ANALYSIS OF TEACHING BEHAVIORS OF CHALLENGE COURSE INSTRUCTORS

By

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CHAPTER ONE

INTRODUCTION

Seeking to discover what makes teachers effective has made teaching methods a focus of study since the time of Socrates (Luckner, 1994). In the modern classroom, teachers who are seen to be effective are those who produce positive student outcomes. Effective teachers are studied so that their skills may be passed on to those who desire to be more effective teachers. While there have been numerous studies on the effectiveness of classroom teachers, few studies have been conducted in the growing field of outdoor experiential education which includes wilderness field courses and challenge courses. This study is focused on the effectiveness of challenge course instructors, as compared to, expert classroom teachers, and to experienced wilderness field course instructors.

Investigation of teacher effectiveness, centering primarily on personality types and characteristics, has been documented as early as the beginning of the 20th century (Siedentop, 1991). In the past thirty years the emphasis of teacher effectiveness studies has shifted from teacher characteristics and personality types to the study of observable teacher behaviors that are considered to be both alterable and trainable (Gage, 1994; Hawley, Goldstien, Rosenholtz & Hasselbring, 1984).

The investigation of teacher behavior and its link to teacher effectiveness has been conducted in physical education classes and in traditional classrooms.

Overall, research indicates that teachers who employ interactive teaching practices and behaviors are found to be effective in producing students who achieve mastery of basic skills (Hawley et al, 1984). While much has been determined about teaching behavior and the use of interactive teaching practices and its effect on student learning in the traditional classroom, few studies have focused on outdoor experiential education.

Outdoor experiential education has gained popularity, and many claims have been made about associated student outcomes. If these outcomes are postitive then perhaps teachers are employing unique behaviors. Teacher effectiveness in the outdoor experiential setting has received little attention. It seems appropriate to extend the research on interactive teaching practices to an outdoor experiential education setting because of the interactive nature of the field. Interactive teaching practices are commonly employed in outdoor experiential education and Cornell (1979) notes that students will understand and respond to information when a teacher is able to interact with them while teaching an outdoor experiential education class.

The interactive teaching practices used in outdoor experiential education are described by Luckner (1994). He identifies a sequence of components: 1) setting goals; 2) presenting new material and practicing skills presented; 3) providing systematic feedback; and 4) continuing practice until students are independent and confident. These are similar to practices employed by effective expert teachers (Hawley et al, 1984; Tomic, 1994). Luckner (1994) claims an effective teacher in outdoor experiential education must follow the sequence of interactive components, interacting effectively with the participants. Challenge course instructors typically follow such a sequence - those which are similar to the sequence employed by effective classroom teachers.

In outdoor experiential education, many types of learning occur through a variety of different experiences. One of the most popular forms of experiential outdoor education is the challenge course, a combination of both physical and mental challenges. The course uses games, and physical obstacles to challenge the participants. The goal of a challenge course is to facilitate growth and learning in individuals, groups and organizations (Smith, 1994). Learning is directed at teamwork, leadership skills, self confidence, trust and communication skills. These goals are achieved through the students' participation in challenge course activities. The course is facilitated or taught by the facilitators or instructors. They are responsible for teaching games, conducting group problem solving initiatives, helping to explore group interactions and managing the high rope elements of the course throughout the experience.

One instrument used to study observable behaviors of effective classroom teachers is the Flanders Interaction Analysis tool. It was developed in 1964 to examine teacher and student behaviors and interactions. Flanders utilized this instrument to explore how teacher behaviors effect student achievement (Gage, 1994). Teacher effectiveness in the physical education setting has also been examined with the Cheffers Adaptation of the Flanders Interaction Analysis System (CAFIAS). It was developed specifically for the physical education setting and is used to analyze the interactions of teachers and students. The CAFIAS is used to determine the direct and indirect influence of teachers on their students by recording teacher interactions and to incorporate verbal and nonverbal interactions and student responses and behaviors (Cashel, 1986). The CAFIAS also indicates that interactive teaching behaviors are employed by the most effective teachers in physical education settings (Cheffers & Mancini, 1989).

The challenge course, and other outdoor experiential education settings, are similar to a physical education setting in that they offer physical activities and

interaction in an atmosphere not limited to the classroom. On the other hand, a challenge course is also similar to an interactive classroom situation in that it involves thoughtful or thought provoking inquiry and problem solving. These similarities indicate that it is appropriate to use the CAFIAS to study the behavior of outdoor experiential educators - specifically challenge course instructors. Wilderness field course instructors have been studied using CAFIAS (Cashel & Gangstead, 1987). That limited study affords the opportunity to compare the challenge course instructors with the expert wilderness field course instructors. This study uses the CAFIAS: 1) to examine challenge course instructors and their teaching behaviors, and: 2) to see if they exhibit the same behaviors as expert classroom teachers, and: 3) to compare challenge course instructors behaviors to those of experienced wilderness field course instructors.

Statement of the Problem

The purpose of this study was to conduct case study analyses of challenge course instructors to determine if they display the behaviors attributed to effective teachers. The analyses were conducted in three parts. First, teaching behaviors of challenge course instructors were examined. Second, behaviors observed were compared to those of effective physical education and classroom teachers using CAFIAS. Third, the teaching behaviors of challenge course instructors were compared to those of expert outdoor instructors.

This study focused on the following behaviors which can be observed with CAFIAS:

1. Total teacher contributions; this includes all teacher behaviors observed during the coding period.

2. Total student contributions; this includes all student behaviors observed during the coding period.
3. Teacher use of questioning is the verbal and nonverbal questions of the teacher compared to verbal and nonverbal lecturing behaviors.
4. Teacher use of acceptance and praise are the teacher behaviors related to praise and acceptance as compared to the use of criticism.
5. Teacher responses to student behavior in both direct and indirect ways; the number of responses of the teacher reacting to student input or ideas indirectly and directly.
6. The amount of time the teacher spent in expanding student ideas; the extension and acceptance of student ideas by the teacher.
7. The amount of time spent in a constant behavior versus transitional behaviors; when any behavior by the teacher or student is being exhibited for an extended period of time.
8. Student responses to teachers; the total student response to teacher behaviors both verbal and nonverbal.
9. Total student initiated/teacher suggested response is the unexpected and unpredictable self-initiated student verbal behaviors as compared to all student verbal behaviors.
10. Total teacher student interactions; this includes all teacher and student behaviors where interaction has occurred (Cheffers & Mancini, 1989).

Research Design

This study utilized the case study method, which is an intensive study of one person or one situation. A case study typically seeks insights that will have a more generalized applicability beyond the single case under study, but the case study itself cannot assure this (Babbie, 1973). The case study method allows many variables to be examined at once which will provide several reference points to determine effective teaching behaviors. Each subject was videotaped as part of this case study. Three observers then carefully analyzed videotapes to identify recurring patterns of teacher and student behaviors. Participants identity will not be revealed. Participants were given the option to withdraw from the study at any time.

Five individuals were filmed and analyzed with the Cheffers Adaptation of the Flanders Interaction Analysis System (CAFIAS). The case study represents a comprehensive description of five challenge course instructors at Camp Redlands, part of Oklahoma State University. The subjects were videotaped during four teaching episodes. The total filmed time for each subject was twenty to thirty minutes dependent upon the time each individual used to complete the lesson. The videotape was then analyzed using the CAFIAS observation tool. Three observers were trained and two observers viewed and scored each instructor's teaching episodes. The four lessons were: 1) Challenge Course introduction, here the instructor gave basic rules and instructions; 2) initiative debriefing, a discussion following each activity to explore and reinforce what was learned; 3) harness talk, instructions of how to safely wear the harness; 4) and transfer talk, instructions of how to transfer from one high Challenge Course element to another.

Limitations

This investigation has the following limitations:

1. The small number (n=5) of subjects.
2. Instructors had a range of 8 months to 2 years of experience working on the challenge course.
3. Few studies have looked at behaviors of challenge course instructors.

Delimitations

The following delimitations were made:

1. The study is delimited to challenge course instructors with less than two years of experience.
2. This study is delimited to challenge course instructors from a university in the south central U.S.

Definition of Terms

For the purpose of this study the following definitions were used:

1. Challenge Course: a challenge course is a series of both physical and mental challenges which are presented to a group to increase the participants self-esteem and acceptance of self and others. These challenges require a combination of teamwork skills and individual commitment to complete. The challenge course encourages the development of skills that can be transferred and applied to other life situations away from the challenge course. A challenge course is

constructed of rope, cables, and wood. A course can be constructed outdoors in trees or using telephone poles or indoors in gymnasiums (Webster, 1989).

2. Challenge Course Instructor: a person who has been trained in processing skills and technical skills needed to lead a group through a challenge course experience (Rohnke, Tait & Wall, 1997).
3. Effective teacher behaviors: the behaviors identified in the literature which are proven to produce positive student outcomes, these behaviors are listed in the literature as: planning and organization, setting student expectations and goals, clear and concise presentation of content, giving specific feedback, practice of new skills, and teacher student interaction.
4. Experiential Education: a type of learning program in which physical and/or psychological demanding outdoor pursuits are used within a framework of safety and skills instruction to promote interpersonal and extra personal growth (Luckner, 1994).
5. Interactive Teaching: the times when the teacher is engaged in two-way communication with the student and the student is able to ask questions, discuss concepts and receive specific feedback.

CHAPTER TWO

REVIEW OF LITERATURE

Introduction and Overview

Definitions of teaching and methods of becoming an effective teacher are frequently discussed topics. Teaching can be viewed as an art or a science. As an art, teaching calls for vision, intuition, talent, commitment, and creativity - very little of which can actually be taught. As a science, teaching utilizes knowledge and skills that can be learned (Woolfolk, 1993). Teaching involves many techniques, procedures, and skills that can be systematically studied and described, and, therefore, transmitted and improved. Since the goal of teaching is student learning, empirically-based insights into the relationship between teaching behavior and student learning indicate that teachers can have a positive impact on student achievement (Cheffers, 1972; Tomic, 1994). When students' learning outcomes improve because of the teacher, this implies a causal connection between the teaching behavior (which is alterable) and the students' achievement. The desired change in learning outcomes is assumed to be a function of the teaching behavior (Tomic, 1994).

This chapter begins with a brief history of research on teacher effectiveness. This history describes how the research evolved from studies of teacher characteristics such as intelligence, personality and gender to

"process/product" research which investigates specific teacher behaviors (process) and resulting student outcomes (product). Eventually, this evolution led to the development of objective observer tools such as the Flanders Interaction Analysis System (FIAS) and the Cheffers Adaptation of the Flanders Interaction Analysis System (CAFIAS). The process/product research leads to the definition of effective teaching and, through repeated utilization of CAFIAS, describes specific behaviors that effective teachers display. These behaviors frequently include a strong emphasis on interaction between the teacher and students as well as an active role for the students in general. This sort of interaction and active role for the students is integral to outdoor experiential education and, more specifically, to challenge courses. A description of these educational experiences follows and illustrates their interactive relationships. Finally, justification of using the CAFIAS to study challenge course instructors is provided, leading to the rationale for the current study.

Effective Teacher Behaviors

The evaluation of teachers continues to be a critical problem because of the complexity of the teaching-learning process. Thus there are a variety of opinions on exactly what constitutes good teaching, or what precisely an excellent, good or effective teacher is (Darst, 1991; Tomic, 1994). Researchers have found many behaviors that affect student achievement. Effective teacher behaviors have been defined as "those in-class behaviors of the teacher that are related directly either to positive student outcomes or positive evaluation of teaching" (Nussbaum, 1992). Identified effective teaching behaviors began as a limited collection of scattered results that did not combine well to form easily interpretable patterns. As research progressed, these patterns have grown into a

sizable collection of replicated correlational findings, many of which have been validated experimentally. As the findings have become better known and integrated into the research on teaching behaviors, they have established a core of knowledge capable of influencing teacher education and teaching practice (Brophy, 1988).

Within this knowledge base, there are several general types of teacher behaviors that recur. For example, many studies identify planning and organization of lessons and management of the classroom as valuable practices for teachers to display in order to generate positive student outcomes (Ballinger, 1993; Chrisci, & others, 1991; Gage, 1994; Hawley, et al, 1984; Koehler, 1984; Luckner, 1994; Reyes and others, 1986; Rink, 1994; Squires, Huitt & Segars, 1983; Tomic, 1994). Ballinger (1993), explains specifically why planning and organization of lessons is important to student outcomes.

> Planning includes attending to student pacing, interest, and measurable behavioral outcomes. Students must be held accountable for practice and activity time. Recognizing that students enter the class with varied skill levels and progress at varied rates, effective teachers provide a variety of tasks during independent practice times, thereby maintaining student interest (p. 13).

Tomic (1994), identifies classroom management as a valuable tool in the learning environment. "Classroom management means providing the facilities and setting up the procedures necessary to create and maintain a situation in which learning and teaching can take place."

Setting student expectations and goals is also found to be a valuable behavior for teachers to use in order to ensure that their students are successful in learning (Ballinger, 1993; Chrisci et al, 1991; Hawley, et al, 1984; Koehler, 1984; Luckner, 1994; Reyes and others, 1986; Rink, 1994; Rosenshine, 1986;

Tomic, 1994). On setting expectations and goals, Luckner (1994), includes the following important aspects: providing an overview of what will be presented; include information on what students will learn, what they will do, and why it is important. After establishing these goals, Luckner also maintains that it is important to establish a link between new information and previously learned material or skills.

Presentation of content in a clear and concise manner is a teacher behavior used to ensure students have positive learning outcomes (Ballinger, 1993; Brophy, 1988; Chrisci et al, 1991; Good, 1984; Hawley, et al, 1984; Koehler, 1984; Luckner, 1994; Reyes and others, 1986; Rink, 1994; Rosenshine, 1986; Squires, 1983;). Rosenshine (1986), states "explicit instruction focusing on the concepts and skill to be learned from the teacher not only helps the learner focus, it also reduces ambiguous processing. It is important for the teacher to avoid ambiguous phrases such as "sort of", "as you see" and "a few". These phrases lack clarity and may confuse learners."

Giving specific feedback is also found to be a valuable behavior for teachers to use in order to ensure positive student outcomes (Ballinger, 1983; Brophy, 1988; Chrisci et al, 1991; Hawley, et al, 1984; Koehler, 1984; Luckner, 1994; Reyes and others, 1986; Rink, 1994; Squires, 1983; Tomic, 1994). Ballinger (1993), says that teacher feedback is important when given with value content and praise for improvement or close approximation. Students should not be forced into competitive games with highly skilled children and should not be embarrassed or singled out. They should be afforded opportunities to respond within a safe and positive environment.

Reviewing information and practice of new skills is also found to be a valuable behavior for teachers to use in order to ensure that their students are successful in learning the class content (Ballinger, 1983; Brophy, 1988; Chrisci et

al, 1991; Hawley, et al, 1984; Koehler, 1984; Luckner, 1994; Reyes and others, 1986; Rink, 1994; Rosenshine, 1986; Tomic, 1994). After presentation, or after short segments of the presentation, the teacher needs to conduct guided practice. A major purpose of this activity is to supervise students' initial practice on a skill and provide the active practice, enhancement, and elaboration necessary to move new learning from working memory to long-term memory.

Studies indicate that the importance of interaction and the sequence of interaction between the teacher and student correlates positively with student achievement. Interactive teaching can take many forms. However for the purpose of this study, it can be defined as the times when the teacher is engaged in two-way communication with the student and the student is able to ask questions, discuss concepts and receive specific feedback. There are many opportunities during a lesson for interaction and teachers need to apply strategies which result in a high level of student involvement. Researchers have found that most effective teachers use a sequence or process of teaching which has consistently been found to produce high student achievement. Hawley et al (1984), have identified a basic conceptual sequence as:

> "Student attention is first directed to the material to be learned through exigent teaching behaviors such as enthusiasm, advanced organizers, or the demand of student readiness. These cues, as they are called by some, include explanation about what is to be learned as well as expectations for specific learner participation. Next, students become actively engaged by interacting and participation with the content of the lesson. Here feedback provided through student participation directs teachers ether to proceed or to render alternative explanations. As a result students apparently sense the need for assistance and they request that, under conditions of optimum learning, is readily available. Next, students are rewarded or reinforce for their efforts at learning. Specific praise directs all learners' attention to the particular

> behaviors to be mastered. Finally, interactive practice with the instructor and the resulting corrective feedback from the exchange provides students both with specific areas toward which to target improvement and specific reasons to become task engaged during later independent practice (p. 29).

Hawley, et al, (1984), also notes that the interactive sequence carries far greater value than any one of its individual components.

In this sequence, effective interactive teachers continue student in-class practice until students are firm in their understanding of the content and are not making errors. Teachers must provide frequent and regular monitoring of students and immediate and frequent content-focused feedback (in contrast to praise or criticism) to students about their performance (Hawley, et al, 1984).

Interaction is seen to be an important aspect of any of the previously mentioned teacher behaviors. For example, when a teacher is able to present the materials in a clear and concise manner that is interactive, that teacher is more effective. Flanders and Cheffers identified interactive behaviors as a key to student learning. When Cheffers adapted his observation tool from the Flanders Interaction Analysis System, he was successful in creating an instrument that would record all interactions, both verbal and nonverbal, between teacher and students and the sequence of these interactions (Cheffers, 1972).

Like Flanders, the CAFIAS system examines interaction in an educational setting. The underlying assumption of the instrument is that certain interactions and patterns of interactions are reflective of good teaching. Cheffers discussed the use of observation tools to improve student achievement and for promoting appropriate teacher-student interaction (Silverman & Buschner, 1990).

History of Research On Effective Teaching

Presage Research

Investigations of teacher effectiveness, centering primarily on personality types and characteristics have been documented as early as the beginning of the 20th century (Siedentop, 1991). Efforts were made to identify effective teachers by studying variables such as intelligence, educational level, scholarship, age, years of experience, knowledge of subject matter, extracurricular activities, general culture, economic status, gender, marital status, performance on paper-pencil tests of putative "teacher aptitude," inventories of attitude toward teaching, voice and speech characteristics, appearance and personality characteristics (Gage, 1994). These variables consist of what are now called "presage" variables, unalterable and static characteristics. The teacher's presage variables turned out to be unrelated to student achievement (Gage, 1994). From the study of presage variables, researchers realized that better results might come from looking at what goes on in the classroom. Subsequently they carefully considered what variables in the classroom process might make a difference in what students learned (Gage, 1994). Observation systems were developed in the 1960s to observe teacher behavior. These studies conducted by Gage (1986) and Flanders (1962) showed moderate success in "objective measurement of teacher behavior linking to objective measurement of student achievement" (Brophy and Good, 1986).

This was a revolutionary shift in educational research away from studies of static and unalterable characteristics to the study of observable behaviors in the teaching and learning process that are both alterable and trainable. "It is now possible to identify practices and behaviors that constitute a technology of

effective teaching" (Hawley et al, 1984). In this type of research, teaching is broken down into process (what goes on in the classroom) and product (student outcome) variables (Cashel, 1986; Kindsvatter, Wilen and Ishler, 1988).

Process/Product Research

In the past thirty years the emphasis of teacher effectiveness studies has made a shift from presage variables to the study of observable teacher behaviors that affect student outcomes. This type of study is called "process/product" research (Gage, 1994; Hawley et al, 1984). Process/product research is an attempt to discover relationships between teaching behaviors (the process), and the learning outcomes of students (the product). The learning outcomes achieved by the students are taken as the measure of teacher effectiveness (Tomic, 1994).

During the mid 70 s federal agencies began large scale studies of teacher behavior. These activities helped pull together and unify process/product research specifically, and research on teaching generally, as viable fields of scientific inquiry (Brophy and Good, 1986; Gage, 1994).

In 1973 Rosenshine and Furst noted that consistent findings had begun to accumulate in research using the classroom observation instruments. In 1974, Dunkin and Biddle helped to define the field of research on teaching by reviewing all research that measured teacher behaviors. They helped to bring better scientific method to future studies by finding problems in past research and setting standards for future classroom behavior research (Gage, 1994).

Process/product research has been successful in discovering relationships between what goes on in the classrooms and student achievement of educational objectives (Gage, 1994). Process variables include the actual activities of

classroom teaching, what teachers and students do, amount of time spent on tasks, how students respond to the teacher, teacher behavior such as feedback and cues for performance, directions, and evaluation (Rink, 1985). The results of this research approach show that variation in teaching behaviors relates systematically to variation in learning outcomes on the part of students, both in the cognitive and the affective domains (Tomic, 1994).

Specific process and product behaviors can be identified in both teachers and students. Research has shown that teacher behaviors linked to process/product variables correlate positively with student achievement (Gage, 1994; Kindsvatter et al, 1988). Objective tools have been developed to evaluate teachers. These tools rely on observer systems which record moment by moment behaviors that can be categorized and analyzed objectively to test for teacher effectiveness. Roland (1983) describes these instruments:

> Observer systems are tools to study dynamic on-going interaction between people. They allow an observer to use a coding system in order to divide behaviors (leaders' and participants') into meaningful and manageable categories. The observer can then record the particular behavior and analyze the resulting data to some method of data analysis (p. 11).

