHUSIASM BEHAVIORS
Amos Rolider  
Physical Education Division  
Larkins Hall  
The Ohio State University  
Columbus, OH 43210  
October 5, 1978  

Dear Teacher:

I am a graduate student at O.S.U. in physical education teacher education. As a dissertation topic, I chose to develop an instrument that will measure teacher enthusiasm and also to design an instructional unit to train teachers to increase the level of teacher enthusiasm.

Close your eyes for a moment. Try to remember all the teachers whom you would consider enthusiastic. Try to recall the specific behaviors that made you think those teachers were enthusiastic. For example, enthusiastic teachers might smile a lot or keep the class moving at a fair pace or ? After you have generated your list of behaviors that make teachers enthusiastic, please write them on the enclosed form and return them to me.

Thank you for your cooperation and help.

Sincerely,

Amos Rolider  
Teaching Associate  

encl.
The following are things that enthusiastic teachers would do and/or say. Try to be as specific as you can.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.
APPENDIX G

LETTER TO TEACHER EDUCATION EXPERTS
REQUESTING THEM TO DEFINE TEACHER ENTHUSIASM
October 11, 1978

Dear Dr. Stevens:

I am a graduate student at The Ohio State University in the physical education teacher preparation program. As a dissertation topic, I chose to develop an instrument that will measure teacher enthusiasm and also to design an instructional unit to train teachers to increase the level of teacher enthusiasm. An attempt will be made to investigate the relationship between enthusiasm and different forms of student achievement.

In order to fulfill this project, I need your help in "defining" teacher enthusiasm. Please take a few minutes to write down the vocal and behavioral indicants which combine to communicate the concept of teacher enthusiasm to you. Your name is one of only 12 which was generated through discussion with my advisor as being knowledgeable in this area, thus your response is critical to the study.

A stamped, addressed envelop is enclosed for your convenience in returning your response. Please return the enclosed envelop no later than October 23, 1973.

Thank you very much for your help.

Sincerely,

Amos Rolider
Teaching Assistant

encls.
Behavioral indicants of enthusiasm (movements, gestures, etc.).
Please be as specific as you can.

1.
2.
3.
4.
5.

Vocal indicants of enthusiasm (tone, inflection, rate of speech, etc.).

1.
2.
3.
4.
5.

Other ways enthusiasm is communicated.

1.
2.
3.
4.
5.
APPENDIX H

FEEDBACK FORM
Name: ______________________________

1. Number of observations:___________

2. School: ___________________________

3. Unit: __________

4. Number of intervals observed for climate: ____________
   Number of intervals observed for V, NVI, NVII: ________

5. 

<table>
<thead>
<tr>
<th>Teacher Behavior</th>
<th># of Intervals/Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ob ob ob ob ob ob ob Tot Total</td>
</tr>
<tr>
<td></td>
<td>#1 #2 #3 #4 #5 #6 int.</td>
</tr>
</tbody>
</table>

   Management Time

   Instruction Time

   Activity Time

   Behavior and Skill Feedback-
   general (positive) +

   Behavior and Skill Feedback-
   general (negative)-

   Behavior and Skill Feedback-
   specific (positive)+

   Behavior and Skill Feedback-
   specific (negative)-

   Corrective Skill Feedback

   Skill feedback/Corrective Track

   Hustling Behavior (positive)

   Touching (in a friendly manner)

   Modeling (demonstration)

