A CASE STUDY OF TWO ALTERNATIVE ELEMENTARY PHYSICAL EDUCATION PROGRAMS

DISSERTATION

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By


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To Lisa . . .
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CHAPTER I
INTRODUCTION

Education has a history of being a powerful force in the transmission and development of cultural heritage (Lortie, 1975). Many schools have developed innovative ways to transmit the knowledge and acceptable behavior of society. In many cases teachers and principals have been proactive in establishing and maintaining innovative methods and determining content to educate children. In the 1980's and 1990's alternative forms of education have been sought in all school content areas. The beginning of the current reform movement followed the presentation of the report A Nation at Risk developed by the National Commission on Excellence in Education (1983). In response to this report, leading researchers presented several educational reforms for schools and universities (Goodlad, 1984; Holmes, 1990; Lieberman and Miller, 1990; Sizer, 1985, 1992).

Magnet schools were created as one example of such reform. The precise definition of a magnet school and the distinction between magnet schools and alternative schools is problematic. The terms "magnet school" and "alternative school" have been used interchangeably in the literature (Raywid, 1984). In this study the terms "magnet school" and "alternative school" will be used synonymously. A magnet school can be defined as a school, or a program within a school, that: has a special curricular theme or method of instruction, attempts to desegregate a school district, relies on voluntary enrollment, and offers open access to students beyond a regular attendance zone (Blank,
accomplish desegregation in large urban school districts. However, magnet schools have evolved beyond their original purpose of providing voluntary desegregation to programs which offer educational innovation attractive to all parents (Price, 1988).

Glaser, Larsen, and Nichlos (1992) found that alternative education in elementary schools was a positive force in determining students’ achievement as measured by grade point average, standardized test scores, and student completion of formal education programs. They found that parental investment of time was a common denominator in determining student success. Lezotte and Taylor (1989), using a success criterion based on the effective schools model, concluded that magnet schools have an educational advantage over other public schools. Lezotte and Taylor (1989) argued for stronger efforts to create not just alternative programs, but effective schools. “We must not be satisfied with choice itself . . . the new agenda ought to be effective schools for all- the choice is ours!” (p.29).

Alternative education has influenced many areas of education, including physical education. One example of change has been the development of alternative schools with a physical education focus. Stroot, Carpenter, and Eisnaugle (1991) suggested that Westgate School, an alternative school with a focus on physical education, is an example of an effective “school that works.” In that report measures of effectiveness were high attendance rates, positive reports from surveys of parents and teachers, and high academic scores on standardized tests from the school district. Physical education was a key component in the program, was embedded in the curriculum, and was seen as a prominent motivator at the elementary level. “The Westgate philosophy is based on educating the total child- physically, intellectually, and emotionally” (Stroot, Carpenter, & Eisnaugle, 1991, p. 49). Westgate utilized an instructional approach in which physical education, critical thinking, health, fitness, and written communication skills were integrated into the academic curriculum.
Physical education is only one example of magnet schools' possible foci. They can also focus on such programs as art, science, foreign languages, or adventure education. Cornwall and Drexel, the two magnet schools in this study, had adventure education as the foundation of their school wide curriculum. As valuable as magnet schools appear to be, little is known about the effects of alternative forms of curriculum or the values and beliefs of the teachers and principals who set up and perpetuate these learning environments. The processes of "how" and "what" students are exposed to in alternative forms of education, such as adventure education programs in elementary schools, have not been investigated. A multiple methods case study design was utilized to investigate the two physical education programs at Cornwall and Drexel.

Adventure education falls within the broader area of experiential education which cuts across different inter-disciplinary lines (Whitcombe, 1991). Experiential education is a method of learning in which participants actively interact with the material to be learned, then reflect and share what they gained from the experience (Johnson, 1980). Teachers are seen as facilitators who encourage students "to master the basic skills of reading, writing, speaking, listening, and problem solving" (Whitcombe, 1991, p. 6).