Flanders developed an observation tool named the Flanders Interaction Analysis System (FIAS). His studies advanced the field of process/product research by providing an in depth look at the moment by moment behaviors of classroom teachers (Gage, 1994).

Cheffers Adaptation of the Flanders Interaction System

Flanders Interaction Analysis System (FIAS) is described by Martinek and others (1982) as follows:

> The most widely known system for observing and describing teacher-student interactions in the classroom was developed by Ned Flanders in the early sixties. Flanders' main purpose for devising the interaction analysis system, known as FIAS, was to help teachers, supervisors and other educators directly concerned with the teaching-learning process understand and improve the role of the teacher in the classroom (p. 68)

FIAS is an observer system that focused primarily on indirect behaviors because Flanders believed teachers "should do more questioning and less lecturing" (Brophy & Good, 1986). Many studies have been conducted with modifications to the FIAS (Gage, 1994). While FIAS was a good tool to observe verbal behaviors, Cheffers found it limited and not representative of interactions found in teacher student behaviors in the physical education setting (Martinek, Crowe, Rejeski, 1982). So, Cheffers developed the Cheffers Adaptation of the Flanders Interaction Analysis System (CAFIAS).

Like FIAS, the CAFIAS system examines interaction in an educational setting. The underlying assumption of the instrument is that certain interactive patterns are reflective of good teaching. For instance, Cheffers discussed the use of the observation tool to improve student achievement, to promote appropriate teacher-student interaction, to improve teacher behaviors and to train pre service teachers (Silverman & Buschner, 1990; Martinek et al, 1982).

The CAFIAS has its foundation in early process/product research and is an observation system that has been developed to generate detailed information concerning interaction between a leader and the participants (Roland, 1983). The

instrument was designed for physical education settings, but also has been adapted for other disciplines. CAFIAS has been widely used in research to provide feedback to teachers and coaches. For the period of 1975-1984, it was the most frequently employed systematic observation instrument used for research in teaching in physical education and still maintains widespread acceptance (Silverman & Buschner, 1990; Wuest & Lombardo, 1994). Cheffers and Mancini (1989) describe generally how the system is used.

> "The system uses numbered categories to objectively code verbal and nonverbal behaviors between teacher and student. It identifies specific teaching agencies and class structure and elaborates on student response behaviors, it gives the sequence of interactions. CAFIAS divides behaviors into two major categories: teacher behaviors and student behaviors" (p. 119).

CAFIAS is designed to describe verbal and nonverbal behaviors in teaching. This is attained by recording moment by moment behaviors during interaction occurring in movement oriented environments (Roland, 1982; Schempp, 1987). The CAFIAS can be used to determine the direct and indirect influence of teachers on their students (Cashel, 1986). Specific information can be obtained that include how often the teacher used praise, direct and indirect behaviors, acceptance, questions, lectures, criticism, narrow responses, broad interpretive responses or creative responses.

CAFIAS data falls into the following categories: 1) Total teacher student interactions. This includes all teacher and student behaviors where interaction has occurred; 2) Total teacher contributions. This relates to the amount of time the teacher spends as teacher or is in charge of the class; 3) Total student contributions. This relates to the amount of time the student spends on task, initiates behaviors or interpretation of teacher, or other student input; 4) Amount of confusion or silence. Silence and confusion relates to student time

spent confused or time thinking about the lesson content or answers to teacher questions; 5) Teacher response to student behavior. This is how often the teacher responds to the students behavior in a direct or indirect manner; 6) Teacher time spent expanding student ideas and teacher's constructive integration. Teacher expansion of student ideas indicates the acceptance and extension of student ideas; 7) A steady state. This relates to the amount of time the student or teacher spends expanding ideas; they are continuous states of behavior; 8) Student responses to teacher, total student dependent behavior. These indicate predictable responses to instructor's questions or directions, they are simply responses to the teacher which take no synthesis or learning (Cashel, 1986; Cheffers & Mancini, 1989).

To conclude, observer systems, such as the CAFIAS, have shown that behaviors used in effective physical education settings are the same behaviors one would see utilized by effective teachers in traditional classrooms (Siedentop, 1991).

In a study by Harris (1985), CAFIAS was used to compare classroom teachers among others to outdoor education teachers. In this study, she found only one significant difference between outdoor education teachers and classroom teachers. The outdoor experiential education students were more verbal in their response to the teacher.

Outdoor Experiential Education

The roots of outdoor experiential education can be traced to an educational theory and practice developed by John Dewey. Dewey proposed a major shift in educational theory toward student experience. In his proposal, he suggested structuring the student's educational experience so the student would

learn how to move from challenge to resolution in any situation (Crosby, 1995). This was a major break from the then current educational model where great emphasis is placed on the "ability of the student to sit passively and commit ideas to memory" (Hunt, 1995). Experiential education is currently defined as an "orientation toward teaching and learning that values and encourages linkages between concrete educative activities and abstract lessons to maximize learning" and is a method of presentation that can be applied to all academic fields (Sakofs, 1995). Proudman (1995) identified the experiential education process as a "series of critical relationships; the learner to self, the learner to teacher, and the learner to the learning environment".

Laura Joplin (1995) has identified five components of the experiential education learning process. This five stage model begins with: 1) focus; 2) on the challenge" then moves to the; 3) action phase where the learner is placed in a situation where a problem is unavoidable. The fourth phase is concurrent with all phases and is called support and feedback, here the learner is given the necessary information and support to move through the challenge. The last phase is debrief, here the student is guided in a sorting and ordering of the experience, this is a critical phase where the student reflects on and learns from the experience.

Outdoor experiential education is a type of learning experience which presents challenges that are physically and or psychologically demanding. Outdoor pursuits and skills are used within a framework of safety and skills instruction to promote interpersonal and intrapersonal growth (Luckner, 1994).

Outdoor experiential education is a natural extension of the experiential education theories and practice to education that it is conducted in the outdoors. The teacher primarily directs the experience and uses interactive teaching

methods in which participants are active and involved while instruction is occurring (Hammerman, Hammerman and Hammerman, 1984).

Challenge Courses

The challenge course is one of the most commonly used forms of outdoor experiential education. It is an outgrowth of the United States Outward Bound school formed in the 1960 s based on Kurt Hahn's educational principles (Drebing, Willis and Genet, 1995). The first Outward Bound school in Europe was developed to help the young soldiers of Britain survive during WW II. At the beginning of the war Hahn noticed a disturbing trend. The young soldiers were dying at an alarming rate while the veterans of the first World War were surviving (Miner, 1990). The only difference between the two groups was experience. The Outward Bound program was developed to provided life experiences that gave the soldiers a sense of self-worth, an understanding of human interdependence and concern for those in need (Miner, 1990). The success of the wartime program inspired the development of the Outward Bound school in many countries. These schools continue to follow the basic principles set forth at the conception of the program which are: to use experience in challenge activities primarily in wilderness settings; to teach both adults and young people more about themselves and others; and, to help them realize that many of their preconceived limits were self imposed.

One of the activities the students of Outward Bound participated in was a type of obstacle course that became known as a challenge course. The challenge course concept was further developed by Jerry Pieh of Project Adventure in 1971. The founding goal of Project Adventure was to employ the Outward Bound concepts of group challenges, problem solving and teaching through

experience (Webster, 1989). The challenge was to integrate these principles of Outward Bound into the school curriculum at the Hamilton-Wenham School where Jerry Pieh was the principal.

Challenge courses are now utilized in many settings. The concept and goals of the challenge course remain the same: to develop skills for promoting interpersonal and intrapersonal growth and furthering group understanding, thereby strengthening the individual and group. This is accomplished through the use of a sequence of interactive activities that moves a group through the challenge course experience (Schoel, Prouty, and Radcliffe, 1988). Participation in outdoor experiential education activities have resulted in positive effects on personal growth and group development (Isaac & Goth 1991).

This series of activities generally moves through a sequence of physical and mental preparations with stretching, name games, development of trust and problem solving skills (Rohnke, 1989). In order for the group to move successfully through the challenge course sequence of activities, the challenge course instructor must have adequate instructional skills (Ringer, 1994; Webster 1989). These skills needed to instruct a challenge course can be compared to the skills a teacher in a physical education classroom would use. Teaching in the physical education classroom is primarily by example and interaction between the teacher and student until the student learns the skill. Skills in the physical education class are most often taught outside of the classroom. Because of the similarities between the physical education classes and outdoor experiential education, CAFIAS was the observation tool selected as most appropriate for the study of outdoor experiential education situations. In a study by Harris (1985), CAFIAS was used as a tool to compare classroom, physical education classes and outdoor education classes. Similarly, Cashel and Gangstead (1987) used CAFIAS

to study the teaching behaviors of expert outdoor instructors while they were teaching in an outdoor setting.

Rationale for Current Study

The complexity of the teaching-learning process in the outdoors, where participants are active and involved while instruction is occurring, creates some unique opportunities for teachers (Darst & Armstrong, 1991). These opportunities for learning will not be realized if the facilitators of the outdoor experiential education experience are not using effective teaching behaviors. The literature supports a need to explore teacher effectiveness in the outdoors with formal research methods due to the growing interest in outdoor education. Outdoor experiential educators are expected to teach their students many skills, yet many instructors enter the field with a strong background in recreation and little training as an educator. Consequently, they may teach their students these important skills inefficiently or ineffectively (Luckner, 1994). Challenge course instructors are a population of outdoor leaders who have not been studied for teacher effectiveness.

Studies have been conducted on challenge courses that confirmed the positive learning outcomes of students but these studies did not look at the specific behaviors of the instructors during the challenge course experience (Doherty, 1995).

Summary

This chapter began with a brief history of research on teacher effectiveness. This history described how the research evolved from studies of

teacher characteristics such as intelligence, personality and gender to "process/product" research which investigates specific teacher behaviors (process) and resulting student outcomes (product). This evolution led to the development of objective observer tools such as the Flanders Interaction Analysis System (FIAS) and the Cheffers Adaptation of the Flanders Interaction Analysis System (CAFIAS). The process/product research leads to the definition of effective teaching and, often using the CAFIAS, describes specific behaviors effective teachers display. These behaviors frequently include a strong emphasis on interaction between the teacher and students and an active role for the students in general. This sort of interaction and active role for the students is integral to outdoor experiential education and more specifically challenge courses. Finally, justification of using the CAFIAS to study challenge course instructors was provided, leading to the rationale for the current study.

CHAPTER THREE

METHODOLOGY

The purpose of this study was to conduct case study analyses of challenge course instructors. Comparisons to classroom and physical education teachers and outdoor instructors provide additional measures to determine the effectiveness of the selected challenge course instructors. This chapter is a description of the methods used in collection and analysis of the data.

Statement of the Problem

The purpose of this study was to conduct case study analysis of selected challenge course instructors. Comparisons to classroom and physical education teachers and outdoor instructors provide additional insights to determine effectiveness of the selected challenge course instructors. The analysis was conducted in three parts. First, teaching behaviors of the selected challenge course instructors were examined using the Cheffers Adaptation of the Flanders Interaction Analysis System (CAFIAS). Second, behaviors of the selected challenge course instructors observed were compared to those of effective physical education and classroom teachers as measured with CAFIAS in previous studies. Third, the teaching behaviors of selected challenge course instructors were compared to those of expert outdoor instructors.

Description of the Subjects

Subjects were active challenge course instructors from a university in the South Central U.S. Five subjects were selected based upon dates of scheduled course and the consent of the participating Challenge Course groups. Each subject was invited to participate in the study and asked to fill out a consent and demographic form (see Appendix B). All instruments and questionnaires were submitted to and approved by the Institutional Review Board at Oklahoma State University prior to initiation of the study.

Description of the Instrument

Data were analyzed using the Cheffers Adaptation of the Flanders Interaction System (CAFIAS) tool. This system codes both verbal and nonverbal interactions at five second intervals. The system consists of 10 categories each with a verbal and nonverbal option (see Appendix B). The verbal behaviors are coded 2-10 and nonverbal behaviors are coded 12- 20. Teacher behaviors are 2-7 and 12-17 and student behaviors are 8-9 and 18-19. Special categories, eine (8/) and eineteen (18/), fall between categories 8-9 and represent verbal and nonverbal higher order predictable student response (Silverman, 1990). The system uses numbered categories to code behaviors between teacher and student, identifies specific teaching agencies and class structure and elaborates on student response behavior (Cheffers & Mancini, 1989). CAFIAS is based on the process/product theory: when learning occurs teaching has taken place (Cheffers, 1972). Teaching can take place through the teacher, student or the environment. Information from CAFIAS describes the direct or indirect influence of the teacher and the type of student responses teachers receive as a

result of those behaviors (Rink, 1985). A time limit of 5 seconds is placed on extended behaviors, but the recorder codes all behaviors that are observable. The tallies are transferred to a matrix, from which a variety of interpretations can be made. The following behaviors will be analyzed in this study:

- Total teacher student interactions
- Total teacher contributions
- Total student contributions
- Teacher responses to student behavior in both direct and indirect ways
- The amount of time the teacher spent in expanding student ideas
- The amount of time spent in a constant behavior versus transitional behaviors
- Student responses to teachers (Cheffers & Mancini, 1989)

The unit of measurement for interval recording is frequency of intervals. However, in virtually all cases it is derived, percentage of intervals in which the behaviors occurred, is used for reporting such data.

Each tally recorded is transferred to a 20X20 matrix. The total is presented in the frequency counts of each CAFIAS category, as well as percentages and ratios of each parameter and the patterns of interaction between teacher and students and among students (Cheffers & Mancini, 1989). Calculations are made using column totals unless otherwise indicated.

Categories of behaviors are further itemize here with a description of calculations included.

- Total teacher contributions: This involves all teacher behaviors observed during the coding period, verbal and nonverbal, including praise,

acceptance, questions, lecturing, directions, criticism, and empathy.

$$\frac{2+12+3+13+4+14+5+15+6+16+7+17}{\text{total tallies}}$$

- Teacher use of questioning: All verbal and non-verbal questions of the teacher as compared to teacher verbal lecturing behavior.

$$\frac{4+14}{4+14+5+15}$$

- Teacher response to student behavior: The number of responses of the teacher reacting to student input or ideas indirectly and directly.

$$\text{Total response \%} = \frac{\text{rows 8+9 across 2-7}}{\text{total teacher behavior}}$$

indirect = rows 8+9 w/column 2-4

direct = rows 8+9 w/column 5-7

The indirect to direct teacher response to student behavior are compared to create the ratio of indirect to direct student teacher interactions.

- Teacher use of acceptance and praise: All verbal and nonverbal expressions of praise, encouragement, and acceptance by the teacher as compared to teacher verbal and nonverbal behavior of direction giving and criticism.

$$\frac{2+12+3+13}{2+12+3+13+6+16+7+17}$$

- Teacher time spent expanding student ideas: The extension and acceptance of student ideas highly relates to student achievement.

$$\frac{\text{cell blocks } 3+13}{\text{column totals } 3+13}$$

- Teacher constructive integration: Using students ideas, extending and amplifying, accepting and enlarging student feelings.

$$\frac{\text{cell blocks } 2\text{-}13}{\text{total teacher behavior}}$$

verbal: column 12-13
total teacher verbal behavior

nonverbal: column 2+3
total teacher verbal behavior

- Steady state cells: The amount of time the teacher spent in a constant behavior versus transitional behaviors. All other cells are transitions in that they represent a move from one category to another. A build up in any cell means extended behavior.

Diagonals mean the same behavior is being exhibited for prolonged periods of time. Heavy loading in diagonals 2-7 means the teacher is being deliberate in communication, and taking time to expand own or student,s ideas. Heavy loading in 8-9 means students are being allowed to expand their own ideas. Total of cell block calculated and divided by like columns.

2 12 / total in like (2, 12) columns
2
12

- Content emphasis teacher input: Amount of class time the teacher devotes to subject matter. All tallies in categories 4,14,5,15, rows and columns are added together with steady state cells counted one time only. Total is divided by the total matrix tally count.

- Content emphasis student input: All tallies in 8\ and 18\ columns are summed with steady state cells counted but once.

- Total student contribution: All verbal and nonverbal student behaviors observed during the coding period. Student verbal and nonverbal behaviors include predictable responses, evaluative responses, and pupil initiated, unpredictable behaviors.

8+18+8\+18\+9+19
total tallies

- Total student initiated behaviors: The unexpected or unpredictable self-initiated student verbal and nonverbal behaviors are compared to all student

verbal and nonverbal behaviors.

$$\frac{9+19}{8+18+8\backslash+18\backslash+9+19}$$

- Total student initiated teacher suggested response: All verbal and nonverbal predictable student responses and student initiated, unpredictable verbal and nonverbal behaviors as compared to all verbal and nonverbal student behavior.

$$\frac{8+18\backslash+9+19\backslash}{8+8\backslash+18+18\backslash+9+19}$$

- Total student dependent behavior: All student verbal and nonverbal rote, predictable responses and the interpretive or evaluative responses are compared to all student verbal and nonverbal behaviors.

$$\frac{8+18+8\backslash+18\backslash}{8+18+8\backslash+18\backslash+9+19}$$

- Total student narrow dependence: All student verbal and nonverbal rote predictable responses are compared to all student verbal and nonverbal behaviors.

$$\frac{8+18}{8+18+8\backslash+18\backslash+9+19}$$

- Total student interpretation: All student verbal and nonverbal interpretive responses are compared to all student behaviors.

$$\frac{8\backslash+18\backslash}{8+18+8\backslash+18\backslash+9+19}$$

(Cheffers & Mancini, 1989; Cashel, 1987)

Research Design

This study utilized the case study method, which is an intensive study of

one person or one situation. A case study typically seeks insights that will have a more generalized applicability beyond the single case under study, but the case study itself cannot assure this (Babbie, 1973). The case study method allows many variables to be examined at once which will provide several reference points to determine effective teaching behaviors. Each subject was videotaped as part of this case study. Three observers then carefully analyzed videotapes to identify recurring patterns of teacher and student behaviors. Participants identity was not be revealed. Participants were given the option to withdraw from the study at any time.

Five individuals were filmed and analyzed with the Cheffers Adaptation of the Flanders Interaction Analysis System (CAFIAS). The case study represents a comprehensive description of five challenge course instructors from a university in the South Central U.S. The subjects were videotaped during four teaching episodes. The total filmed time for each subject was twenty to thirty minutes dependent upon the time each individual used to complete the lesson. The videotape was then analyzed using the CAFIAS observation tool. Three observers were trained and two observers viewed and scored each instructor's teaching episodes. The length of video tape provided approximately 240-360 observations per instructor. The four lessons were: 1) Challenge Course introduction, here the instructor gave basic rules and instructions; 2) initiative debriefing, a discussion following each activity to explore and reinforce what was learned; 3) harness talk, instructions of how to safely wear the harness; 4) and transfer talk, instructions of how to transfer from one high Challenge Course element to another.

Interobserver reliability

Reliability in case studies is most often measured by the degree to which two persons using the same definitions and coding procedures and viewing the same activities agree on their coding. Observer reliability is established through sound training of the observers (van der Mars, 1989).

Three observers were trained in the CAFIAS method. The training took place in 5 phases as outlined by van der Mars (1989). This training consisted of: 1) orienting the observers to the system by introducing the basic purpose of the system; 2) observers learning the categories of CAFIAS. Once the codes were learned, the observers viewed a video tape similar to the data tapes and coded behaviors over three minutes on the coding form; 3) interval recording was introduced into the system. This was a prerecorded audio cassette cued at 5 second intervals signaling the end of intervals to alert the observer of the need to record a code on the form; 4) observers practiced on video tapes similar to those they would be coding; and 5) observers practiced until they had an interobserver reliability of 80% or better. Once the interobserver reliability was established the observer moved onto the videotaped data for analysis.

Statistical Analysis Applied

In using Cheffers Adaptation of the Flanders Interaction System (CAFIAS), cell frequencies were calculated. The density of the tallies in cells determined not only the predominant teacher student behaviors but also the sequences of those behaviors. The use of the matrix permitted the determination of patterns of interaction which in turn permit succinct and objective descriptions of the interactions (Cheffers & Mancini, 1989).

Descriptive statistics were applied to give a general description of each challenge course instructor. Percentages were calculated in a variety of behavioral categories to classroom and physical education teachers. These categories were compared to the percentages of CAFIAS from the research found on classroom teachers and physical education teachers. Tally counts were also compared to that of expert outdoor instructors.

CHAPTER FOUR

RESULTS AND DISCUSSION

Results

The purpose of this study was to: 1) examine teaching behaviors of selected challenge course instructors using the Cheffers Adaptation of the Flanders Interaction Analysis System (CAFIAS); 2) compare behaviors of the challenge course instructors to those of physical education and classroom teachers as measured with CAFIAS in previous studies (Harris, 198); 3) compare the teaching behaviors of the challenge course instructors to those of expert outdoor instructors (Cashel and Gangstead, 1987) and physical education teacher norms (Cheffers, personal communication, February 7, 2000) . Classroom teachers/physical education teachers analyzed with CAFIAS were: total teacher-student contribution, teacher use of questioning, teacher use of acceptance and praise and total student initiated/teacher suggested response. Expert outdoor instructor categories analyzed with CAFIAS were: total teacher-student interaction, total teacher contributions, total student contributions, amount of confusion or silence, teacher time spent expanding student ideas, amount of time spent in a constant behavior verses transitional behaviors, and student responses to teacher.