   Teacher Participation in the activity

   Teacher Smiling

250
<table>
<thead>
<tr>
<th>Teacher Behavior</th>
<th># of Intervals/Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher laughing</td>
<td></td>
</tr>
<tr>
<td>Gestures (use of hand to communicate)</td>
<td></td>
</tr>
<tr>
<td>6. Tally</td>
<td># of times</td>
</tr>
<tr>
<td>Changing of Activity</td>
<td></td>
</tr>
<tr>
<td>Joking</td>
<td></td>
</tr>
<tr>
<td>7. Voice Check</td>
<td></td>
</tr>
<tr>
<td>Number of voice checks: ________</td>
<td></td>
</tr>
<tr>
<td>in a period of: _______ minutes</td>
<td></td>
</tr>
<tr>
<td>Rate of speech</td>
<td></td>
</tr>
<tr>
<td>slow ________</td>
<td></td>
</tr>
<tr>
<td>normal ________</td>
<td></td>
</tr>
<tr>
<td>fast ________</td>
<td></td>
</tr>
<tr>
<td>Volume</td>
<td></td>
</tr>
<tr>
<td>high ________</td>
<td></td>
</tr>
<tr>
<td>low ________</td>
<td></td>
</tr>
<tr>
<td>Voice inflection</td>
<td></td>
</tr>
<tr>
<td>Clarity of speech</td>
<td></td>
</tr>
<tr>
<td>Clear ________</td>
<td></td>
</tr>
<tr>
<td>Unclear _____</td>
<td></td>
</tr>
<tr>
<td>8. Student active engagement: Checked _______ times</td>
<td></td>
</tr>
<tr>
<td>1. climate _______ # actively engaged _______ out of</td>
<td></td>
</tr>
<tr>
<td>251</td>
<td></td>
</tr>
</tbody>
</table>
Observer checklist

— Number of checklists __________
— Teacher appropriately dressed ______ times
— Equipment was ready for use ______ times
— Written evidence for expected outcome of lesson shown ______ times
— Lesson started on time ______ times

Rating scale by observers (scale of 1-5, 1 is lowest)

— Competency in subject matter ______
— Level of enthusiasm ______
— Competency in managing the class ______
— Evidence of rapport building ______
APPENDIX I

MANUAL OF TRAINING INTERVENTION
MANUAL OF TRAINING INTERVENTION

Session I

1. Introduction to the course and social activity
   a. Social introduction of the members
   b. Videotaping a segment of four minutes of subject teaching a motor skill selected by every subject

2. Explanation of the present study
   a. Background information regarding teacher enthusiasm research
   b. Explanation of the definition of teacher enthusiasm used in this study

3. Presentation of baseline data of each subject
   a. Provide feedback form to each subject
   b. Discuss individual data

Session II

1. Social activity
   a. Informal discussion--refreshments

2. Viewing of special videotapes
   a. Tape #1--10 minutes of presentation of high rate performance of teacher enthusiasm indicants
   b. Tape #2--10 minutes of presentation of low rate performance of teacher enthusiasm indicants
   c. Open discussion on the difference of teacher performance between the two tapes

3. Microteaching--three minute segment of general behavior and skill positive feedback
   a. Explanation and demonstration of general positive feedback
   b. Subjects instructed to teach three minutes with emphasis on general behavior and skill positive feedback
   c. Individual feedback by the investigator
   d. Watching videotapes of the preceding microteaching and recording the target behavior

4. Summary of the session
Session III

1. Social activity
   a. Informal discussion--refreshments (brought by one of the members)

2. Viewing of special videotapes
   a. Tape #1--10 minute presentation of teaching with emphasis on specific behavior and skill feedback
   b. Open discussion on the tape

3. Microteaching--3 minute segment of specific behavior and skill feedback
   a. Explanation and demonstration of specific behavior and skill feedback
   b. Subjects instructed to teach three minutes emphasizing specific behavior and skill feedback
   c. Individual feedback by the investigator

4. Microteaching--three minute segment of general or specific behavior or skill feedback followed by corrective statement
   a. Explanation and demonstration by the researcher
   b. Subject instructed to teach three minutes with emphasis on positive feedback followed by corrective statement
   c. Individual feedback by the investigator
   d. Watching videotapes of the preceding microteaching and recording the target behavior
   e. Summary of Session

Session IV

1. Social activity
   a. Informal discussion--refreshments

2. Lecture on ways to reduce management time

3. Microteaching--three minute segment of hustling behavior
   a. Explanation and demonstration by the researcher of hustling behavior
   b. Subjects instructed to teach three minutes with an emphasis on hustling behavior
   c. Playing "Tug-of-War". Each subject played the role of the leader hustling the group
   d. Viewing videotapes of the preceding microteaching and recording the target behavior
   e. Discussion on the topic of how to teach students to discriminate between various teacher responses and how to discriminate between various student responses as means of solving discipline problems
Session V