The more specific area of adventure education can be defined as education that "contributes to growth through perceived or actual physical and emotional challenge, followed by the opportunity for self- and group-appraisal and support" (Whitcombe, 1991, p. 6). The concept of risk or personal challenge is generally seen as an inherent part of the adventure education experience. Rohnke (1986) explained that adventure education activities should be considered as having uncertain outcomes with some physical or emotional risk involved, but should not be closely related to the concepts of fear, danger, and "ultimate disaster".

There is a paucity of research in the area of adventure education (Martin & Priest, 1986; Hanna, 1992; Rademacher, 1992). The majority of the research and/or evaluations
completed have been described as the "black box" approach to research (Kolb, 1992). Black box research and/or evaluations are those that consider input and output of a program through testing without addressing how the program works and what factors are most important in making it effective. It is necessary to understand the processes and outcomes of adventure education so that if worthwhile outcomes can be demonstrated, these programs can be enhanced to provide information for future programming and implementation. Adventure educators frequently emphasize the value of the "process" of participating in an activity and de-emphasize the outcome of the activity (Priest, 1990). Hammersley (1992) and Moore (1990) reviewed the status of adventure education programs and encouraged the inclusion of experiential activities and philosophies in the physical education curricula.

Adventure education has been promoted as a possible curricular innovation in physical education (Project Adventure, 1991). The literature suggests a need for some kind of reform in physical education (Bain & Jewett, 1987; Kirk, 1992a, 1992b; Kirk & Tinning; 1990; Locke, 1992; Robinson, 1992; Siedentop & O'Sullivan, 1992; Sparkes, 1990, 1991). Bain and Jewett (1987) report that there has been little consensus in the physical education literature except that physical education will lose its place in the school curriculum "if programs continue without a search for new directions based on sound theory-building" (p. 348). Recently Locke (1992) suggested that physical education is failing in schools because:

> Although people vary in their assessments of the value of physical education, both while they are students and later as adults, a significant number reported having learned to dislike physically active play, to disrespect physical education teachers, and to develop their own capacity to learn movement skills. (p. 363)

Sparkes (1990) cautioned that there is no easy solution to the demise of physical education in schools and promoted the notion that competing ideologies and conflict are inherent with curriculum reform.
Many attempts at innovation in physical education have been unsuccessful (Evans, 1990; Kirk, 1990; Sparkes, 1989, 1990, 1991). Sparkes (1990) found that even when a "progressive ideology" is espoused, the teacher often remains firmly in control of the classroom where didactic forms of pedagogy are often preferred to improved methods. Locke (1992) has argued for a total replacement of the present physical education offering and has supported concerns expressed by Sparkes (1990) that change in content does not mean curricular progress:

We seem to be faced with the paradox of ‘innovation without change’ and ‘change without innovation’ which needs to be explored if we are to understand the nature of change in schools and the part that physical educators play in this process. (p. 28)

The question is how to establish the real as opposed to the superficial change in school programs. An example of a quality innovative program is Westgate Elementary (Stroot, Carpenter, & Eisnaugle, 1991). In contrast to the majority of schools in which academic subjects are given priority over practical content areas (Sparkes, 1990), Westgate has a school curriculum where the physical education program takes a central role. The challenge is to find ways to understand these quality innovative programs and the factors that lead to their establishment and survival. Locke (1992) and Fullan and Miles (1992) have suggested criteria that must be present to bring both change and innovation to schools.

No innovative program or school can be effective without a supportive and committed staff (Locke, 1992; Fullan & Miles, 1992). Teachers' values and beliefs can be a significant factor in the process of change. Values and beliefs are more difficult to describe and operationalize than tasks (Pajares, 1992; Gudmundsdottir, 1990; Nespor, 1987). In the literature on teacher values and beliefs, clear conceptualization, examination of key assumptions, and proper assessment and investigation have eluded researchers. "Although values guide teacher practice, far too many researchers believe that values are 'slippery' or 'subjective' and choose to avoid such difficult or unscientific topics"
(Gudmundsdottir, 1990, p. 44). Argyris and Schon (1974) coined the phrase "theories of action" to describe teaching thought processes. Theories of action are practitioners' espoused theories of how their strategies and techniques combine to produce educational outcomes. These espoused theories, used to describe and justify behavior, are distinguished from the observable behaviors of teachers which Argyris and Schon (1974) named "theories-in-use."