Five instructors were selected and videotaped during four segments of a one day challenge course experience. These episodes were as follows: 1) challenge course introduction; basic rules and instructions for the course were provided; 2) initiative debriefing; a discussion following each activity to explore and reinforce what was learned during the activity; 3) harness talk; instructions of how to safely wear the harness; and 4) transfer talk; instructions of how to transfer from one high challenge course element to another. The total film time for each instructor approximated thirty minutes. A panel consisting of trained observers analyzed the videotapes. The panel had an interobserver reliability of 80% or better. Behaviors were tallied, compiled and transferred to a matrix.

Statistics were generated from the matrices. These calculations were expressed in percentages and the subjects were compared to the classroom teachers, physical education teachers and general physical education norms. Tally counts were also compiled and the subjects percentages were compared to that of expert outdoor instructors.

The remainder of the chapter includes the results of the video taped observations of the five individual instructors and their comparisons to the classroom teachers, physical education teachers and the expert outdoor instructors. Each instructor will be discussed independently. Pseudonyms will be utilized to provide subject anonymity. The data are compared to a study of classroom and physical education teachers by Harris (1985) and general physical education norms provided by J. T. Cheffers (personal communication, February 7, 2000) Data were also compared to a study of expert outdoor instructors by Cashel and Gangstead (1987).

Instructor A

Instructor A became a challenge course instructor after attending the challenge course training two years prior to this study and had worked steadily at the OSU challenge course. Instructor A had instructed more than fifty challenge courses during this time with twenty five courses in the past year. Instructor A had also worked for other challenge courses in the area. A review of Instructor A's results follow.

Comparisons to Classroom and Physical Education Teachers

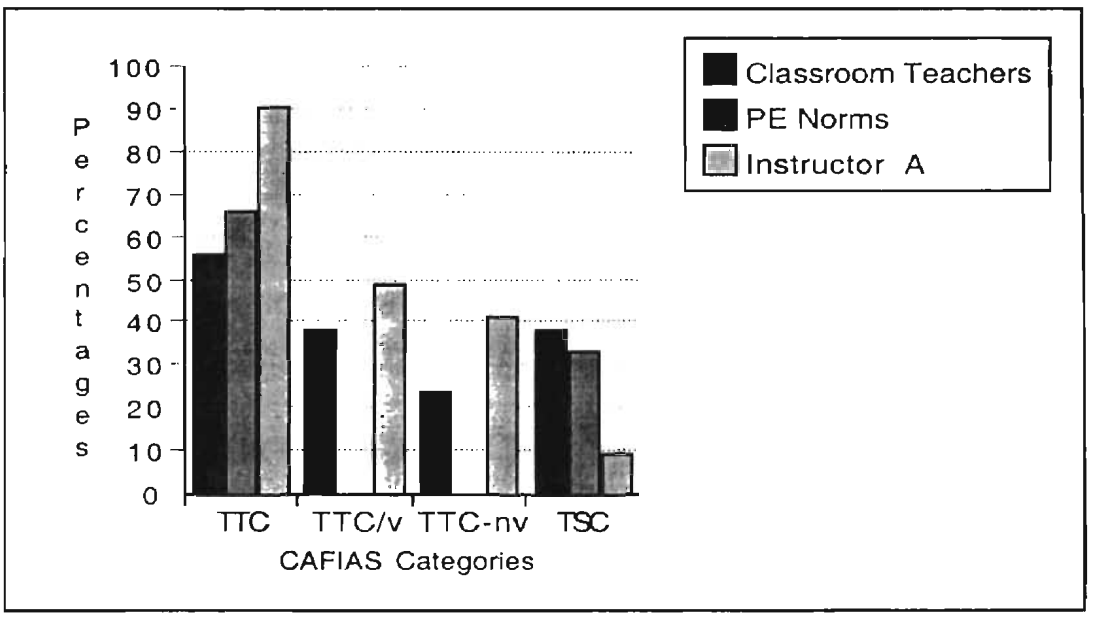

Figure A. Total Teacher Contributions (TTC), verbal, nonverbal, Total Student Contributions (TSC)

Total teacher contribution (TTC) signifies the amount of the time the teacher is giving information or direction to the class. Instructor A scored 91% in TTC with 47% verbal and 41% nonverbal. The classroom teachers TTC scores were 56% with 38% verbal and 24% nonverbal. The study did not report values

for Physical Education (PE) teachers in this category. General Physical Education norms were found to be 66% with no report of verbal and nonverbal behaviors (Figure A).

Total student contributions (TSC) signifies the amount of time the student is contributing to the classroom in any manner. Behaviors can include rote predictable responses to unpredictable behaviors. Instructor A's student TSC score was a 9%, classroom teachers' student scores were 38% and PE teachers students scored a 36%. General PE norms were found to be 33% (Figure A).

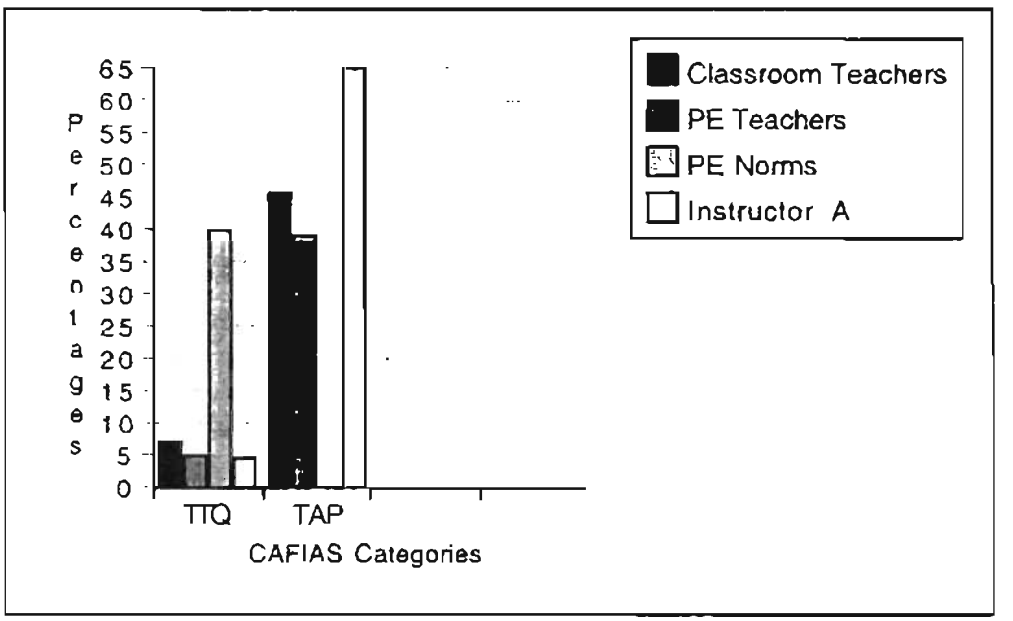

Figure B. Teacher Questions (TTQ), Teacher Acceptance & Praise (TAP)

Teacher use of questioning (TTQ) is the verbal and nonverbal questions of the teacher compared to verbal and nonverbal lecturing behaviors. In TTQ, Instructor A scored a 5% as compared to classroom teachers at 7% and PE teachers at 5%. General PE norms were 40% (Figure B).

Teacher use of acceptance and praise (TAP) are the teacher behaviors related to praise and acceptance as compared to the use of criticism. In TAP,

Instructor A scored 60% as compared to classroom teachers at 46% and PE teachers at 39%. General PE norms were found to be consistently low (Figure B).

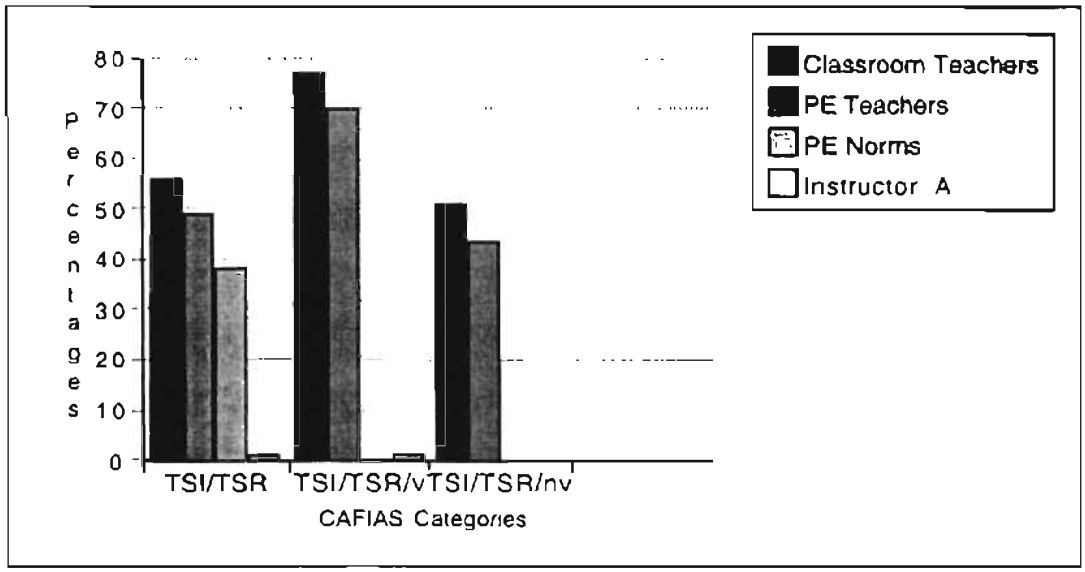

Figure C. Total Student Initiated/Teacher Suggested (TSI/TSR), verbal, nonverbal

Total student initiated/teacher suggested response (TSI/TSR) is the unexpected and unpredictable self-initiated student verbal behaviors as compared to all student verbal behaviors. Instructor A scored a 1% total, a 1% verbal, and a 0% nonverbal as compared to the classroom teachers with a 56% total and a 77% verbal, and a 51% nonverbal. The PE teachers scored a 49% total with a 70% verbal and a 44% nonverbal. General PE norms were on the average 38% no verbal and nonverbal behaviors are recorded for this category (Figure C).

Comparisons to Expert Outdoor Instructors

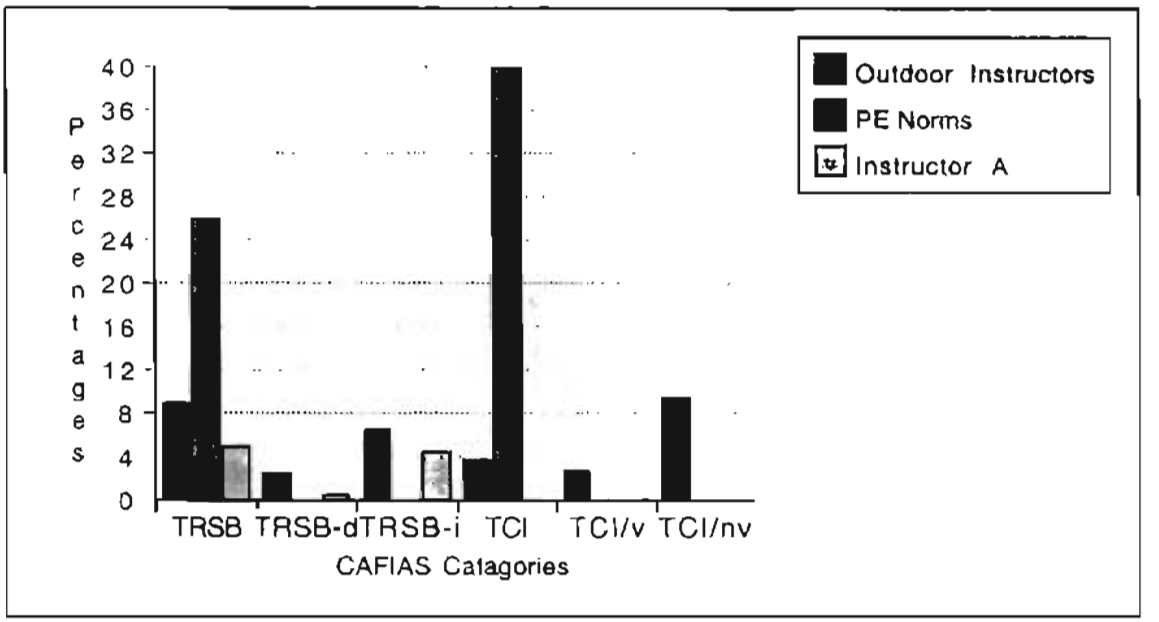

Figure D. Teacher Response to Student Behavior (TRSB), direct and indirect, Teacher Constructive Integration (TCI), verbal and nonverbal

Teacher response to student behavior (TRSB) is the number of responses of the teacher in reaction to student input or ideas. In TRSB, Instructor A scored a 5% with direct interactions at 0.6% and indirect interactions at 4.4%. The expert outdoor instructors TRSB scores were 9.1% with direct interactions at 2.6% and indirect interactions recorded as 6.5%. General PE norms were 26% (Figure D).

Teacher constructive integration (TCI) is when the teacher integrates the students response into lecture or discussion. Instructor A received a TCI total score of .0% with an .0% verbal and a .0% nonverbal. Expert outdoor instructors TCI scores were 3.8% with a 2.8% in verbal and a 9.4% in nonverbal. General PE norms were 40% with no verbal and nonverbal data recorded (Figure D).

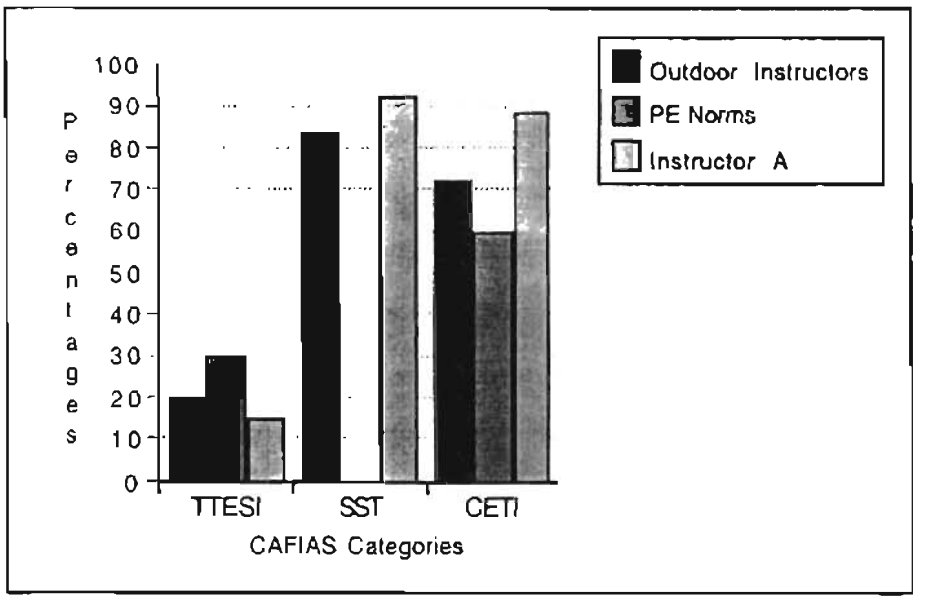

Figure E. Teacher Time Expanding Student Ideas (TTESI), Steady States (SST), Content Emphasis Teacher Input (CETI)

Teacher time expanding student ideas (TTESI) is an extension and acceptance of student ideas. Instructor A scored a 15% in TTESI, while the expert outdoor instructors scores were 19.7%. General PE norms were 30% (Figure E).

Steady states (SST) of communication indicates the time spent in one specific kind of communication behavior that is extended. In SST, Instructor A received a 92.6% and expert outdoor instructors received an 83.8%. No data was recorded for this category for General PE norms (Figure E).

Content emphasis teacher input (CETI) is the amount of time the teacher devotes to the subject matter. Instructor A scored an 88% in this category and the expert outdoor instructors scored a 71.9%. General PE norms were found to be 60% in this category (Figure E).

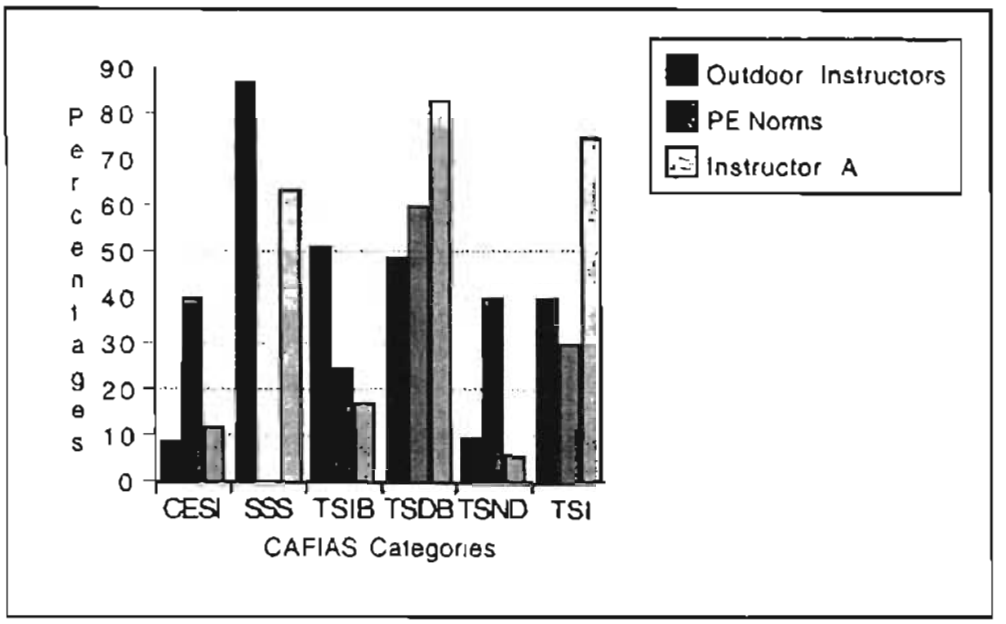

Figure F. Content Emphasis Student Input (CESI), Steady States Students (SSS), Total Student Initiated Behaviors (TSIB), Total Student Dependent Behavior (TSDB), Total student narrow dependence (TSND), Total Student Interpretation (TSI).

Content emphasis student input (CESI) is the measure of unpredictable student behaviors that are on task in their behaviors and statements. In CESI, Instructor A's students scored an 12%, while the expert outdoor instructors students scored an 8.6%. General PE norms were 40% (Figure F).

Steady states (SSS) of communication indicates the time spent in one specific kind of communication behavior that is extended. Instructor A's students received a SSS score of 63.6%. Expert outdoor instructors students received an 86.9%. No data was recorded for this category for General PE norms (Figure F).

Total student initiated behaviors (TSIB) indicates student initiated talk or behavior that is unpredictable. In TSIB, Instructor A scored a 17% and, expert outdoor instructors scored a 51%. General PE norms were 25% (Figure F).

Total student dependent behaviors (TSDB) are the student behaviors that are dependent upon student response to teacher questioning or demonstration.

In TSDB, Instructor A received an 83% and the outdoor instructors received a 49%. General PE norms were 60% (Figure F).

Total student narrow dependence (TSND) represents all student verbal and nonverbal rote, predictable responses as they are compared to all student verbal and nonverbal behaviors. Instructor A received a TSND of 6% and expert outdoor instructors received a 9.2%. General PE norms were 40% (Figure F).

Total student interpretation (TSI) is the interpretation or evaluative verbal response compared to all student verbal behaviors, indicating student synthesis prior to response to the teacher. In TSI, Instructor A received a 75% and expert outdoor instructors received a 39.8%. General PE norms were found to range between 20% and 40% (Figure F).

Instructor A Summary

When reviewing instructor A's scores it was found that instructor A is very much on task in teaching behaviors and instructor A's primary mode of communication is lecture. Instructor A shows an extended time in one type of teaching behavior. Instructor A shows low teacher student interaction and we find instructor A does not integrate, expand, react or respond to student responses often but does use acceptance and praise often. Instructor A's scores do show response to student ideas but students scored low in input either on or off task. When instructor A's students did respond they scored high in interpretation and synthesis of instructor A's input. Instructor A's students were thoughtful and on task at these times.

Instructor B

Instructor B worked as an instructor for eight months prior to this study. Instructor B has worked on the challenge course steadily since becoming a full challenge course instructor. Instructor B had instructed between ten and twenty courses during this time. A review of Instructor B's results follow.