1. Social activity
   a. Informal discussion

2. Lecture on non-verbal communication as a teaching skill

3. Microteaching--three minute segment with emphasis on smiling
   a. Explanation and demonstration of smiling when providing feedback
   b. Subjects instructed to teach three minutes with emphasis on smiling whenever giving positive feedback
   c. Individual feedback by the investigator
   d. Watching videotapes of the preceding microteaching and recording the target behavior

4. Microteaching--three minute segment teaching while using only non-verbal communication
   a. Explanation and demonstration by the researcher
   b. Subjects instructed to teach three minutes without talking. They were encouraged to use hand movements and facial expressions to convey messages
   c. Individual feedback given by the researcher
   d. Watching videotapes of the preceding microteaching

5. Lecture and discussion on the topic: How to Increase the Number of Activities in a Given Lesson and How to Maximize Student Participation.

6. Summary of session

Session VI

1. Social Activity--refreshments

2. Lecture: The Use of Voice to the Benefit of the Effective Teacher, illustrated by demonstrations

3. Microteaching--three minute segment with an emphasis on voice inflection
   a. Explanation and demonstration by the researcher
   b. Group divided into three groups. The subject was instructed to relate to each group with soft, normal or loud volume of voice while teaching
   c. Individual feedback
   d. Watching videotapes of the preceding microteaching
4. Microteaching—eight minutes emphasising overall enthusiasm

5. Watching videotapes of the first session (baseline) and the last tape (overall enthusiasm)

6. Summary of the minicourse (open discussion)

Session VII

Individual discussion with each subject on specific problems and future goals for improvement
APPENDIX J

VALIDITY OF THE INDEPENDENT VARIABLE
(TRAINING INTERVENTION)
An independent observer was given the intervention manual, the names and number of subjects participating in each group and the schedule of the sessions. She was asked to attend as many sessions as she could without giving special notice of an impending observation. Her task was to record diversions from the training manual and full attendance of subjects. A comparison of her observations with the training manual substantiate the claim for internal validity of the independent variable. Minor deviations from the training manual are noted below. No major deviations were judged to have occurred.

Group I

Session I
a. Videotaping of a four minute segment of subjects' teaching was not executed
b. Presentation of baseline data for each subject with explanation of definition--60 minutes instead of 30

Session II
a. Introduction and social activity--30 minutes instead of 15
b. Subject 15 left after 75 minutes

Session III
a. Microteaching followed by group and leader feedback emphasising specific feedback--50 minutes instead of 30 minutes
b. Subject 2 was absent
Session IV

a. Lecture on ways to reduce management time—was omitted

b. Tug-of-war, game to increase hustling behavior—did not take place

c. Subjects were not asked to teach three minutes emphasising hustling behavior

Session V

a. Subject 10 was absent

Session VI

a. Lecture: The use of voice to the benefit of the effective teacher—60 minutes instead of 30 minutes

Group II

Session II

a. Watching videotapes of the preceding microteaching and recording of target behaviors (general behavior and skill feedback)—did not take place

b. Subject 9 was absent

Session III

a. Subject 1 was absent

Session IV

a. Microteaching emphasising corrective statements—was not included in manual

b. The lecture on ways to solve discipline problems—60 minutes instead of 30 min.

c. Subject 16 was absent

Session VI

a. Exercise in voice projection—60 minutes instead of 35 minutes
b. Subject 12 did not videotape the eight minutes emphasising overall enthusiasm

Group III

Session I
a. Presentation of baseline data of each subject with explanation of definition--65 minutes instead of 30 min.
b. Subject 14 was absent

Session III
a. Viewing special videotapes that emphasise behavior and skill feedback/specific and skill feedback/corrective--did not take place
b. Subject 13 was absent

Session VI
a. Introduction and social activity--35 minutes instead of 15 minutes
b. Subject 6 did not microteach the eight minutes emphasising overall enthusiasm
BIBLIOGRAPHY


Barr, A.S. and Eman, Lester M. "What Qualities Are Prerequisite to Success in Teaching?" The Nation's Schools VI (3), September, 1930. pp 60-64.


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