The congruence between practitioners' espoused theories and their enacted theories provides a useful framework for analyzing teachers' values and beliefs. Marland and Osborne (1990) studied the nature of and the relationship between one English teacher's theory of action and her instructional behaviors. During problematic situations in the classroom when the teacher had to make choices between competing values, beliefs, and practices, the teacher felt uncertain, ambivalent, and tense. Although Marland and Osborne (1990) found the structure of lessons and general patterns of behavior were in close congruence with the teacher's theory of action, they concluded that "many teaching behaviors were shaped by her interactive thinking which contained virtually no reference to her theory of action" (Marland & Osborne, 1990, p. 93). In the experiential education literature, Kolb (1992) suggested that theory and practice can be drawn together by evaluating the congruence of the espoused and enacted values of a program. In an adventure program Kolb (1992) found incongruence between the instructor's espoused values and the enacted program, suggesting inconsistency between the program objectives and actual outcomes.

Rauschenbach (1992) studied the relationship among physical education teachers' curricular values, teaching strategies, and student involvement in classes. He reported that "curricular values were the single most important determinant of the type of learning environment that existed in each teachers' setting" (Rauschenbach, 1992, p. 240). He suggested that students' socioeconomic status influenced teachers' curricular values more
than the formal district curriculum. Rauschenbach (1992) utilized the task structure observation system to determine the ecology of the gymnasium.

The task structure observation system has provided a method to systematically observe lessons in schools to compare the congruence between teachers' espoused theories of action and their theories-in-use. The ecological model is an analytical framework for understanding how classrooms function (Doyle, 1979). In Doyle's model the task is the unit of analysis, although the interplay of the instructional and managerial responses to the tasks the teacher introduces determines the classroom ecology. The instructional task system (content related) and the managerial task system (non-content related) were identified as two major task systems in Doyle's (1979) description of the ecology of the classroom. In addition, the existence of a social task system in physical education has been reported by Jones (1992), Griffin (1992), and Ward (1993), although this system is not yet adequately described or understood. Observing how a curriculum is presented through instructional and managerial tasks could provide useful information about the processes of adventure education programs.

Problem Statement and Purpose of the Study

Recently physical educators have described physical education as marginalized and deteriorating and suggest the need for substantive change (Kirk, 1992a; Kirk & Tinning; 1990; Locke, 1992; Schempp, Templin, & Sparkes, 1993; Siedentop & O'Sullivan, 1992). Many have advocated innovative physical education curricula as alternatives (Almond, 1989; Dunn & Wilson, 1991; Grant, 1992; Hellison, 1990; McBride, 1992; Placek, 1992; Robinson, 1992; Siedentop, 1992; Westcott, 1992). However, empirical research to support these new theoretical perspectives has not yet been established. Sparkes (1989, 1990, 1991) has found that not all attempts at curriculum restructuring have been successful; in fact, many reform efforts have resulted
in innovation without meaningful change. Therefore it behooves the research community to examine successful programs; "there is an immediate need to investigate how good programs develop and how they are maintained" (Siedentop & O'Sullivan, 1992, p. 286).

Recently writers have advocated the inclusion of adventure education in the school curriculum (Hammersley, 1992; Knapp, 1989; Miles & Priest, 1990; Moore, 1986, 1990; Project Adventure, 1991; Robinson, 1992). While many educators support the use of such activities in physical education, research on the many claims of adventure education is almost non-existent. It is necessary to examine the purposes of adventure education programs and evaluate the appropriateness of their stated goals and the processes undertaken to achieve these goals.

This study attempted to uncover reasons why Cornwall and Drexel have been and continue to be successful from the perspectives of the school district, administrators, teachers, and students. The two schools in this study, Cornwall and Drexel, are alternative elementary schools with Project Adventure as the focus of their school curricula. Their physical education programs may be viewed as innovative efforts to provide a quality physical education experience using the concepts grounded in adventure education. However, no systematic research had been carried out at these school sites to determine the efficacy of these programs. A multiple methods case study design was utilized to investigate the two physical education programs at Cornwall and Drexel. This study sought to highlight the strengths and weaknesses of these physical education programs. Therefore, the purpose of this study was to describe and interpret the physical education curriculum at Cornwall and Drexel. A secondary purpose was to determine how the physical education program was established and maintained.
Significance of the Study

This study provided insights into how physical educators might conceptualize redesigning programs and implementing change in physical education. Multiple methods were utilized to provide a number of different perspectives from the physical education teachers, principals, classroom teachers, and students. Recent literature suggests that it would be valuable to determine what allows positive change to occur in physical education and what sustains it.