Comparisons to Classroom Teachers and Physical Education Teachers

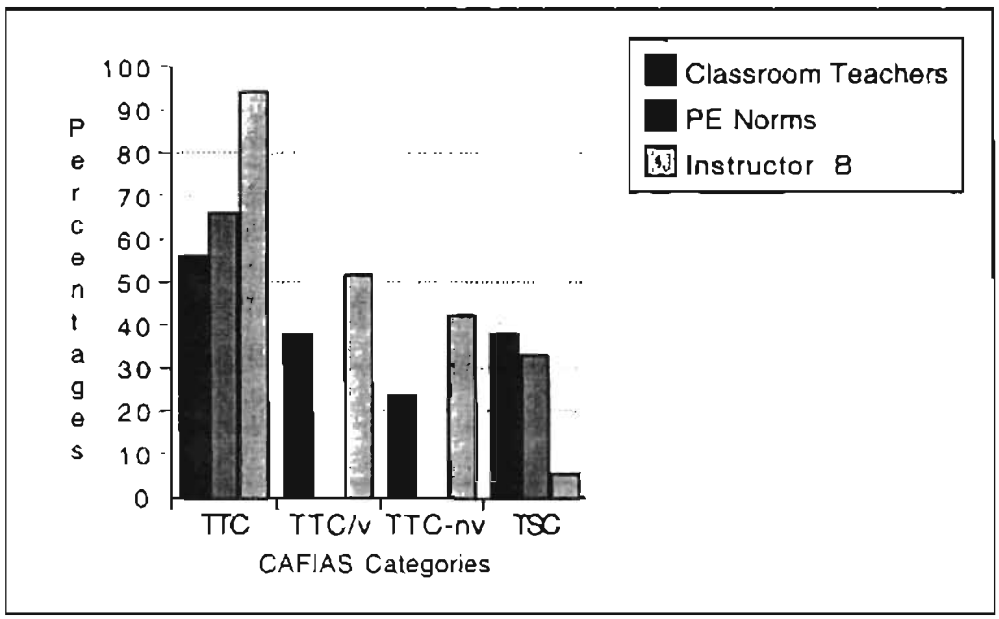

Figure G. Total Teacher Contributions (TTC), verbal and nonverbal, Total Student Contributions (TSC)

Total teacher contribution (TTC) signifies the amount of the time the teacher is giving information or direction to the class. Instructor B's TTC score was 95% with a 52% verbal and an 45% nonverbal. The classroom teachers TTC scores were 56% with a 38% verbal and a 24% nonverbal. Values were not reported for Physical Education instructors in this category. General PE norms

were 66% with no values recorded for verbal and nonverbal behaviors (Figure G).

Total student contributions (TSC) signifies the amount of time the student is contributing to the classroom in any manner. Behaviors can include rote predictable responses to unpredictable behaviors. In TSC, Instructor B scored an 5% with classroom teachers scoring a 38% and PE teachers students scored a 36%. General PE norms were found to be 33% (Figure G).

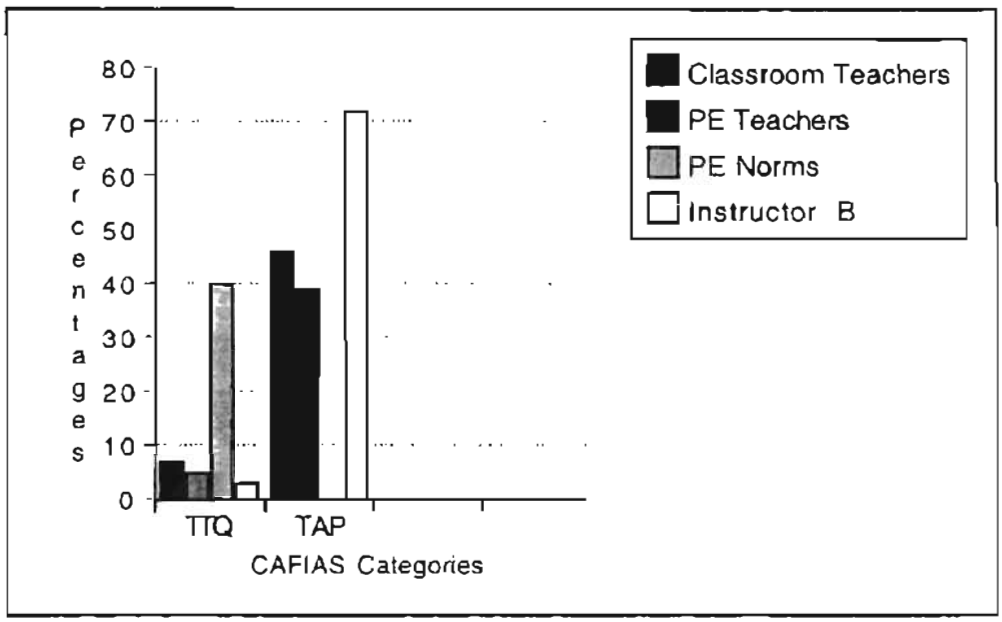

Figure H. Teacher Questioning (TTQ), Teacher Acceptance and Praise (TAP)

Teacher use of questioning (TTQ) is the verbal and nonverbal questions of the teacher compared to verbal and nonverbal lecturing behaviors. In TTQ, Instructor B scored a 3%, the classroom teachers scores were 7%, and the PE teachers were 5%. General PE norms were 40% (Figure H).

Teacher use of acceptance and praise (TAP) are the teacher behaviors related to praise and acceptance as compared to the use of criticism. Instructor B's TAP score was 72%, the classroom teachers were 46% and the PE teachers scores were 39%. General PE scores were found to be low (Figure H).

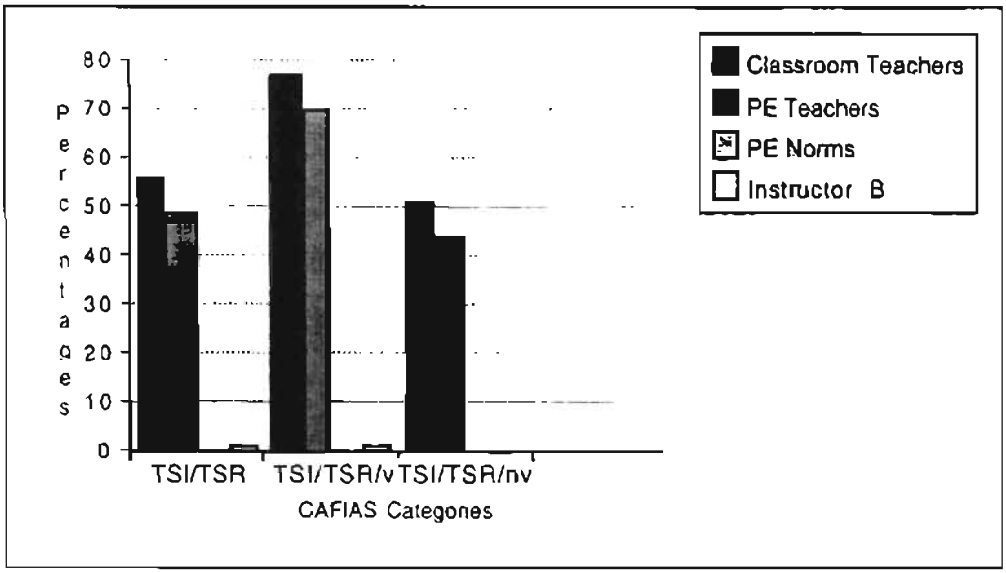

Figure I. Total Student Initiated/Teacher Suggested Response, verbal and nonverbal

Total student initiated/teacher suggested response (TSI/TSR) is the unexpected and unpredictable self-initiated student verbal behaviors as compared to all student verbal behaviors. Instructor B's TSI/TSR score was a 1% total, a 1% in verbal and a 0% in nonverbal. TSI/TSR scores for classroom teachers were 56% total and a 77% verbal and a 51% nonverbal and the PE teachers scored a 49% with a 70% verbal and a 44% nonverbal. General PE norms are 26% for students and 50% for teachers (Figure I).

Comparisons to Expert Outdoor Instructors

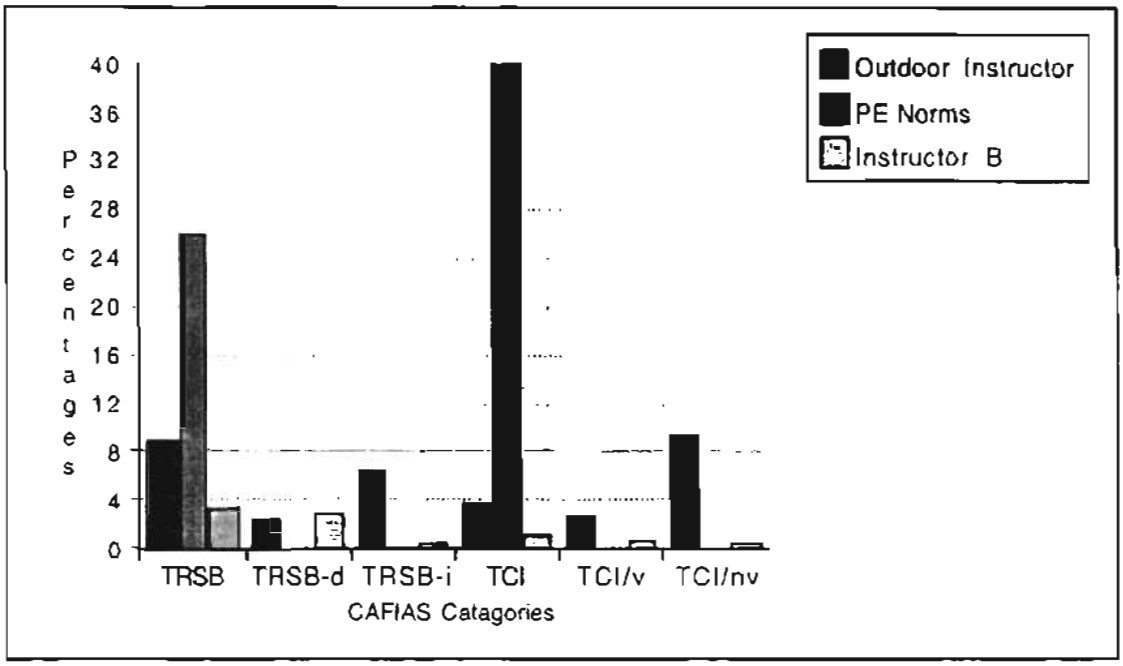

Figure J. Teacher Response to Student Behavior (TRSB), direct and indirect, Teacher Constructive Integration (TCI), verbal and nonverbal.

Teacher response to student behavior (TRSB) is the number of responses of the teacher in reaction to student input or ideas. Instructor B's TRSB score was 3.5% with direct interactions at 3% and indirect interactions at .5%. Expert outdoor instructors scored a 9.1% with direct interactions at 2.6% and indirect interactions at 6.5%. General PE norms are 26% (Figure J).

Teacher constructive integration (TCI) is when the teacher integrates the students response into lecture or discussion. Instructor B received a TCI total score of 1.38% with a .85% verbal and a .2% nonverbal. Expert outdoor instructors scores were 3.8% with a 2.8% in verbal and a 9.4% in nonverbal. General PE norms are 40% with no data for verbal and non verbal behaviors (Figure J).

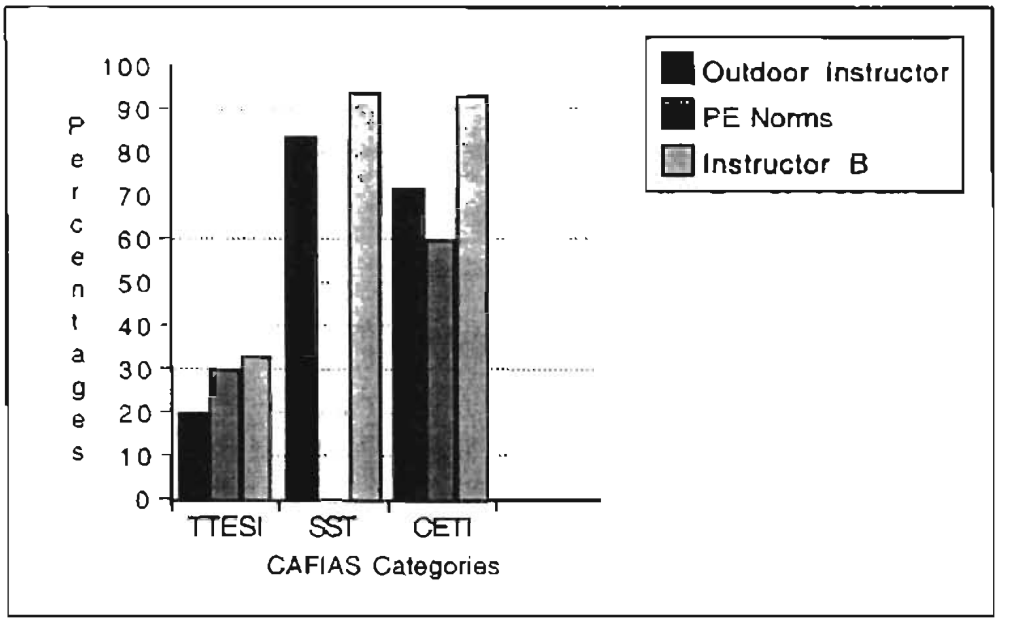

Figure K. Teacher Time Expanding Student Ideas (TTESI), Steady States Teacher (SST), Content Emphasis Teacher Input (CETI).

Teacher time expanding student ideas (TTESI) is an extension and acceptance of student ideas. Instructor B scored 33% in TTESI while expert outdoor instructors scores were 19.7%. General PE norms are 30% (Figure K).

Steady states (SST) of communication indicates the time spent in one specific kind of communication behavior that is extended. Instructor B received a SST of 94% and expert outdoor instructors received an 83.8%. No data was recorded for general PE norms (Figure K).

Content emphasis teacher input (CETI) is the amount of time the teacher devotes to the subject matter. Instructor B scored a 93% in CETI and the expert outdoor instructors scored a 71.9%. General PE norms are 60% (Figure K).

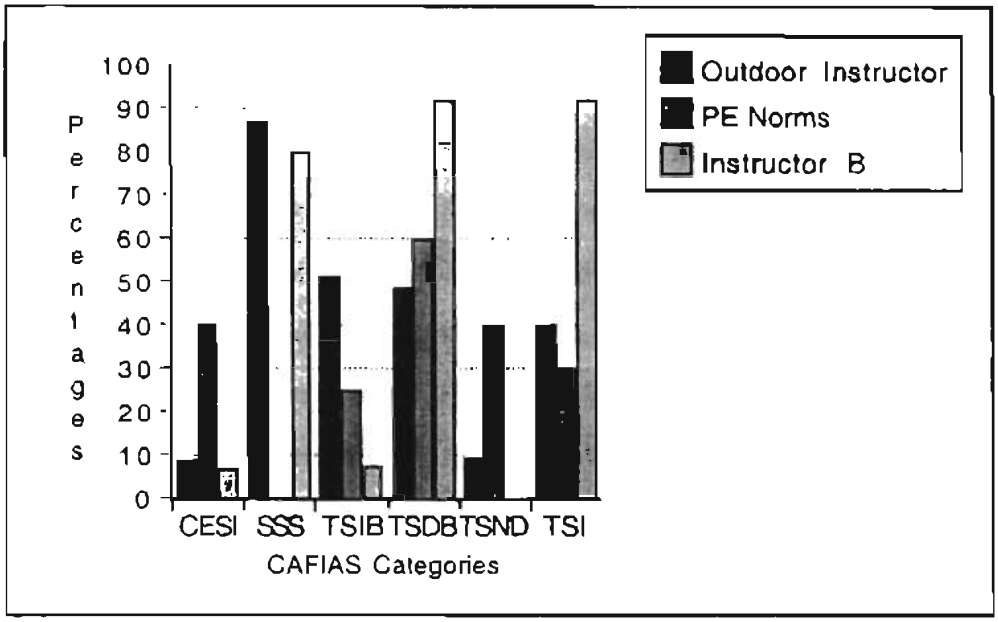

Figure L. Content Emphasis Student Input (CESI), Steady States Students (SSS), Total Student Initiated Behaviors (TSIB), Total Student Dependent Behavior (TSDB), Total student narrow dependence (TSND), Total Student Interpretation (TSI).

Content emphasis student input (CESI) is the measure of unpredictable student behaviors that are on task in their behaviors and statements. Instructor B's students score in CESI was an 7%, while outdoor instructor's students scored an 8.6%. General PE norms are 40% (Figure L).

Steady states (SSS) of communication indicates the time spent in one specific kind of communication behavior that is extended. In SSS, Instructor B's students received an 80%, expert outdoor instructors students received an 86.9%. No data was recorded for general PE norms in this category (Figure L).

Total student initiated behaviors (TSIB) indicates student initiated talk or behavior that is unpredictable. Instructor B's students scored a 7.6% in TSIB with outdoor instructors' students scores at 51%. General PE norms are 25% (Figure L).

Total student dependent behavior (TSDB) is when student behavior is dependent upon teacher, or response to teacher questioning or demonstration. In TSDB, Instructor B's students received an 92% and expert outdoor instructors'

students received a 49%. General PE norms are 60% (Figure L).

Total student narrow dependence (TSND) represents all student verbal and nonverbal rote, predictable responses as they are compared to all student verbal and nonverbal behaviors. Instructor B's students received a 0% in TSND, expert outdoor instructors' students received a 9.2%. General PE norms are 40% (Figure L).

Total student interpretation (TSI) is the interpretation or evaluative verbal response compared to all student verbal behaviors, indicating student synthesis prior to response to the teacher. In TSI, Instructor B's students received a 92%, while expert outdoor instructors' students received a 39.8%. General PE norms are between 20% and 40% (Figure L).

Instructor B Summary

Instructor B's primary mode of communication seems to be lecturing and demonstration. Instructor B remains on task in content but did not respond often to students. Instructor B spent time integrating, expanding or reacting to student behaviors and recieved a high score in acceptance and praise. Students showed no rote predictable responses but did show a high score in interpretation and synthesis of teacher input.

Instructor C

Instructor C had worked as a challenge course instructor for one year at the time of this study. Instructor C was a student at OSU and has had experience facilitating challenge courses in several settings. Instructor C had instructed

between ten and twenty courses at the time of the study. A review of instructor Instructor C's results follow.

Comparisons to Classroom Teachers and Physical Education Teachers

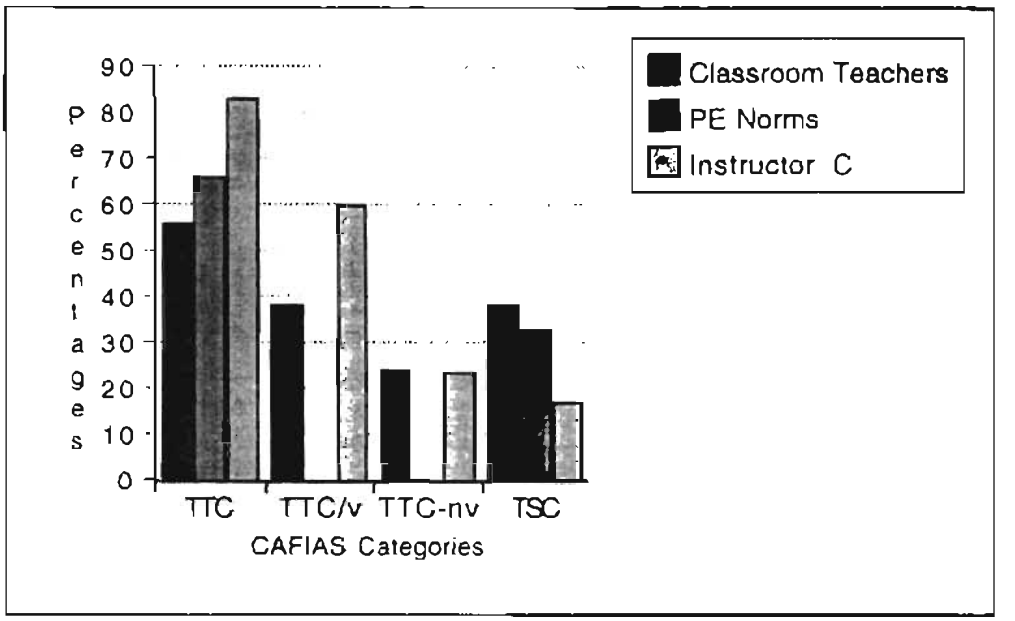

Figure M. Total Teacher Contribution (TTC), Total Student Contributions (TSC).

Total teacher contribution (TTC) signifies the amount of the time the teacher is giving information or direction to the class. In TTC, Instructor C scored a 83% with a 60% verbal and an 23% nonverbal. Classroom teachers scored a 56% with a 38% verbal and a 24% nonverbal. No values were reported for Physical Education instructors in this category. General PE norms were 66% with no values for verbal and nonverbal responses recorded (Figure M).

Total student contribution (TSC) signifies the amount of time the student is contributing to the classroom in any manner. Behaviors can include rote predictable responses to unpredictable behaviors. In TSC, Instructor C's students scored an 17%, classroom teachers scored a 38%. The study did not

report values for Physical Education teachers in this category. General PE norms were 33% (Figure M).

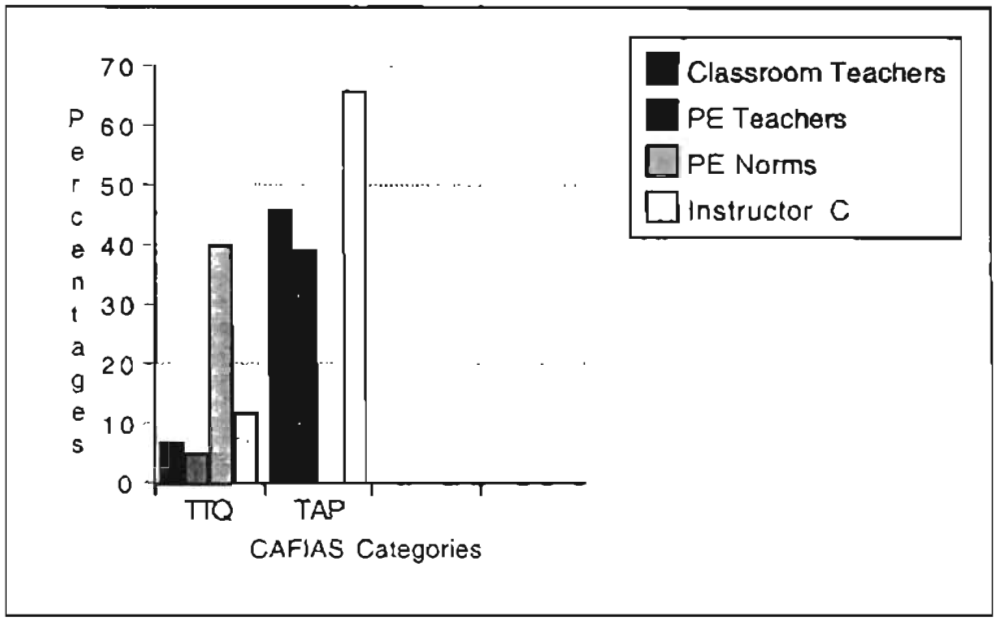

Figure N. Teacher Questioning (TTQ), Teacher Acceptance and Praise (TAP)

Teacher use of questioning (TTQ) is the verbal and nonverbal questions of the teacher compared to verbal and nonverbal lecturing behaviors. In TTQ, Instructor C scored a 12%, classroom teachers score was a 7% and PE teachers a 5%. General PE norms were 40% (Figure N).

Teacher use of acceptance and praise (TAP) are the teacher behaviors related to praise and acceptance as compared to the use of criticism. In TAP, Instructor C scored a 66%, classroom teachers a 46% and PE teachers a 39%. General PE norms were found to be consistently low (Figure N).

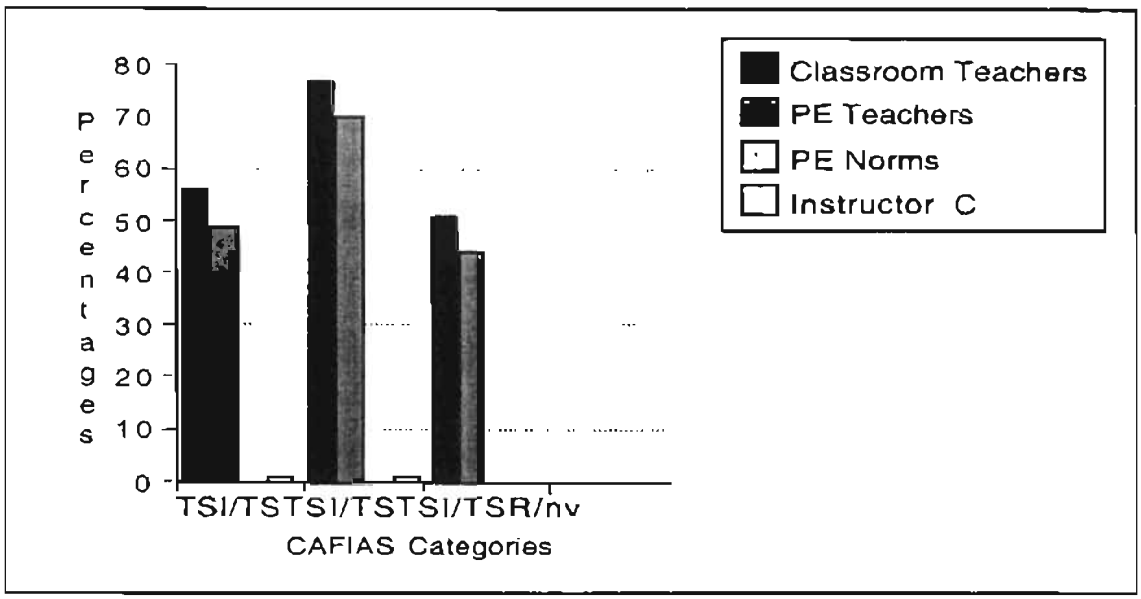

Figure O. Total Student Initiated/Teacher Suggested Response (TSI/TSR), verbal and nonverbal.

Total student initiated/teacher suggested response (TSI/TSR) are the unexpected and unpredictable self-initiated student verbal behaviors as compared to all student verbal behaviors. In TSI/TSR Instructor C scored a 1% total, a 1% in verbal and a 0% in nonverbal. Classroom teachers TSI/TSR scores were a 56% total and a 77% verbal and a 51% nonverbal. The PE teachers scored a 49% with a 70% verbal and a 44% nonverbal. General PE norms were 26% for students and 50% for teachers (Figure O).

Comparisons to Expert Outdoor Instructors

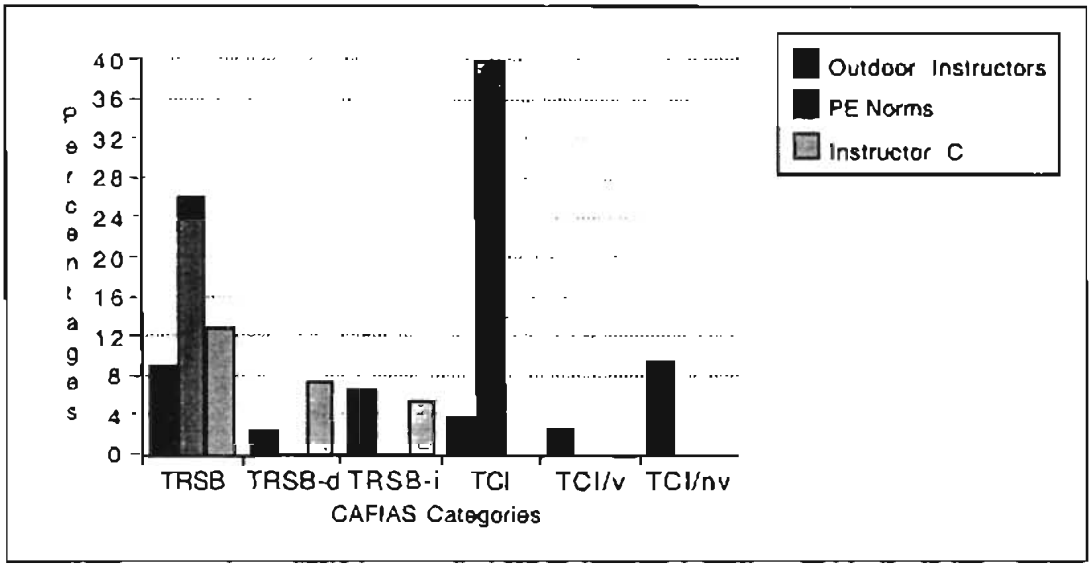

Figure P. Teacher Response to Student Behavior (TRSB), direct and indirect, Teacher Constructive Integration (TCI), verbal and nonverbal

Teacher response to student behavior (TRSB) is the number of responses of the teacher in reaction to student input or ideas. Instructor C's TRSB score was 13% with direct interactions at 7% and indirect interactions at 6%. Expert outdoor instructors scored a 9.1% with direct interactions at 2.6% and indirect interactions at 6.5%. General PE teacher norms were 26% (Figure P).

Teacher constructive integration (TCI) is when the teacher integrates the students response into lecture or discussion. In TCI, Instructor C received a total score of 0% with a 0% verbal and a % nonverbal. Expert outdoor instructor scores were 3.8% with a 2.8% in verbal and a 9.4% in nonverbal. General PE teacher norms were 40% (Figure P).

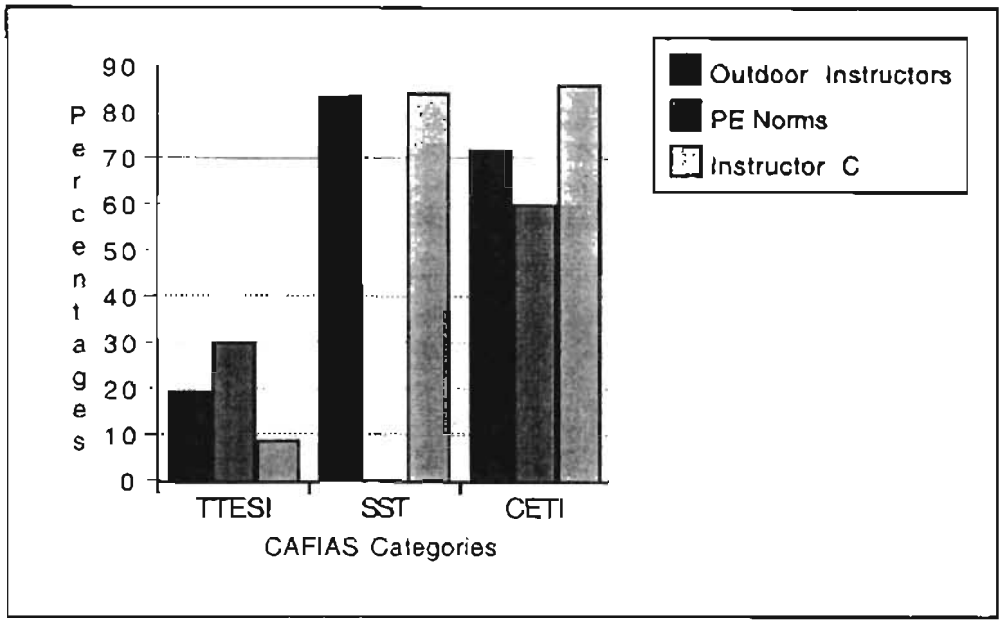

Figure Q. Teacher Time Expanding Student Ideas (TTESI), Steady States (SST), Content Emphasis Teacher Input (CETI)

Teacher time expanding student ideas (TTESI) is an extension and acceptance of student ideas. In TTESI, Instructor C scored a 9% while expert outdoor instructors scores were 19.7%. General PE teacher norms were 30% (Figure Q).

Steady states (SST) of communication indicates the time spent in one specific kind of communication behavior that is extended. In SST, Instructor C received an 84%, expert outdoor instructors received an 83.8%. General PE teacher norms were not recorded (Figure Q).

Content emphasis teacher input (CETI) is the amount of time the teacher devotes to the subject matter. Instructor C scored an 86% in CETI, and the expert outdoor instructors scored a 71.9%. General PE norms were 60% (Figure Q).

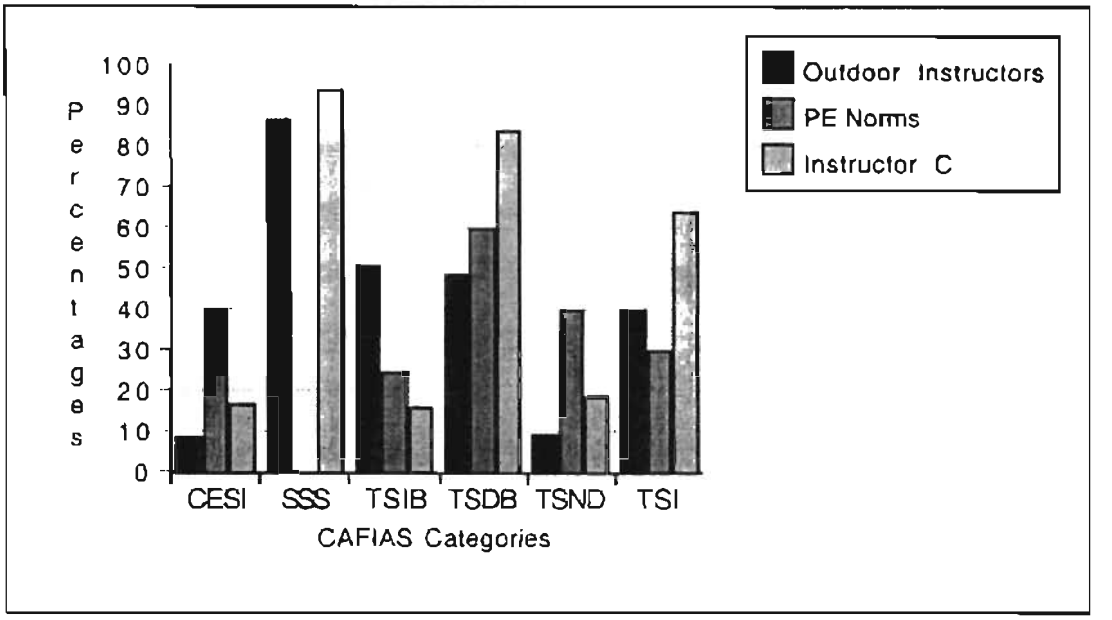

Figure R. Content emphasis student input (CESI), Steady states (SSS), Total student initiated behaviors (TSIB), Total student dependent behavior (TSDB), Total student narrow dependence (TSND), Total student interpretation (TSI)

Content emphasis student input (CESI) is the measure of unpredictable student behaviors that are on task in their behaviors and statements. In CESI, Instructor C's students scored a 17%, expert outdoor instructor's students scored an 8.6%. General PE teacher norms were 40% (Figure R).

Steady states (SSS) of communication indicates the time spent in one specific kind of communication behavior that is extended. In SSS, Instructor C's students received a 94%, expert outdoor instructors' students received an 86.9%. No data recorded for general PE norms (Figure R).

Total student initiated behaviors (TSIB) indicates student initiated talk or behavior that is unpredictable. In TSIB, Instructor C's students scored a 16% with expert outdoor instructors' student scores at 51%. General PE norms were 25% (Figure R).

Total student dependent behavior (TSDB) is when student behavior is dependent upon teacher, or response to teacher questioning or demonstration.

In TSDB, Instructor C's students received an 84% and expert outdoor instructors' students received a 49%. General PE norms were 60% (Figure R).

Total student narrow dependence (TSND) represents all student verbal and nonverbal rote, predictable responses as they are compared to all student verbal and non verbal behaviors. In TSND, Instructor C's students received a 19%, expert outdoor instructors' students received a 9.2%. General PE teacher norms were 40% (Figure R).

Total student interpretation (TSI) is the interpretation or evaluative verbal response compared to all student verbal behaviors. Instructor C's student TSI score was 64%, expert outdoor instructors' students received a 39.8%. General PE teacher norms were between 20% and 40% (Figure R).

Instructor C Summary

When reviewing instructors C's scores it was found that instructor C is very much on task and the primary mode of communication is lecturing with some use of questioning. Instructor C shows some teacher interaction, reacting and accepting student ideas but did not integrate these ideas into the lecture. Students responses and behaviors were somewhat on task and they remained on task. Instructor C recieved a high score in the use of acceptance and praise. Students respond well to demonstration and gave thoughtful interpretive responses to instructor C's lecture.

Instructor D

Instructor D worked as a challenge course instructor for seven months prior to this study. Instructor D had worked between twenty and thirty courses during that time. A review of Instructor D's results follow.

Comparisons to Classroom Teachers and Physical Education Teachers

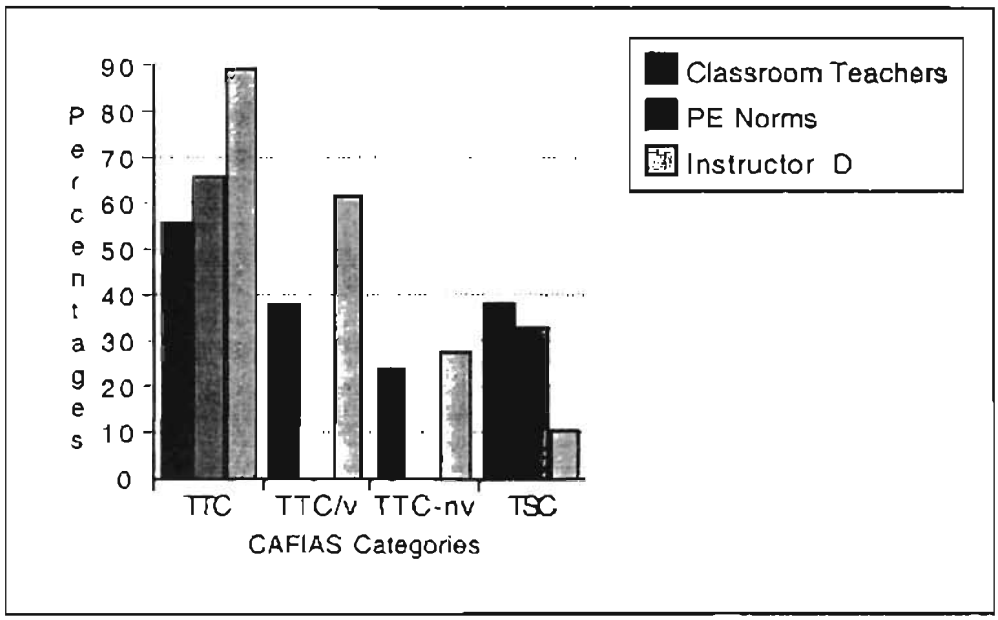

Figure S. Total Teacher Contribution (TTC), Total Student Contributions (TSC)

Total teacher contribution (TTC) signifies the amount of the time the teacher is giving information or direction to the class. In TTC, Instructor D scored a 89% with a 62% verbal and a 28% nonverbal. Classroom teachers scored a 56% with a 38% verbal and a 24% nonverbal. Values were not recorded for PE teachers in TTC. General PE norms were 66% with no data recorded for verbal and nonverbal behaviors(Figure S).

Total student contributions (TSC) signifies the amount of time the student is contributing to the classroom in any manner. Behaviors can include rote predictable responses to unpredictable behaviors. In TSC, Instructor D scored a 11% and classroom teachers scored a 38% and PE teachers students scored a 36%. General PE norms were 33% (Figure S).

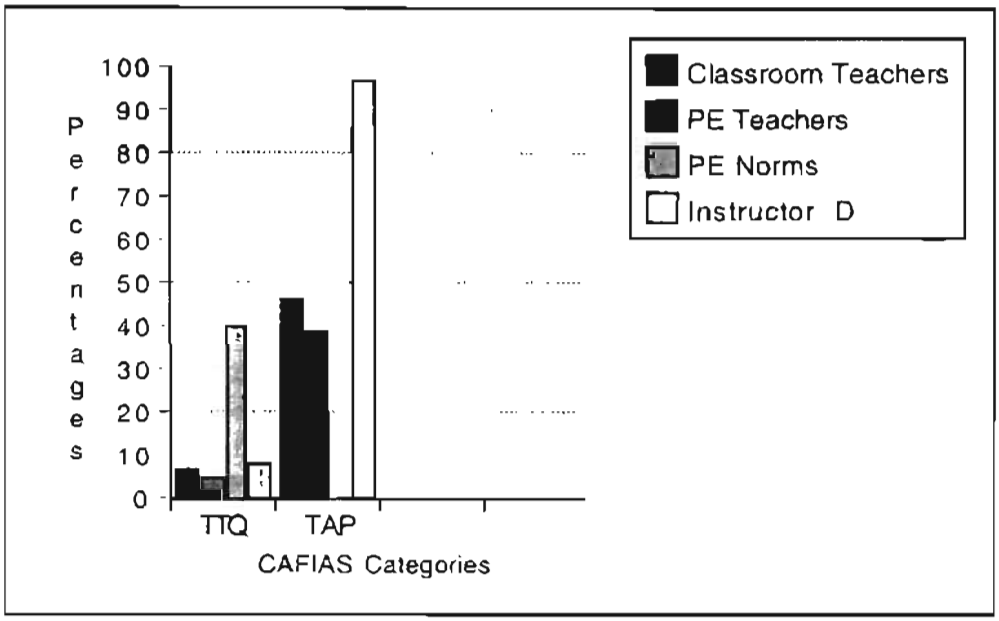

Figure T. Teacher Questioning (TTQ), Teacher Acceptance and Praise (TAP)

Teacher use of questioning (TTQ) is the verbal and nonverbal questions of the teacher compared to verbal and nonverbal lecturing behaviors. In TTQ, Instructor D scored a 8%, classroom teachers received a 7% and PE teachers a 5%. General PE norms were 40% (Figure T).

Teacher use of acceptance and praise (TAP) are the teacher behaviors related to praise and acceptance as compared to the use of criticism. In TAP, Instructor D scored a 97%, and classroom teachers scored a 46%, the PE teachers scored a 39%. General PE teacher norms were low (Figure T).