In addition, the study has programmatic significance because it extends the research on the task systems at Ohio State University. This programmatic line of inquiry has generated a research program that has examined the operational curriculum in physical education classes utilizing an ecological framework first proposed by Doyle (1979).

Research Goals and Questions

In accordance with the purpose of this study four research questions drove this inquiry.

1. What were the curricular and organizational characteristics of the alternative physical education program?

2. What was the operational curriculum in the physical education program?
   2.1 How was the content organized and presented through the instructional tasks?
   2.2 What were the students' motor responses during the physical education content?
   2.3 What was the instructional climate and how was it developed?

3. What were the teachers' and students' views of physical education?
   3.1 What were the teacher's espoused educational values and beliefs?
   3.2 What were the students' perceptions of the physical education program?

4. What supported the implementation of the program?
Delimitations of the Study

The subjects and setting were chosen purposefully because of their unusual alternative programs. There are limitations to such a methodology. In case study research there are concerns related to generalizability. The small sample of this study is not intended to be generalizable beyond the given subjects and settings selected. It is the responsibility of the reader to make his or her own generalizations (Erikson & Schultz, 1992).

The interpretation of the data was problematic; as Sparkes (1990) has accurately suggested, values and beliefs cannot be directly observed. When utilizing qualitative methodology where the researcher is the instrument there are inherent limitations: “Both the topics studied and the techniques used in the curriculum research derive from the paradigmatic assumptions underlying the work” (Bain & Jewett, 1987, p. 354).
However, triangulation, member checks, and peer debriefing were used to enhance the trustworthiness of this inquiry.

Definition of Terms

Magnet schools/Alternative schools:
A magnet school can be defined as a school, or a program within a school, that has four characteristics:
1) it has a special curricular theme or method of instruction,
2) it plays a unique role in desegregation of a school district,
3) it relies on voluntary enrollment, and
4) it offers open access to students beyond a regular attendance zone (Blank, 1984).

Outdoor Education:
Outdoor education is an educative process that is based on allowing the learner to get out into life to learn, integrating out-of-school and in-school studies. (East, 1985)
Adventure Education:
Adventure education can be defined as education that "contributes to growth through perceived or actual physical and emotional challenge, followed by the opportunity for self- and group-appraisal and support" (Whitcombe, 1991, p. 6).

Experiential Education:
Experiential education is seen as a broader concept than outdoor education or adventure education because it cuts across different inter-disciplinary lines. Participants become directly involved in and actively interact with the material, other students, and/or teacher followed by an opportunity to reflect and share their perception of the experience (Whitcombe, 1991).

Formal curriculum:
The formal curriculum is documented in content material developed by subject matter experts working in the school system and/or at the state level. These documents may include goals, objectives, and specific content selections that have been approved officially by local administrators or school board.

Functional/Operational curriculum:
The operational curriculum is comprised of the teaching/learning processes which occur in the classroom as witnessed by an outside observer, in this case the investigator in this study (Ennis, 1985).

Perceived curriculum:
The perceived curriculum consists of a teacher's perceptions of what is being taught in the classroom derived from his/her espoused values and beliefs (Ennis, 1985).

Experienced curriculum:
The experienced curriculum is represented by any episodes in the classroom which represent the students' behavior and/or perception of their classes (Erikson & Schultz, 1992).
Teacher values/theories/beliefs:

The teacher's explicit and implicit theories of teaching and learning that consist of personal values and beliefs, content knowledge, pedagogical theories, and pedagogical content knowledge that guide their action (Gudmundsdottir, 1990).

Safety Tasks

Safety tasks were defined as any task designed to facilitate safe activity in the gymnasium. These task were routine in nature, for example, putting on or taking off equipment before climbing the wall or spotting another student.