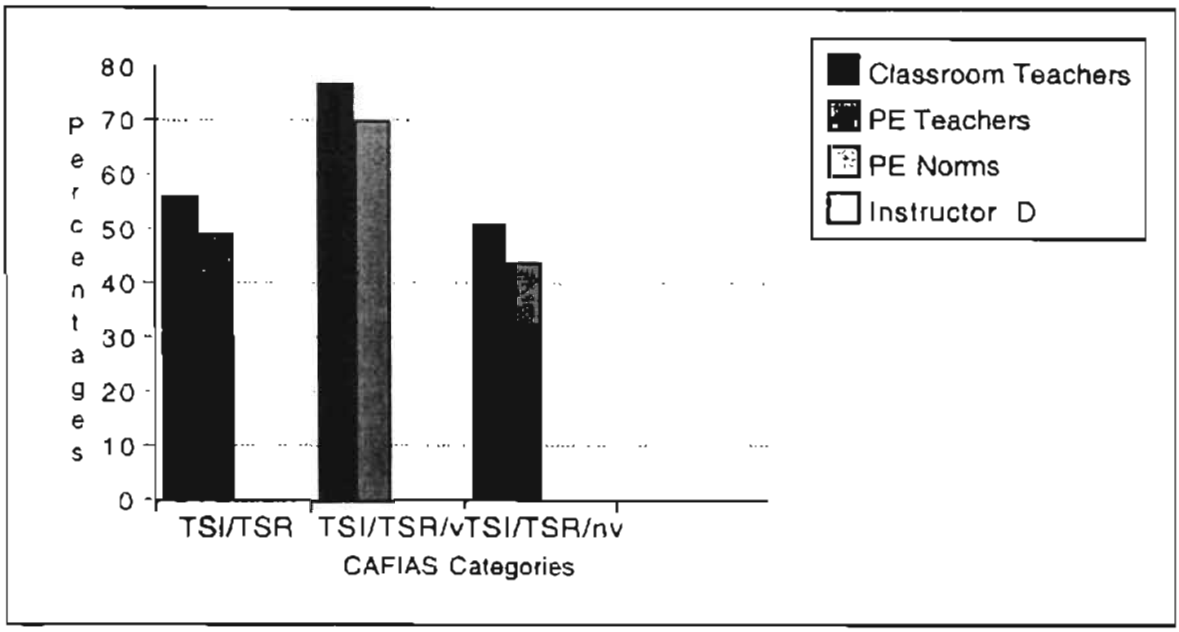

Figure U. Total Student Initiated/Teacher Suggested Response (TSI/TSR), verbal and nonverbal

Total student initiated/teacher suggested response (TSI/TSR) are the unexpected and unpredictable self-initiated student verbal behaviors as compared to all student verbal behaviors. In TSI/TSR, Instructor D scored a 0% total with a 0% in verbal and a 0% in nonverbal. Classroom teachers scored a 56% total with a 77% verbal and a 51% nonverbal. PE teachers TSI/TSR scores were 49% with a 70% verbal and a 44% nonverbal. General PE teacher norms were 26 for students and 59% for teachers with no data recorded for verbal and nonverbal communication (Figure U).

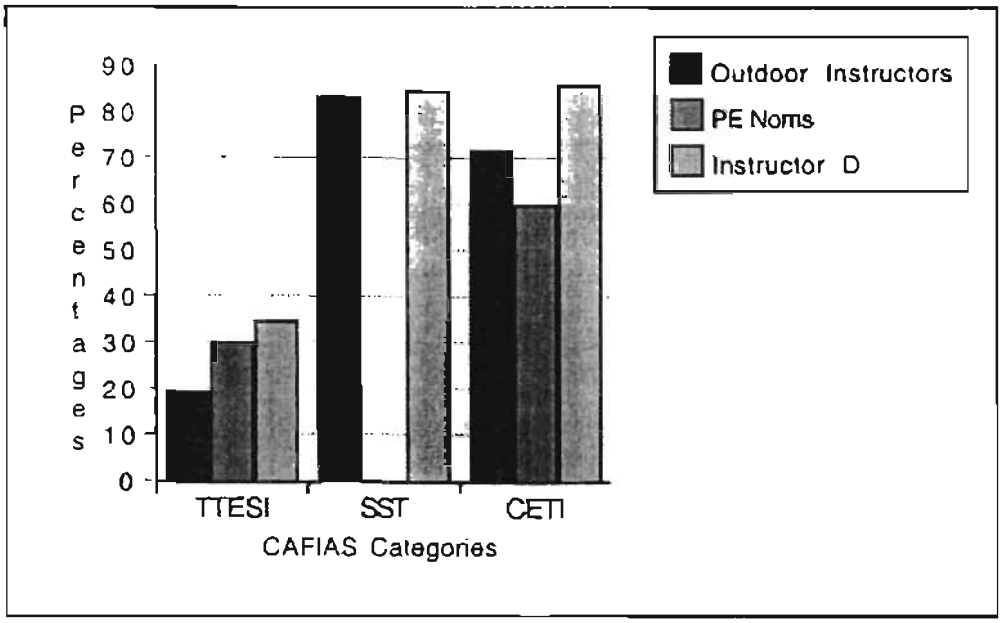

Figure W. Teacher Time Expanding Student Ideas (TTESI), Steady States (SST), Content Emphasis Teacher Input (CETI)

Teacher time expanding student ideas (TTESI) is an extension and acceptance of student ideas. In TTESI, Instructor D scored a 36%, expert outdoor instructors scores were 19.7%. General PE teacher norms were 30% (Figure W).

Steady states (SST) of communication indicates the time spent in one specific kind of communication behavior that is extended. In SST, Instructor D received a 84.5%, expert outdoor instructors received an 83.8%. No data was recorded for general PE norms (Figure W).

Content emphasis teacher input (CETI) is the amount of time the teacher devotes to the subject matter. In CETI, Instructor D scored an 86%, expert outdoor instructors scored a 71.9%. General PE teacher norms were 60% (Figure W).

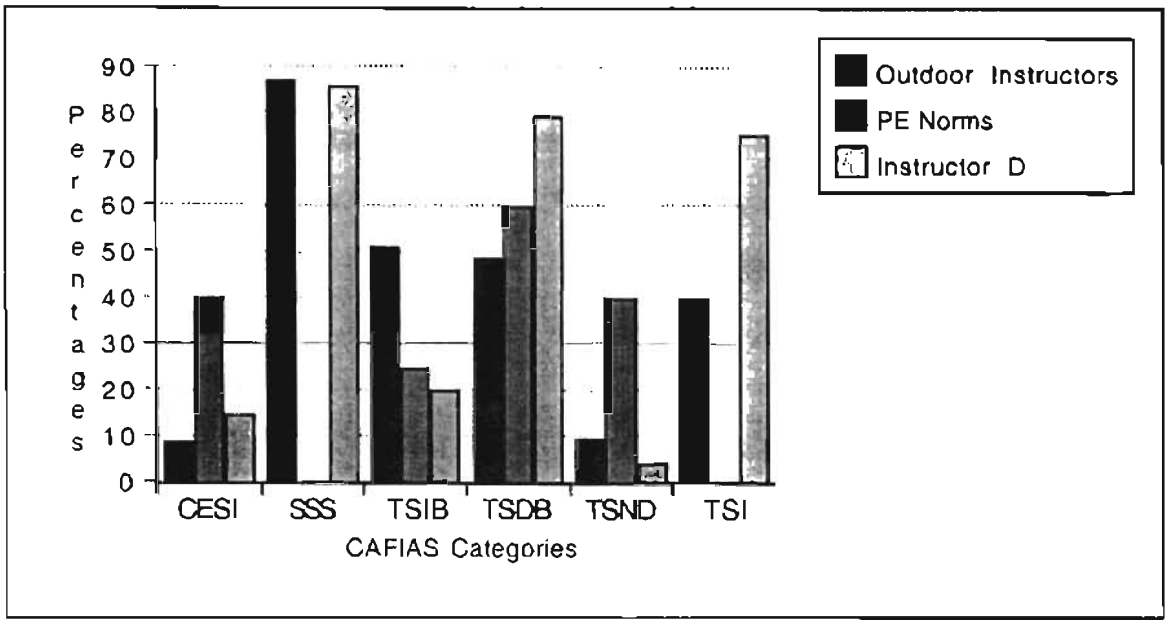

Figure X. Content Emphasis Student Input (CESI), Steady States (SSS), Total Student Initiated Behaviors (TSIB), Total Student Dependent Behavior (TSDB), Total Student Narrow Dependence (TSND), Total Student Interpretation (TSI)

Content emphasis student input (CESI) is the measure of unpredictable student behaviors that are on task in their behaviors and statements. In CESI, Instructor D's students scored an 14.5%, and expert outdoor instructors students scored an 8.6%. General PE norms were 40% (Figure X).

Steady states (SSS) of communication indicates the time spent in one specific kind of communication behavior that is extended. In SSS, Instructor D's students received an 85.7%, expert outdoor instructors' students received an 86.9%. No data was recorded for general PE norms (Figure X).

Total student initiated behaviors (TSIB) indicates student initiated talk or behavior that is unpredictable. In TSIB, Instructor D' students scored a 20% expert outdoor instructors' students scored a 51%. General PE norms were 25% (Figure X).

Total student dependent behavior (TSDB) is when student behavior is dependent upon teacher, or response to teacher questioning or demonstration.

In TSDB, Instructor D's students received a 79.5%, and outdoor instructors' students received a 49%. General PE teacher norms were 60% (Figure X).

Total student narrow dependence (TSND) represents all student verbal and nonverbal rote, predictable responses as they are compared to all student verbal and non verbal behaviors. In TSND, Instructor D's students received a 4%, and expert outdoor instructors' students received a 9.2%. General PE norms were 40% (Figure X).

Total student interpretation (TSI) is the interpretation or evaluative verbal response compared to all student verbal behaviors. In TSI, Instructor D's students received a 75.5%, and expert outdoor instructors students received a 39.8%. General PE norms were between 20% and 40% (Figure X).

Instructor D Summary

When reviewing instructor D's scores it was found that D is on task and students are actively participating. Instructor D's primary mode of communication is lecturing. Instructor D shows some integration of student ideas into the lecture and scores exceptionally well in extension and accepting of student's ideas and used acceptance and praise. Student responses and behaviors are somewhat on task and remain active during the coding period. Students responded well to demonstration and gave appropriate and thoughtful responses to Instructor D's lecture.

Instructor E

Instructor E worked as a challenge course instructor for one year at the time of the study. Instructor E had worked between ten and twenty courses in that time. A review of instructor E's results follow.

Comparisons to Classroom Teachers and Physical Education Teachers

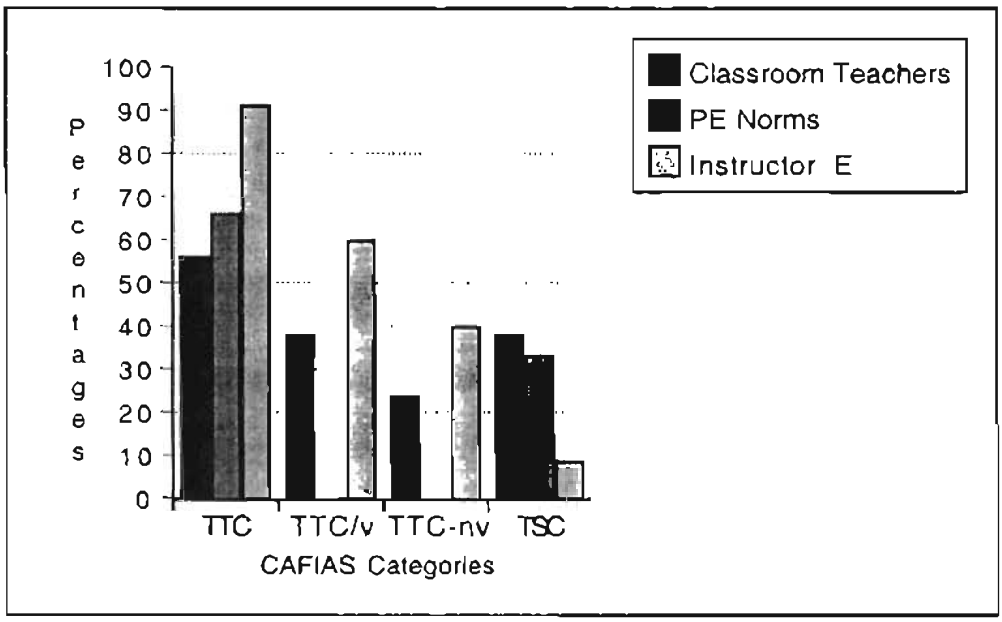

Figure Y. Total teacher contribution (TTC), verbal and nonverbal, Total student contributions (TSC)

Total teacher contribution (TTC) signifies the amount of the time the teacher is giving information or direction to the class. In TTC, Instructor E scored a 92% with a 61% verbal and a 41% nonverbal. Classroom teachers scored a 56% with a 38% verbal and a 24% nonverbal. No values were reported for PE teachers in this category. General PE teacher norms were 66% (Figure Y)

Total student contributions (TSC) signifies the amount of time the student is contributing to the classroom in any manner. In TSC, Instructor E scored an

8%, classroom teachers scored a 38% and PE teachers students scored a 36%. General PE norms were 33% (Figure Y).

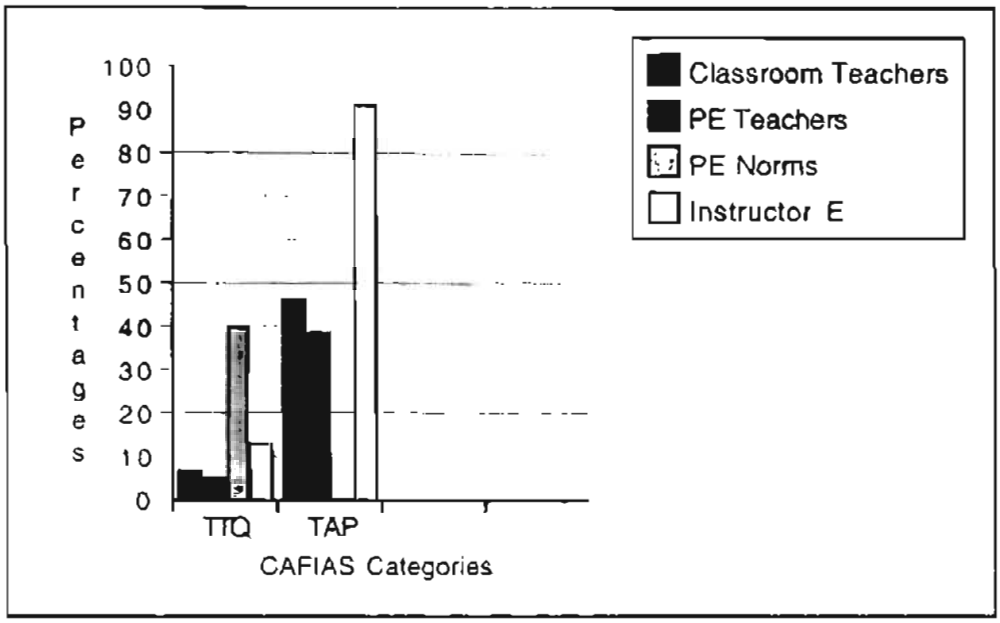

Figure Z. Teacher use of questioning (TTQ), Teacher use of acceptance and praise (TAP)

Teacher use of questioning (TTQ) is the verbal and nonverbal questions of the teacher compared to verbal and nonverbal lecturing behaviors. In TTQ, Instructor E scored a 13%, classroom teachers scored a 7% and PE teachers a 5%. General PE teacher norms were 40% (Figure Z).

Teacher use of acceptance and praise (TAP) are the teacher behaviors related to praise and acceptance as compared to the use of criticism. In TAP, Instructor E scored a 91%, classroom teachers a 46% and PE teacher scored a 39%. General PE norms were low (Figure Z).

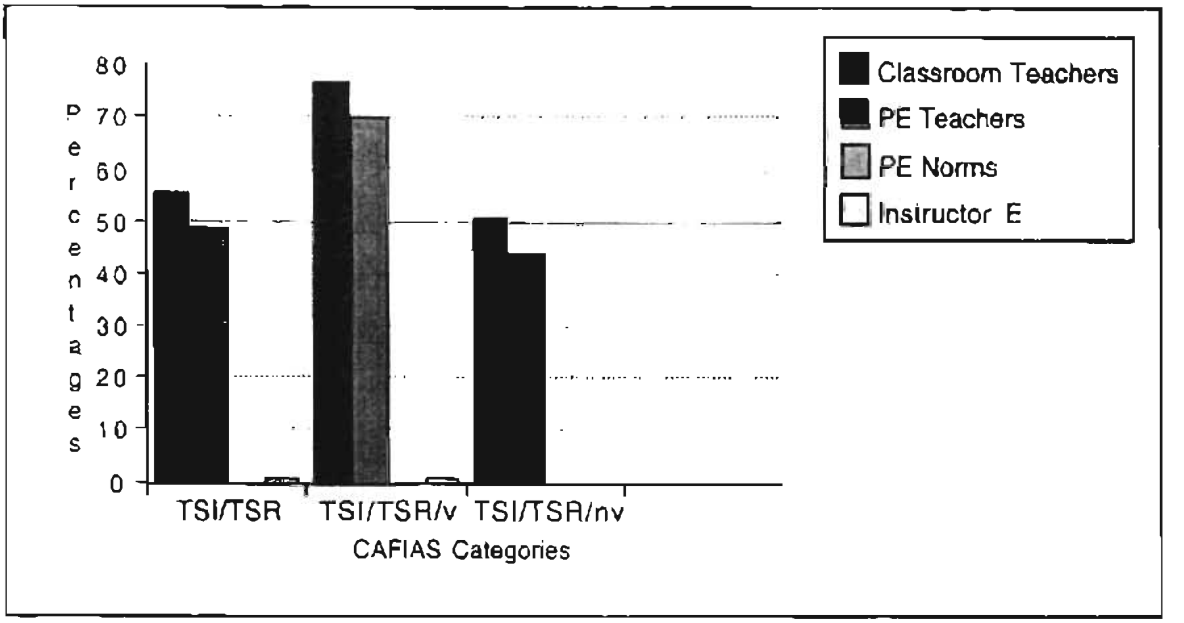

Figure AA. Total Student Initiated/Teacher Suggested Response (TSI/TSR)

Total student initiated/teacher suggested response (TSI/TSR) are the unexpected and unpredictable self-initiated student verbal behaviors as compared to all student verbal behaviors. In TSI/TSR, Instructor E scored a 1% total and a 1% in verbal and a 0% in nonverbal, classroom teachers scored a 56% total and a 77% verbal and 51% nonverbal. General PE norms were 26% and 50% (Figure AA)

Comparisons to Expert Outdoor Instructors

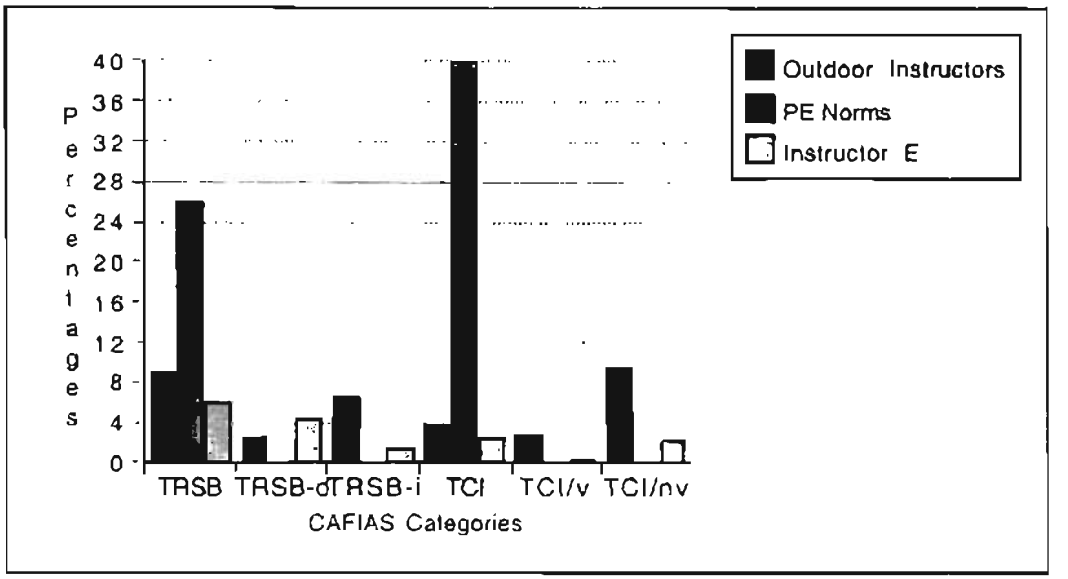

Figure BB. Teacher Response to Student Behavior (TSRB) direct and indirect, Teacher Constructive Integration (TCI), verbal and nonverbal

Teacher response to student behavior (TSRB) is the number of teacher responses in reaction to student input or ideas. In TSRB, Instructor E scored a 6% with direct interactions at 5% and indirect interactions at 1%. Expert outdoor instructors scored a 9.1% with direct interactions at 2.6% and indirect interactions at 6.5%. General PE norms were 26% with no data for direct or indirect interactions (Figure BB).

Teacher constructive integration (TCI) is when the teacher integrates the students response into lecture or discussion. In TCI, Instructor E received a total score of 3% with a 1% verbal and a 2% nonverbal, and expert outdoor instructor scores were 3.8% with a 2.8% in verbal and a 9.4% in nonverbal. General PE norms were 40% with no data for verbal and nonverbal interactions (Figure BB).

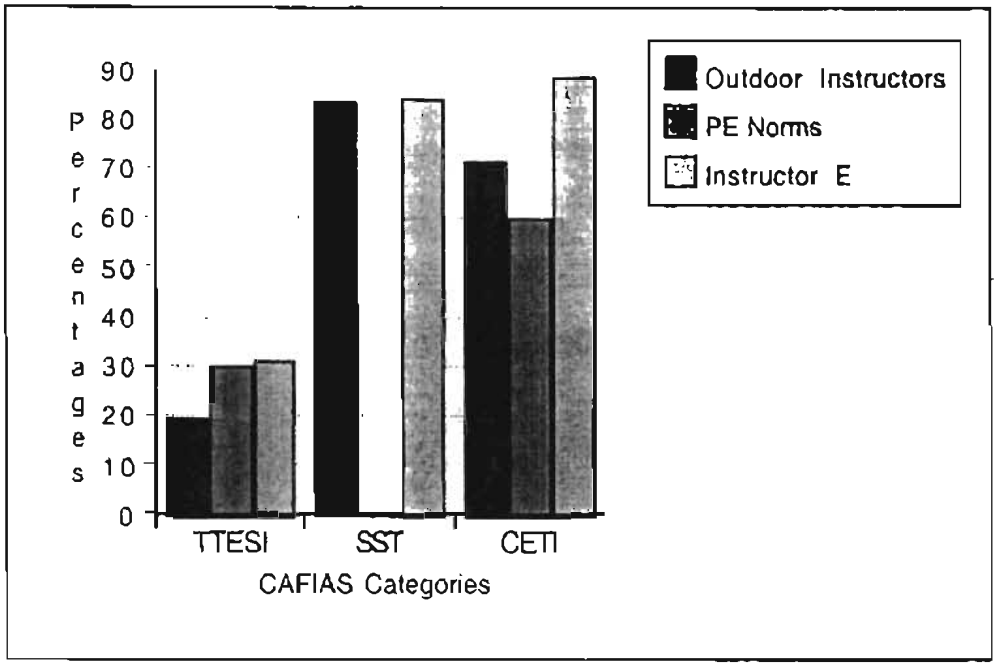

Figure CC. Teacher time expanding student ideas (TTESI), Steady states (SST), Content emphasis teacher input (CETI)

Teacher time expanding student ideas (TTESI) is an extension and acceptance of student ideas. In TTESI, Instructor E scored a 31%, and expert outdoor instructor scores were 19.7%. General PE norms were 30% (Figure CC).

Steady states (SST) of communication indicates the time spent in one specific kind of communication behavior that is extended. In SST, Instructor E received an 84% expert outdoor instructors received an 83.8%. General PE norms were not recorded for this category (Figure CC).

Content emphasis teacher input (CETI) is the amount of time the teacher devotes to the subject matter. In CETI, Instructor E scored an 87%, and the expert outdoor instructors scored a 71.9%. General PE norms were 60% (Figure CC).

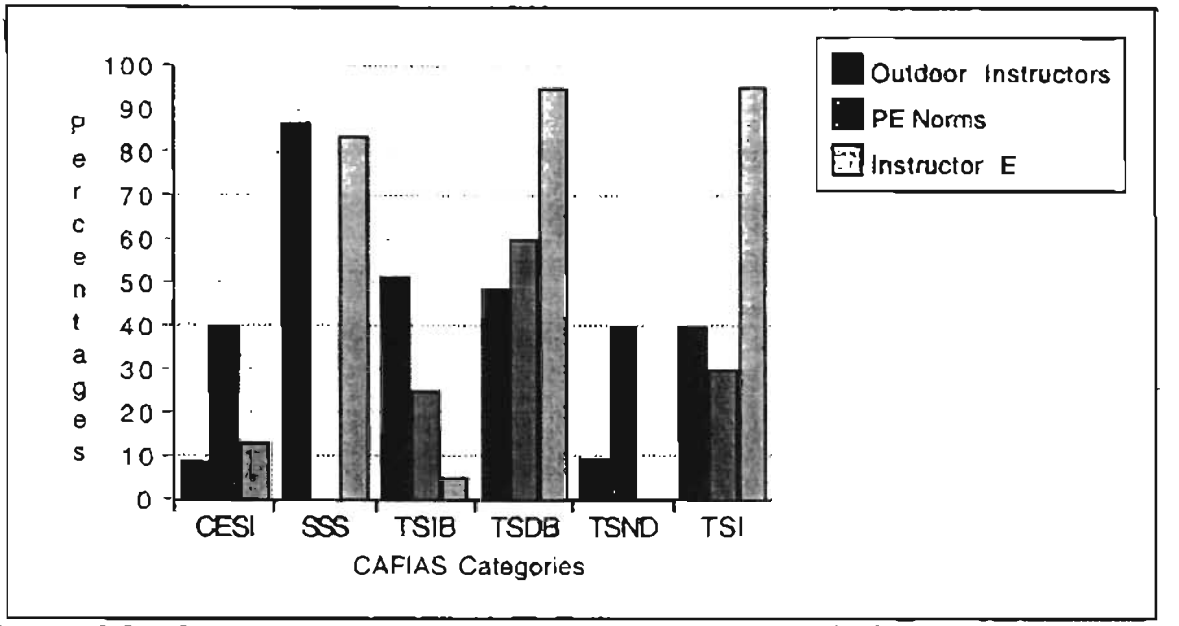

Figure DD. Content Emphasis Student Input (CESI), Steady States (SSS), Total Student Initiated Behaviors (TSIB), Total Student Dependent Behavior (TSDB), Total Student Narrow Dependence (TSND), Total Student Interpretation (TSI)

Content emphasis student input (CESI) is the measure of unpredictable student behaviors that are on task in their behaviors and statements. In CESI, Instructor E's students scored a 13%, while the expert outdoor instructors' students scored an 8.6%. General PE norms were 40% (Figure DD).

Steady states (SSS) of communication indicates the time spent in one specific kind of communication behavior that is extended. In SSS Instructor E's students received an 84%, and the expert outdoor instructors' students received an 86.9%. No data was recorded for general PE norms (Figure DD).

Total student initiated behaviors (TSIB) indicates student initiated talk or behavior that is unpredictable. In TSIB, Instructor E's students scored a 5% expert outdoor instructors students score was 51%. General PE norms were 25% (Figure DD).

Total student dependent behavior (TSDB) is when student behavior is dependent upon teacher, or response to teacher questioning or demonstration.

In TSDB, Instructor Es students received a 95% and expert outdoor instructors students received a 49%. General PE norms were 60% (Figure DD).

Total student narrow dependence (TSND) represents all student verbal and nonverbal rote, predictable responses as they are compared to all student verbal and non verbal behaviors. In TSND, Instructor E's students received a 0%, expert outdoor instructors received a 9.2%. General PE norms were 40% (Figure DD).

Total student interpretation (TSI) is the interpretation or evaluative verbal response compared to all student verbal behaviors, indicating student synthesis prior to response to the teacher. In TSI Instructor E's students received a 95%, expert outdoor instructors students received a 39.8%. General PE norms were between 20% and 40% (Figure DD).

Instructor E Summary

When reviewing the scores of instructor E it was found that instructor E is on task and uses lecture as a primary mode of communication. Instructor E remains on task a majority of the time and the lecture includes some student contributions and instructor E expands on student ideas in lecture. Instructor E recieved a high score in acceptance and praise. Instructor E's students initiate few communication behaviors and remain on task. Students respond well to lecture and demonstration and show synthesis of information before they respond.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to: 1) examine teaching behaviors of selected challenge course instructors using the Cheffers Adaptation of the Flanders Interaction Analysis System (CAFIAS); 2) compare behaviors of the challenge course instructors to those of physical education and classroom teachers as measured with CAFIAS in previous studies; 3) compare the teaching behaviors of the challenge course instructors to those of expert outdoor instructors. Classroom teachers/physical education teachers analyzed with CAFIAS were: total teacher-student contribution, teacher use of questioning, teacher use of acceptance and praise and total student initiated/teacher suggested response. Expert outdoor instructor categories analyzed with CAFIAS were: total teacher-student interaction, total teacher contributions, total student contributions, teacher time spent expanding student ideas, amount of time spent in a constant behavior verses transitional behaviors, and student responses to teacher.

The sample of challenge course instructors was a sample of convenience, the five subjects were selected based upon dates of scheduled courses and the consent of the participating challenge course groups. Each subject was invited to

participate in the study and asked to fill out a consent and demographic form (see Appendix B). All instruments and questionnaires were submitted to and approved by the Institutional Review Board at Oklahoma State University Prior to initiation of the study.

Subjects were filmed during several Challenge Courses the Fall of 1995. Subjects were filmed in four episodes of teaching then coded based on CAFIAS. The four episodes were: 1) Challenge Course introduction; 2) initiative debriefing; 3) harness talk; 4) and transfer talk. Observers were trained to insure inter observer reliability. The videos were then coded by the trained observers using the Cheffers Adaptation of the Flanders Interaction Analysis System (CAFIAS). Descriptive statistics were applied to give a general description of each challenge course instructor.

The analysis reveled there were differences between the instructors and the comparison groups.

Conclusions

The results of this study indicate that individual challenge course instructors vary widely in their ability to teach. Each instructor used lecture as a primary mode of communication but varied in the way they responded to students. Differences between classroom teachers, physical education teachers, general physical education teacher norms and expert outdoor instructors are noted.

Instructor A

A detailed comparison of instructor A to classroom teachers, physical education teachers and general physical education teacher general physical education teacher norms follows.

A's teacher contribution score was high at 91%, with classroom teachers' score at 56% and general physical education teacher norms of 66%. Instructor A's students did not contribute as often (9%) compared to classroom teachers (38%) and general physical education norms (33%). Instructor A's use of questioning (5%) compairs to classroom teachers (7%) and physical education teachers (5%) and is above the general physical education norms (40%). Instructor A shows a high score is use of acceptance and praise (65), classroom teachers (46%) and physical education teachers (39%) exhibit this behavior often as well the general physical education teacher norms are recorded as low. Instructor A's student initiated/teacher suggested response behaviors were 1% as compared to classroom teachers at 56%, physical education teachers 49% and general physical education teacher norms 38%.

A detailed comparison of instructor A to expert outdoor instructors and general physical education teacher follows.

Instructor A did not react often in responses to student input or ideas (5%), instructor A was slightly below expert outdoor instructors (9.4%) and below general physical education teacher norms (26%). Instructor A integrated none of students responses into teaching behaviors and is below expert outdoor instructors (9.4%) general physical education teacher norms show a much higher score of 40% in this category. Instructor A shows time expanding student ideas (15%) is below expert outdoor instructors (19%) and 15% below general physical education teacher norms (30%). Instructor A shows extended time in

communicating with a specific behavior (92%) instructor A score is higher than expert outdoor instructors (83.8%) in this category. Instructor A scores high on task behavior in content emphasis (88%), instructor A is 16% above expert outdoor instructors (72%) and 26% above the general physical education teacher norms (60%). Instructor A shows a comparable score (12%) in student input, nearly the same as expert outdoor instructors (8.6%) and 29% below the general physical education teacher norms (40%). In extended student behaviors, instructor A's students scored (63%) lower than expert outdoor instructors (86.9%) but their behaviors remained steady over 60% of the time. Instructor A's student initiated behaviors (17%) were low when compared to expert outdoor instructors (51%) but only 8% below general physical education teacher norms (25%). A's students responded with a high score to teacher questioning and demonstration (83%). They were 34% above expert outdoor instructors (49%) and 23% above general physical education teacher norms (60%). Instructor A's students scored (6%) nearly that same as expert outdoor instructors (9.2%) but low in rote predictable responses when compared to general physical education teacher norms (4%). Instructor A's students scored high in interpretation (75%) when compared to both expert outdoor instructors (39.8%) and general physical education teacher norms (30%).

When reviewing instructor A's scores this study suggests instructor A depends primarily on content presentation through lecture, which is supported in the literature as good teaching behaviors. In teaching behaviors instructor A's scores are comparable with classroom teachers, physical education teachers and outdoor instructors, however scores are well below physical education teacher norms and Instructor A received a higher score in acceptance and praise than any comparison group. Student interaction was limited by instructor A's teaching behaviors. Instructor A did not integrate, expand, react or respond to

student responses often consequently, the potential for thoughtful or engaged two way communication was minimized. Although students scored highly in predictable responses and interpretation to instructor A's teaching behaviors, it should be noted that student's predictable responses do not infer strong interactively between students and instructor. When instructor A's students did respond they scored high in interpretation and synthesis of instructor A's input, students were thoughtful and on task at these times. This suggests that instructor A, while achieving a strong passive and some thoughtful response from his students, is not demonstrating an engaged approach for classroom instruction. Consequently, instructor A's teaching behaviors do not encourage group or teacher/student interactivity, this interactivity being a vital component of the unique engagement exemplified in the challenge course experience.

Instructor B

A detailed comparison of instructor B to classroom teachers, physical education teachers and general physical education teacher general physical education teacher norms follows.

Instructor B contributed as teacher 95% of the time, in comparison instructor B was below classroom teacher scores and general physical education teacher norms. Instructor B's students contributed 5% of the time which was below classroom teacher's students general physical education teacher norms. Instructor B used little questioning which compares poorly to classroom teachers (7%) physical education teachers (5%) and general physical education teacher norms (40%). Instructor B used acceptance and praise (72%), classroom teacher scores were 46%, physical education teacher scores were 39% and general physical education teacher norms were recorded as low. Instructor B's student

initiated/teacher suggested response behaviors were recorded at 1% as compared to classroom teachers at 56%, physical education teachers 49% and general physical education teacher norms 38%.

A detailed comparison of instructor B to expert outdoor instructors and physical education teacher norms follows.

When compared to expert outdoor instructors and general physical education teacher norms, instructor B's response to students was low at 3.5% while expert outdoor instructors scored 9.1% and physical education teacher norms were 29%. Instructor B rarely integrated students responses into lecture or discussion, scoring a 1.38%, expert outdoor instructors had a higher score of 9.4% and physical education teacher norms were 40%. Instructor B did spend time expanding student ideas (33%) but was slightly lower than expert outdoor instructors (19.7%) and much lower than general physical education teacher norms (30%). Instructor B remained in a steady state 10% more than expert outdoor instructors. Instructor B showed a very high score in content emphasis (93%) expert outdoor instructors (71.9%) and physical education teacher norms (60%). Instructor B's students score of 7% was comparable in content emphasis to expert outdoor instructors, 8.6% but far below the general physical education teacher norms of 40%. Instructor B's students remained in steady states of behaviors 80% of the time which was comparable to expert outdoor instructors with a score of 86.9%. Instructor B's students did not initiate behaviors (7.6%) as often as expert outdoor instructors (51%) and general physical education teacher norms (25%0). Instructor B's students showed no rote predictable responses to instructor B, expert outdoor instructor score was low (9.2%) and general physical education teacher norms was 40%. Instructor B's students showed very high synthesis of information 52% above expert outdoor instructors and 62% above general physical education teacher norms

When reviewing instructor B's scores this study suggests instructor B depends primarily on content presentation through lecture and demonstration, which are supported in the literature as good teaching behaviors. In teaching behaviors instructor B's scores are well below classroom teachers, physical education teachers and outdoor instructors and physical education teacher norms. Instructor B remained on task in content but did not respond often to students. Instructor B spent very little time integrating, expanding or reacting to student behaviors. Student interaction was limited by instructor B's teaching behaviors consequently, the potential for thoughtful or engaged two way communication was minimized. Students scored highly in predictable responses and student interpretive responses to instructor B's teaching behaviors. This suggests that instructor B, while achieving a strong passive and some thoughtful response from his students, is not demonstrating an engaged approach for challenge course instruction. Consequently, instructor B's teaching behaviors do not encourage group interactivity, this interactivity being a vital component of the unique engagement exemplified in the challenge course experience.

Instructor C

A detailed comparison of instructor C to classroom teachers, physical education teachers and general physical education teacher general physical education teacher norms follows.

Instructor C's teacher contribution score is high (83%) compared to classroom teacher (56%) and general physical education teacher norms (66%). Instructor C's students contributed (17%) as compared to classroom teachers (38%) and general physical education teacher norms (33%). Instructor C used some questioning (12) which is higher thatn that of classroom teachers (7%)

physical education teachers (5%) and general physical education teacher norms (40%). Instructor C used acceptance and praise 66%, classroom teacher scores were 46%, physical education teacher scored 39% and general physical education teacher norms were recorded as low. Instructor C's students initiated/teacher suggested response behaviors were 1% as compared to classroom teachers at 56%, physical education teachers 49% and general physical education teacher norms 38%.

A detailed comparison of instructor C to expert outdoor instructors and physical education teacher norms follows.

Instructor C reacted to student input and ideas (13%), more than expert outdoor instructors (9.1%) but less than general physical education teacher norms (26%). Instructor C did not integrate student responses into lecture (0%) which compares to expert outdoor instructors (3.8%) but is far surpassed by general physical education teacher norms 40%. Instructor C accepted student ideas (9%) less than expert outdoor instructors (19.7%) while far below the general physical education teacher norms (30%). Instructor C spent 84% of the time in one specific kind of communication behavior which directly compares to expert outdoor instructors (83.5%). Instructor C devoted 86% of time to subject matter, this is higher than expert outdoor instructors (71.9%) and general physical education teacher norms (60%). Instructor C's student initiated/teacher suggested response that were on task in behavior and statements were 17%, well over expert outdoor instructors (8.6%) but below general physical education teacher norms (40%). Instructor C's students were in steady sates of communication behaviors 94% of the time which is comparable to expert outdoor instructors (86%). Instructor C's students exhibited unpredictable student talk 16% of the time, lower by far than expert outdoor instructors (51%) and below general physical education teacher norms (25%). Instructor C's

students responded to the instructor's teaching and demonstration 83% of the time which was higher than expert outdoor instructors (49%) and general physical education teacher norms (60%). Instructor C''s students responded 20% of the time in a rote manner which was higher than expert outdoor instructors (9.2%) but is below general physical education teacher norms (40%). Instructor C's students gave thoughtful interpretive responses 64% and compared to expert outdoor instructors at 39% and general physical education teacher norms betreen 20 and 40%.

When reviewing instructor C's scores this study suggests instructor C depends primarily on content presentation through on task lecture and demonstration with some use of questions, which is supported in the literature as good teaching behaviors. Instructor C also recieved a high score un use of acceptance and praise. In teaching behaviors instructor C's scores are comparable with classroom teachers, physical education teachers and outdoor instructors, however scores are well below physical education teacher norms. Instructor C shows some teacher interaction, reacting and accepting student ideas but did not integrate these ideas into the lecture. Student interaction was used in instructor C's teaching behaviors consequently, there was potential for thoughtful or engaged two way communication. Students responses and behaviors were somewhat on task and they remained on task. Students respond well to demonstration and gave thoughtful interpretive responses to instructor C's lecture. This suggests that instructor C, achieved student responses, and is demonstrating an engaged approach for challenge course instruction. Consequently, instructor C's teaching behaviors encourage group interactivity, this interactivity being a vital component of the unique engagement exemplified in the challenge course experience.

Instructor D

A detailed comparison of instructor D to classroom teachers, physical education teachers and general physical education teacher general physical education teacher norms follows.

Instructor D's teacher contribution score (89%) was scores of classroom teachers (56%) and general physical education teacher norms (66%). Instructor D's students contributed 11% of behaviors which compares to classroom teachers 38% both are well below physical education norms of 33%. Instructor D used 8% of lecture in questioning and compares to classroom (7%), physical education (5%) teachers but compares poorly to physical education teacher norms (40%). Instructor D recieved a high score in acceptance and praise (97%) when compared to classroom (46%) and physical education (39%) teachers but is comparable to the physical education norms (low). Instructor D's student initiated/teacher suggested response behaviors were (0%) and compared poorly to classroom (56%) and physical education (49%) teachers and physical education norms (38%).

A detailed comparison of Instructor D to expert outdoor instructors and general physical education teacher follows.