Cognitive Tasks

Cognitive tasks were defined as tasks that required students to ask or answer questions, problem solve, make decisions, strategize, or discuss information related to lesson content during the lesson or in a debrief. There was no student physical activity during cognitive tasks.

Engaged Time

In the manipulatives and fitness units, engaged time was comprised of informing, refining, extending, applying, and cognitive tasks, while in the climbing and cooperatives units engaged time was comprised of cooperative, safety, or cognitive tasks.
CHAPTER II
REVIEW OF LITERATURE

The purpose of this chapter is to review and critique research related to the major goals of the study. The review presents research, theories, and concepts concerning magnet schools, adventure education, curriculum innovation in physical education, teachers' values and beliefs, and classroom ecology. It is hoped that the review will contribute an understanding and interpretation of the questions addressed in this study.

Magnet Schools

In the early 1970's the first magnet schools in the U. S. were developed in large urban districts seeking to reduce racial isolation of public schools (Metz, 1986). Doyle and Levine (1984) noted that "public magnet schools serve some of the same functions as private schools, but they do so within the public sector" (p. 266).

The precise definition of a magnet school and the distinction between magnet schools and alternative schools is problematic. In the literature academics often use the terms "magnet school" and "alternative school" interchangeably. Raywid (1984) suggested that "definitions are cloudy, so that whether magnet [schools] are a first cousin to alternative [schools] - or a variety of alternative [schools], or vice versa - may depend on no more than who happens to be speaking" (p. 77). In this study the terms "magnet school" and "alternative school" are used synonymously. Characteristics common to most alternative schools are: a distinct administrative unit with its own personnel and program, attention to school climate, attendance based on choice rather than assignment, a
program that is different from other schools in the area, and attention to a broader range of student development concerns than just the cognitive or academic (Raywid, 1984).

Although the distinction between alternative schools and magnet schools is nebulous, it is clear that magnet schools were designed and implemented to promote desegregation in large urban school districts. Following a programmatic line of inquiry, Blank (1989) defined a magnet school as a school, or a program within a school, that has four characteristics:
1. it has a special curricular theme or method of instruction,
2. it plays a unique role in the desegregation of a school district,
3. it relies on voluntary enrollment, and
4. it offers open access to students beyond a regular attendance zone.

Blank's (1989) four characteristics were used to define the alternative schools in this study.

Raywid (1984) characterized magnet schools as providing education for the "whole child." These programs are consciously designed for social growth and such personal development as decision-making ability, moral maturity, and self-knowledge. Student development tends to be viewed as an integral part of the school mission. Group norms are not emphasized as schools try to realize each individual student's potential. According to Raywid (1984), magnet schools often utilize a personal approach to learning so "students must become known as individual human beings to the school staff. They cannot remain uni-dimensional consumers of instruction" (p. 74).

Magnet schools have been viewed as a relatively non-controversial way to accomplish desegregation. Rossell and Clark (1987) stated "magnet schools are schools with a special curriculum or teaching style designed to attract students of different races to an integrated setting" (p. 4). However, magnet schools have evolved beyond their
original purpose of providing voluntary desegregation to offer educational innovation attractive to parents (Price, 1988).

A national study of magnet schools in 15 school districts identified four major factors which contributed to the growth of local interest in magnet schools (Blank, Dentler, Baltzell, & Chabotar, 1983). These were:

1. Developing a voluntary approach to school desegregation;
2. Interest in educational options and diversity in curriculum offerings and in school organization with the objective of improving the overall quality of education in the district;
3. Greater attention to the outcomes of public education, including preparation of students for careers or future education;
4. Renewed concern for the quality of education on the part of community leaders, parents, and educators as exemplified by A Nation at Risk (1983), an influential report of the National Commission on Excellence in Education.

The concept of the magnet school was partly drawn from specialty schools in public education, such as the Bronx School of Science, Boston Latin School, and Chicago Lane Tech, which have offered advanced programs to selected students for many years (Blank, 1989). The difference was that magnet schools would enroll and students based on their interests rather than ability level. A magnet school may focus on particular subjects or careers (such as science, art, or business) or have different instructional approaches (such as an open school or Montessori school). By attracting students with similar educational interests, but diverse abilities and socioeconomic backgrounds, a magnet school could enroll a racially heterogeneous student body and provide a unique educational experience. Thus magnet schools might advance educational equality and improve the quality of education for students (Rossell & Clarke, 1987).