Instructor D reacted to student input and ideas (10%) which compares to expert outdoor instructors (9.1%) and is below physical education norms (26%). Instructor D did not integrate student responses often into lecture (5%) which which is slightly more than expert outdoor instructors (3.8%) and is surpassed by physical education norms (40%). Instructor D accepted student ideas 35% of the time which is higher than expert outdoor instructors (19.7%) and physical education teacher norms (30%). Instructor D spent 84.5% of the time in one specific kind of communication behavior which compares to expert outdoor

instructors score of 83.5%. Instructor D devoted 86% of time to subject matter which is higher than expert outdoor instructors (71.9%) and physical education teacher norms (60%) scores. Instructor D's students contributed unpredictable responses that were on task in behavior and statements 14.5% which is higher than expert outdoor instructors (8.6%) but well below physical education teacher norms (40%). Instructor D's students were in steady states of communication behaviors 85.7% of the time which is comparable to expert outdoor instructor's 86.7%. Instructor D's students exhibited unpredictable student behaviors 20% which was lower than expert outdoor instructors (51%) and comparable to physical education norms (25%). Instructor D's students responded well to Instructor D's teaching and demonstration (79.5%) which is higher than expert outdoor instructors (49%) and physical education teacher norms (60%). Instructor D's students responded 4% of the time in a rote predictable manner as compared to total behaviors, expert outdoor instructors scores were 9.2% and physical education teacher norms were 40%. Instructor D's students gave thoughtful interpretive responses 75.5% of their responses and compared to expert outdoor instructors 39.8% and physical education teacher norms at 38%.

When reviewing instructor D's scores this study suggests instructor D depends primarily on content presentation through lecture and interaction, which are supported in the literature as good teaching behaviors. In teaching behaviors instructor D's scores are lower than classroom teachers, physical education teachers and outdoor instructors, and scores are well below physical education teacher norms. Student interaction was emphasized in instructor D's teaching behaviors, thoughtful or engaged two way communication was used between students and instructor, this teaching behavior is indicative of student learning. Instructor D shows some integration of student ideas into the lecture and scores exceptionally well in extension and accepting of student's ideas with

high scores in acceptance and praise. Students responded well to demonstration and gave appropriate and thoughtful responses to instructor D's lecture. This suggests that instructor D is demonstrating an engaged approach for challenge course instruction. Consequently, instructor D's teaching behaviors encourage group interactivity, this interactivity being a vital component of the unique engagement exemplified in the challenge course experience.

Instructor E

A detailed comparison of instructor E to classroom teachers, physical education teachers and general physical education teacher norms follows.

Instructor E's teacher contribution score was higher (92%) when compared to classroom teacher (56%) and physical education teacher norms (66%). Instructor E's students contributed little (8%) when compared to classroom teachers (38%) and physical education norms (33%). Instructor E used questioning more often as a mode of communication (13%) when compared to classroom (7%), physical education (5%) teachers and physical education teacher norms (40%). Instructor E used acceptance and praise (91%), classroom (46%) and physical education (39%) teachers scores were higher and physical education norms were recorded as low. Instructor E's students unexpected and unpredictable behaviors (1%) were low compared to classroom (56%) and physical education (49%) teachers as well as physical education norms (38%).

A detailed comparison of instructor E to expert outdoor instructors and general physical education teacher follows.

Instructor E reacted to student input and ideas 6% of the time which compares to expert outdoor instructors 9.1% and is below physical education norms of 26%. Instructor E did not integrate student responses often into lecture

(3%) which is comparable to expert outdoor instructors (3.8%) but is lower than physical education norms (40%). Instructor E accepted student ideas 31% of the time which surpasses expert outdoor instructors score of 19.7% and is comparable to physical education teacher norms of 30%. Instructor E spent 84.% of the time in one specific kind of communication behavior which directly compares to expert outdoor instructors score of 83.8%. Instructor E devoted 87% of time to subject matter which is higher than expert outdoor instructors score of 71.9% and physical education teacher norms 60% scores. Instructor E's students contributed unpredictable responses that were on task in behavior and statements 13% which is over expert outdoor instructors (8.6%) but well below physical education teacher norms (40%). Instructor E's students were in steady sates of communication behaviors 84% of the time which is comparable to expert outdoor instructor's 86.9%. Instructor E's students exhibited unpredictable student behaviors 5% which was lower than expert outdoor instructors (51%) and comparable to physical education norms (25%). Instructor E's students responded well to instructor E's teaching and demonstration (95%) which is more than expert outdoor instructors (49%) and physical education teacher norms (60%). Instructor E''s students did not respond in a rote manner as compared to total behaviors, expert outdoor instructors scores were 9.2% and physical education teacher norms were 40%. Instructor E's students gave thoughtful interpretive responses 95% of their responses and compared to expert outdoor instructors 39.8% and physical education teacher norms at 38%.

When reviewing instructor E's scores this study suggests instructor E depends primarily on content presentation through lecture, which is supported in the literature as a good teaching behavior. In teaching behaviors instructor E's scores are comparable with classroom teachers, physical education teachers and outdoor instructors, however scores are well below physical education teacher

norms with the exception of the use of questioning. Student interaction and contribution was included in some of instructor E's lecture as well as inclusion of student ideas. Instructor E allowed for thoughtful or engaged two way communication which is supported in the literature as effective teaching behaviors. This suggests that instructor E achieved responses from students and is demonstrating an engaged approach for challenge course instruction. Consequently, instructor E's teaching behaviors encourage group interactivity, this interactivity being a vital component of the unique engagement exemplified in the challenge course experience.

It can be concluded from this study that the teaching behaviors of challenge course instructors are diverse and unpredictable. The diversity of instructors can be attributed to many things, perhaps, lack of experience, or poor training. This study implies the need for focused training programs for instructors that teach effective teaching behaviors. The primary skills instructors need to learn, as supported in the literature, are: planning and organization; classroom or group management; setting goals and expectations with the students; clear presentation of content; giving specific feed back; practice of new skills and engaging in interactive behaviors with students.

Instructor behaviors were similar to those of outdoor instructors and somewhat better than classroom teaching behaviors. The instructors in this study could be considered not as effective as physical education teacher norms.

Experience in terms of time as a challenge course instructor, did not seem to matter in regards to effective teacher behavior. Age did not seem to matter.

CAFIAS seems to be an effective observation tool when studying challenge course instructors. CAFIAS is labor intensive and time consuming observation tool to use.

Recomendations

This study addressed the teaching behaviors of challenge course instructors. In retrospect, the researcher recommends, filming of teaching episodes during the more interactive phase of the challenge course schedule such as debriefing or when explaining games and activities. This would have given a more accurate interactive picture of the instructor.

Ongoing research has produced other interactive analysis tools and has refined concepts used in CAFIAS. Other interaction analysis tools should be considered. The results of this study and its design provide a basis for a guide for a variety of inquiries regarding challenge course instructor behavior.

Implications of the study indicate a need for more research on challenge course instructors before the conclusions of this study can be used as baseline data for this group.

Further research on challenge course instructors would give an accurate picture of instructors which might influence training procedures since interaction between challenge course instructors and participants is an essential part of the experience.

Other components of effective instruction such as feedback, debriefing, setting expectation and goals, and planning and organization should be investigated.

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APPENDIX A

CAFIAS CATEGORIES

CAFIAS Categories

Categories 2 - 17 Teacher Behaviors
Categories 8 - 19 Student Behaviors
Categories 10 Confusion
Categories 20 Silence

Relevant Behaviors:

Verbal

2 - praises, jokes, encourages

3 - accepts, clarifies, uses and develops student feelings and suggestions

4 - asks question requiring student answers

Verbal

5 - Gives facts, opinions, expresses ideas, asks rhetorical questions

6 - gives directions or orders which will result in student response

7 - (neg. value) criticizes, expresses anger, uses sarcasm

8- predictable student response such as obeying orders, Does not require thinking beyond comprehension.

8\ - predictable student response which require some measure of evaluation, synthesis and interpretation.

9 - student talk purely result of own initiative and could not be predicted

10 - confusion, chaos, disorder

20 - silence, students sitting doing nothing

Non-Verbal

12 - smiles, nods, winks, laughs

13 - nods w/out smile, sighs empathetically

14 - wrinkles brow, raises hand to expect answer

Non-Verbal

15 - gesticulates, demonstrates, points

16 - points w/head, points finger

17 - grimaces, growls, frowns rolls eyes, looks disgusted

18 - poker face response, moves mechanically

18\ - Looks of thinking, pensive

19 - makes interrupting sounds, raises hand, makes up own movement

APPENDIX B

CONSENT AND DEMOGRAPHICS FORMS

Consent Form

I, _____ , hereby authorize Karen Peitzmeier, or associates or assistants of her choosing, to videotape my instruction on the Challenge Course. I understand that this videotape will be analyzed to study instructor behaviors and instructor interactions with participants, I will be filmed for approximately one hour over two days. I understand the videotape will be destroyed after the study has been completed.

This is done as part of an investigation entitled: Analysis of Teaching Effectiveness of Challenge Course Instructors.

The purpose of the procedure is to analyze Challenge Course Instructor effectiveness.

I understand that participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty after notifying the project director.

I may contact Karen Peitzmeier at telephone (405) 744-5581. I may also contact University Research Services, 001 Life Sciences East, Oklahoma State University, Stillwater, OK 74078; Telephone: (405) 744-5700.

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: _____ Time: _____(a.m./p.m.)

Signed: _____

Signature of Subject

I certify that I have personally explained all elements of this form to the subject before requesting the subject to sign it.

Signed: _____

Project Director or her authorized representative

Demographics

Name _____

Age _____

How long have you been a Challenge Course instructor?

Please estimate the number of Challenge Courses you have led.

1-10 _____

10-20 _____

20-30 _____

30-50 _____

more than 50, please specify _____

Please estimate the number of Challenge Courses you have led in the past year._____

Have you instructed for Challenge Courses other than the Camp Redlands course?

Yes _____

No _____

What is your ability level with the following components of the Challenge Course. Please rate your level of ability as if it were a dollar, for example, ability level with the high course might be $.60.

Introduction _____

Games _____

initiatives _____

Processing _____

Harness talk _____

Setting up the high course _____

Transfer training _____

High elements _____

APPENDIX C

INSTRUCTOR DATA A-E

Instructor A Data

	2	12	3	13	4	14	5	15	6	16	7	17	8	18	8\	18\	9	19	10	20	Totals
2																					0
12																					0
3				2											6		2				10
13			2		2					2					8		2				16
4				6	4			8							2						20
14																					0
5					2		36	163		2			1								204
15			2				176	14	2												194
6					2			2	1				2		2						9
16				2					3	1											6
7																					0
17																					0
8									3												3
18																					0
8\			4	4	10										14		4				36
18\																					0
9			2	2											4						8
19																					0
10																					0
20																					0
Teacher	0	0	10	16	20	0	212	187	9	5	0	0	3	0	36	0	8	0	0	0	506
Environ.																					0
Student																					0
Total	0	0	10	16	20	0	212	187	9	5	0	0	3	0	36	0	8	0	0	0	506
Percent	0.00	0.00	1.98	3.16	3.95	0.00	41.90	36.96	1.78	0.99	0.00	0.00	0.59	0.00	7.11	0.00	1.58	0.00	0.00	0.00	

Instructor B Data

	2	12	3	13	4	14	5	15	6	16	7	17	8	18	8\	18\	9	19	10	20	Totals
2																					
12				2											2						
3		2													4						
13			2		2										6						
4			2	6			2	2													
14																					
5							34	178	2						2		2				
15							186	8													
6					2				3												
16																					
7																					
17																					
8																					
18																					
8\		2	2		10			2							8						
18\																					
9															2						
19																					
10																					
20																					
Teacher	0	4	6	8	14	0	222	190	5	0	0	0	0	0	24	0	2	0	0	0	475
Environ.																					0
Student																					0
Total	0	4	6	8	14	0	222	190	5	0	0	0	0	0	24	0	2	0	0	0	475
Percent	0.00	0.84	1.26	1.68	2.95	0.00	46.74	40.00	1.05	0.00	0.00	0.00	0.00	0.00	5.05	0.00	0.42	0.00	0.00	0.00	

Instructor C Data

	2	12	3	13	4	14	5	15	6	16	7	17	8	18	8\	18\	9	19	10	20	Totals
2							2														
12																					
3				1	1		4								7		9				
13			1	1											14						
4			2	5	12		8						4		9		2				
14																					
5	2		9	2	5		100	76	3	2			12		2		1				
15							82	6													
6					2		6		3												
16									4	1											
7															2						
17																					
8					6		6		1	2											
18																					
8\			3	7	17		2				2				18		1				
18\																					
9				2			6	7													
19																					
10																					
20																					
Teacher	2	0	15	18	43	0	216	89	11	5	2	0	16	0	52	0	13	0	0	0	482
Environ.																					0
Student	0	0				0															0
Total	2	0	15	18	43	0	216	89	11	5	2	0	16	0	52	0	13	0	0	0	482
Percent	0.41	0.00	3.11	3.73	8.92	0.00	44.81	18.46	2.28	1.04	0.41	0.00	3.32	0.00	10.79	0.00	2.70	0.00	0.00	0.00	

Instructor D Data

	2	12	3	13	4	14	5	15	6	16	7	17	8	18	8\	18\	9	19	10	20	Totals
2							4														
12																					
3			2	8	2										9		1				
13				11	1										19		6				
4	2		3	4	5		10	3					2		1						
14																					
5	2			3	15		126	74							2		2				
15			2				78	7													
6							4														
16			2																		
7																					
17																					
8					2				2												
18																					
8\			8	10	4		4	2		2					5						
18\																					
9			3	3			2								1		1				
19																					
10																					
20																					
Teacher	4	0	20	39	29	0	228	86	2	2	0	0	2	0	37	0	10	0	0	0	459
Environ.																					0
Student																					0
Total	4	0	20	39	29	0	228	86	2	2	0	0	2	0	37	0	10	0	0	0	459
Percent	0.87	0.00	4.36	8.50	6.32	0.00	49.67	18.74	0.44	0.44	0.00	0.00	0.44	0.00	8.06	0.00	2.18	0.00	0.00	0.00	100

Instructor E Data

	2	12	3	13	4	14	5	15	6	16	7	17	8	18	8\	18\	9	19	10	20	Totals
2																					
12																					
3			8	1	8					7					6		2				
13			3		1					1					2						
4			4	4	16		5	9		1					9						
14																					
5			2		6		40	129							2						
15					2		130	2													
6					2		2		1	2											
16			5	2	2				2	3					5						
7																					
17												5									
8					2																
18																					
8\			10		10					5					14						
18\																					
9																					
19								2													
10																					
20																					
Teacher	0	0	32	7	49	0	177	142	3	19	0	5	0	0	38	0	2	0	0	0	474
Environ.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Student	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	32	7	49	0	177	142	3	19	0	5	0	0	38	0	2	0	0	0	474
Percent	0.00	0.00	6.75	1.48	10.34	0.00	37.34	29.96	0.63	4.01	0.00	1.05	0.00	0.00	8.02	0.00	0.42	0.00	0.00	0.00	

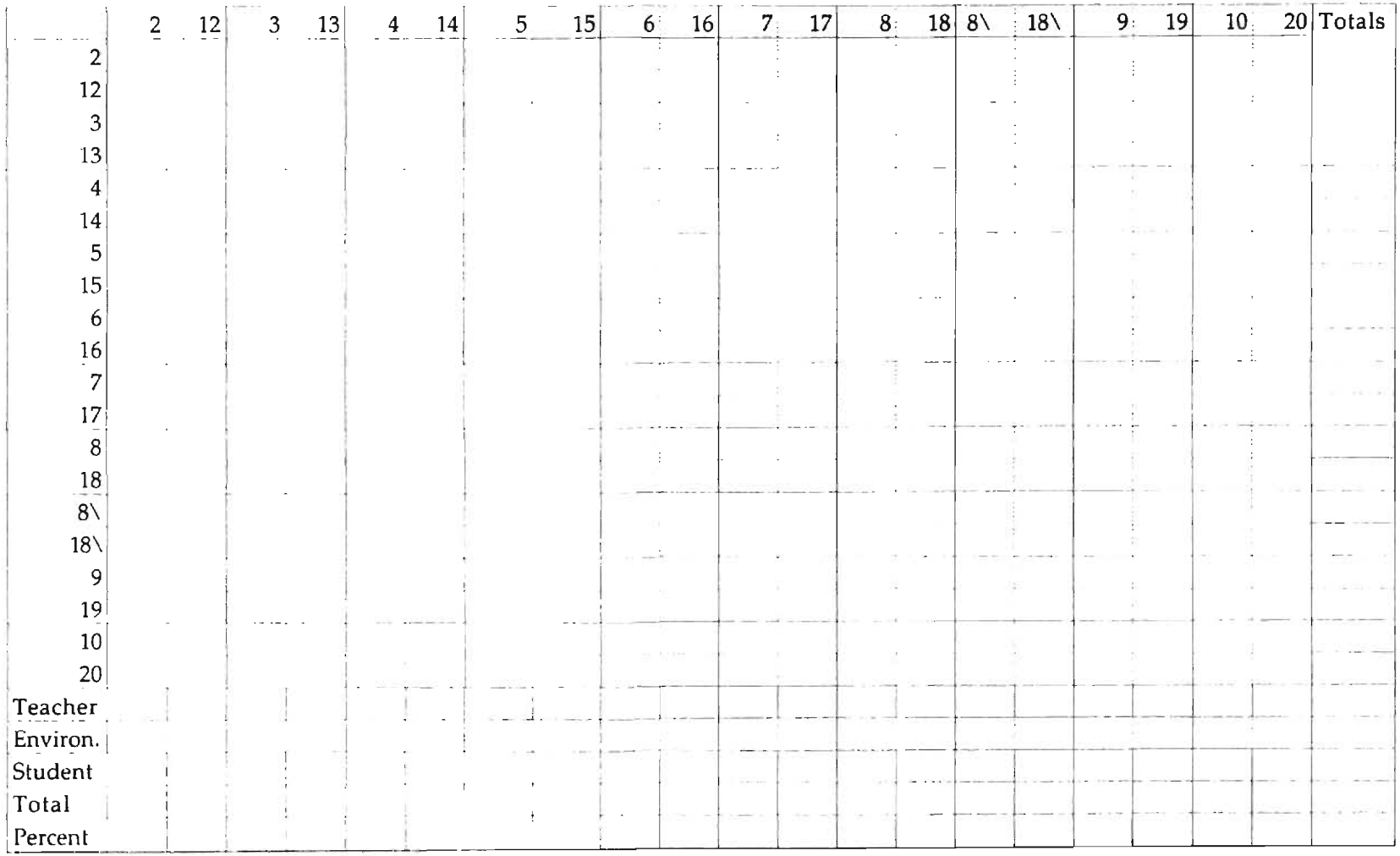
APPENDIX D

CAFIAS TALLEY SHEET AND MATRIX

CAFIAS TALLY SHEET

1	26	51	76	101	126	151
2	27	52	77	102	127	152
3	28	53	78	103	128	153
4	29	54	79	104	129	154
5	30	55	80	105	130	155
6	31	56	81	106	131	156
7	32	57	82	107	132	157
8	33	58	83	108	133	158
9	34	59	84	109	134	159
10	35	60	85	110	135	160
11	36	61	86	111	136	161
12	37	62	87	112	137	162
13	38	63	88	113	138	163
14	39	64	89	114	139	164
15	40	65	90	115	140	165
16	41	66	91	116	141	166
17	42	67	92	117	142	167
18	43	68	93	118	143	168
19	44	69	94	119	144	169
20	45	70	95	120	145	170
21	46	71	96	121	146	171
22	47	72	97	122	147	172
23	48	73	98	123	148	173
24	49	74	99	124	149	174
25	50	75	100	125	150	175

Matrix


2 12 3 13 4 14 5 15 6 16 7 17 8 18 8\ 18\ 9 19 10 20 Totals
2
12
3
13
4
14
5
15
6
16
7
17
8
18
8\
18\
9
19
10
20
Teacher
Environ.
Student
Total
Percent

APPENDIX E

IRB FORM

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 11-01-95 **IRB#:** ED-96-042

Proposal Title: ANALYSIS OF TEACHING EFFECTIVENESS OF CHALLENGE COURSE INSTRUCTORS

Principal Investigator(s): Christine Cashel, Karen Peitzmeier

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Signature: _____ Date: November 3, 1995

Chair of Institutional Review Board

VITA \

Karen Marguerite Peitzmeier

Candidate for the Degree of

Masters of Science

Thesis: ANALYSIS OF TEACHING BEHAVIORS OF CHALLENGE COURSE INSTRUCTORS

Major Field: Health, Physical Education, and Leisure

Biographical:

Personal Data: Born in Macomb, Illinois, On March 28, 1963, the daughter of Dennis and Marj Peitzmeier.

Education: Graduated from Macomb High School, Macomb Illinois in May 1981; received a Bachelor of Science degree in Recreation and Park Administration from Western Illinois University, Macomb, Illinois in May 1988. Completed the requirements for the Master of Science Degree with a major in Health, Physical Education, and Leisure in May 2001.

Experience: Outdoor Education instructor Storer YMCA Camps, 1984 1985; Assistant trip and activity leader, Southern Illinois University, 1985-1987; Wilderness Instructor for the Wilderness Education Association,1990-2001; Unit staff, and Activity Specialist, Charter North Psychiatric Hospital 1992-1993; Coordinator Outdoor Adventure Trip Program Oklahoma State University, 1993-1995; Program Coordinator Horn Field Campus 1996-2001

Professional Memberships: Wilderness Education Association, National Therapeutic Recreation Society, Association for Challenge Course Technology, Association for Nature Center Administrators.