Since the publication of the report from the National Commission on Excellence in Education, A Nation at Risk (1983), the magnet school has been one of the main innovative strategies in the organization of urban schools in the United States (Blank, 1989). Magnet schools have been studied most frequently in the context of various school choice models (Clewell & Joy, 1990). Much of the research revolves around
three major questions: 1) do magnet schools provide a distinctive quality education for all students? 2) how effective are magnet schools in achieving desegregation? 3) what is the most successful method of planning and developing a magnet school? Both the Office of Educational Research and Improvement (Price, 1988) and the State Education Assessment Center (Blank, 1988) have prescribed ten steps in the design and implementation of a successful magnet school program. These steps begin with identifying needs of the magnet school population and conclude by suggesting the need for continual support for the programs following implementation.

Several studies suggested students attending magnet schools generally achieve at higher levels than their counterparts in non-magnet schools (Blank, Dentler, Baltzell, & Chabotar, 1983; Blank, 1989; Doyle & Levine, 1984; Glaser, Larsen, & Nichlos, 1992; Inger, 1991; Raywid, 1984; Rossell & Glenn, 1988; Stroot, Carpenter, & Eisnaugle, 1991). Blank (1984) found that magnet schools could improve the quality of education in urban school districts. “Magnet schools offer a strategy for low cost, highly visible, incremental change that could conceivably transform American education” (p. 270). In a follow-up study Blank (1989) reported data from the National Center of Effective Schools on the same 15 school districts that he had previously studied (Blank et al., 1983). He found that magnet schools improved students' outcomes compared to non-magnet schools with the strongest effects on achievement related to the specific content focus of the school. However, achievement varied by the size of the magnet school and by grade level.

Magnet schools also have been found to have higher attendance rates, fewer behavioral problems, and lower suspensions and drop out rates than comparable non-magnet schools (Blank, 1984, 1989; Clark, 1988; MAGI, 1985; Stroot, Carpenter, and Eisnaugle, 1991). Although there is consensus that magnet schools provide quality education for students, researchers have expressed concern that self-selection of students
to schools affects research results. Rossell (1985) reported that "the literature is characterized by anecdotal, first person descriptions of the curriculum and interracial contact" (p. 7). There have been few systematic analyses that take into account the effect of self-selection, though there is some evidence that more able students attend magnet schools (Blank et al., 1983). However, Clewell and Joy (1987) found that in their evaluation of an all-magnet school system, the achievement of all students improved after the implementation of the magnet plan.

One characteristic of magnet schools is a theme or focus. Evaluations of several different magnet programs concluded that effective magnet schools have a strong program identity (Blank, 1984, 1989; Clark, 1988; Clewell & Joy, 1987, 1990; MAGI, 1985; Rossell & Clarke, 1987). However, Metz (1986) suggested that schools with distinct programs can be forced to standardize or "homogenize" their character to appeal to all parents in order to increase enrollment.

Magnet schools have also been successful in achieving racial balance (Chabotar, 1989; Clewell & Joy, 1990; Blank, 1984; MAGI, 1985; Metz, 1986). Magnet schools are considered a relatively non-controversial way of accomplishing desegregation and as the "greatest practical impetus to the extension of public school choice" (Rossell & Glenn, 1988, p. 77). Rossell and Clarke (1987) found that magnet schools have been effective in helping achieve the desegregation goals of school districts. They noted that comprehensive voluntary plans like open enrollment, majority to minority transfers, and magnet schools ultimately produced more interracial exposure than mandatory plans like pairing, clustering, and rezoning where students were assigned to schools to desegregate the system. Rossell & Clarke (1989) said magnet schools were "the most successful voluntary technique in motivating white students to attend formerly minority schools" (p. 101). Several other studies have argued for the effectiveness of magnet schools in desegregating school systems (Alves & Willie, 1987; Blank, 1984, 1989; Chabotar,
1989; Clewell & Joy, 1987, 1990; Dentler, 1991; Rossell & Glenn, 1988). Under the most common system, controlled choice, students are allowed to enroll in preferred schools as long as racial balance is maintained at the school (Alves & Willie, 1987).

McMillan (1980) and Rossell (1979) addressed the danger of racially balanced magnet schools resulting in imbalanced non-magnet schools. Alves & Willie (1987) noted that magnet schools have been accused of placing an unfair burden on inner-city residents. In particular, minority groups have been disadvantaged by relocation to make room for white students in the inner-city magnet schools (Alves & Willie, 1987; Rossell, 1987). Selective magnet schools have been accused of “creaming off” top students from other schools, thus weakening non-magnet schools in the district (Winborne, 1991). Winborne (1991) surveyed a large population of principals (n=118) from the mid-western states and concluded that more innovative programs to attract students to inner city school districts are needed, not necessarily more magnet schools.

Magnet school programs have been criticized for not providing equal access for all students and for absorbing an unfair share of resources (Winborne, 1991). Chabotar (1989) found that, in general, magnet schools cost more than non-magnet schools; however, most of these extra costs tended to be fixed and after the initial outlay of time and money there were few future requirements. As magnet school enrollments increased, their per-pupil costs decreased and were often below the per-pupil cost of non-magnet schools (Chabotar, 1989). In a nationwide study of 45 magnet schools, Blank (1984) found the average per-pupil cost was approximately $59 higher than the average per pupil cost for non-magnet school. These costs also decreased after the start-up years.

Although much of the research on magnet school effectiveness has focused on their success in achieving racial balance and providing high quality education for all students, magnet schools also appear to be an acceptable alternative for enhancing parent choice. A 1986 Gallop Poll revealed that parents rated magnet schools highly (Gallop,
Clinchy (1985) argued that parents can choose the kind and quality of education desired for their children at magnet schools and this appealed to them because it gave them greater control over their children's educational lives. Rossell and Glenn (1988) reported that parent choice in Cambridge Public Schools has produced greater interracial exposure and increased student achievement more than the earlier mandatory reassignment plan. Rossell and Glenn (1988) compared their findings to Clewell and Joy's (1987), reporting that Montclair, New Jersey, with a similar sized school district (n = 5,000 students), showed positive experiences in magnet schools. Rossell and Glenn (1988) advocated making schools better, not superior. Making schools superior is to run the risk of creating a dual system of elite magnet schools and mediocre non-magnet schools. Glaser, Larsen, and Nichlos (1992) found that an alternative, magnet school education intervention was seen to be positive in determining students' achievement as measured by grade point average (GPA), standardized test scores, and student completion of formal education programs. They found that parental investment of time was a common denominator explaining student success over time.

Blank (1984) reported three characteristics of high quality magnet schools:

1. an innovative, 'entrepreneurial' principal, who exerts strong leadership in motivating staff and students and in developing curriculum;
2. a magnet theme, a curriculum, teaching methods, and staff capabilities that are highly coherent, resulting in a strong program identity;
3. some degree of 'special treatment' (or flexibility) with regard to district rules, conventions, or procedures. (p. 271)

These findings have been supported elsewhere in the literature (Clark, 1988). Doyle & Levine (1984) echoed the value of a coherent theme, saying "schools with strong curricular themes permit students and teachers to form communities that are characterized by shared values - communities that transcend differences in socioeconomic background, race, and ability level" (p.269).

In the physical education literature one study has reported the positive outcomes of physical education as an alternative focus. Stroot, Carpenter, and Eisnaugle (1991)
suggested that Westgate school, a magnet school with a focus on physical education, is an example of an effective “school that works.” Measures of effectiveness were high attendance rates, positive reports from parental and teacher surveys, and high academic scores on school district standardized tests. Physical education was viewed as a key component in the school program, was embedded in the curriculum, and was seen as a prominent motivator of students at the elementary level. Westgate utilized an instructional approach in which physical education, critical thinking, health, fitness, and written communication skills were integrated into the academic curriculum. “The Westgate philosophy is based on educating the total child - physically, intellectually, and emotionally” (Stroot, Carpenter, & Eisnaugle, 1991, p. 49).

Several academics have suggested that magnet schools contain the seeds for improving all American public schools. Clinchy (1985) suggested that "we should continue moving forward to increase the number and range of magnet schools until we have a free-market system of public schooling, based on educational diversity and parent choice" (p. 43). With regard to the culture of schooling, magnet schools provide an example of how diversity, choice, and commitment can empower teachers and students to perform more effectively.

Magnet schools can take many different foci, such as programs in art, science, foreign languages, or physical education. One curriculum direction has been to develop adventure education as the central unifying school focus; however, to date there has been little documented research in this area.

**Adventure Education**

Because Cornwall and Drexel, the two magnet schools in this study, had adventure education as the foundation of their school wide curriculum, the literature on
adventure education will be reviewed. To place this area in context, a discussion of the broader areas of experiential education and outdoor education are included.

Experiential education is the umbrella term that incorporates both outdoor education and adventure education. Experiential education was grounded in the work of Dewey (1916, 1938), who believed that in the absence of experience, one would possess "half-observations . . . An ounce of experience is better than any theory simply because it is only in experience that any theory has vital and verifiable significance" (Dewey, 1916, p.169). For Dewey, experience was more than "mere activity" without thought. His purpose was to use experience to change individuals by encouraging them to reflect and become aware of how actions were connected to the resulting consequences.

Chapman (1992) defined experiential education as a learning environment where students “need to be active” in their learning. The teacher is seen as a guide to facilitate discovery learning or problem solving activities, and to advance the concept that there are many ways to solve a problem. Chapman (1992) suggested that experiential education “is an approach that has students actively engaged in exploring questions they find relevant and meaningful, and has them trusting that feelings, as well as thinking, can lead to knowledge” (p. 18). Proudman (1992) promoted the notion of experiential education as “transformational” (p.23), suggesting that there is a change in behavior that occurs as a result of the experience. Experiential education engages the learner more actively in learning, in contrast to the relative passivity of much classroom learning (Hamilton, 1980; Westheimer, Kahne, and Gerstein, 1992). Whitcombe (1991) defined experiential education as a process of learning by which participants become directly involved in an active interaction with the material to be learned, followed by an opportunity to reflect and share what they gained from the experience. As a broader concept than adventure education and outdoor education, experiential education cuts across different inter-disciplinary lines. Teachers are seen as facilitators who encourage students “to master the
basic skills of reading, writing, speaking, listening, and problem solving” (Whitcombe, 1991, p. 6).

Included within experiential education is the area of outdoor education which Priest (1990) defined as:

an experiential method of learning with the use of all senses. It takes place primarily, but not exclusively, through exposure to the natural environment. In outdoor education the emphasis for the subject of learning is placed on relationships concerning people and natural resources. (p. 23).

East (1985) provided a broad definition of outdoor education. "Outdoor education is an educative process that is based on allowing the learner to get out into life to learn, integrating out-of-school and in-school studies” (p. 23). Outdoor education may include such diverse topics as environmental ethics, values, technical skills, leisure activities, and the development of a sense of community (Hammerman, 1985). Darst and Armstrong (1991) classified outdoor education into familiar categories of low risk (fishing, cycling, and orienteering), medium risk (backpacking, cross-country skiing, and horseback riding), and high risk activities (rock climbing, white water canoeing, and winter camping). Hammerman (1985) reported that outdoor education has been a part of public education in the United States since the 1930's.

In the literature there is often no clear distinction between outdoor education and adventure education, but generally writers place adventure education as a sub-category of outdoor education. Priest (1990) wrote that traditionally two branches of outdoor education have been defined as environmental education and adventure education. Environmental education is concerned with two relationships, the ecosystemic and the ekistic. The ecosystemic refers to the interdependence of living organisms and the ekistic refers to relationship between human society and the natural resources of the environment. To Priest (1990) adventure education was concerned with relationships of an interpersonal and intrapersonal nature. Interpersonal relationships referred to the ways
people communicate, cooperate, and trust; while intrapersonal referred to how individuals relate with the self in terms of self-concept, spirituality, and confidence.

Whitcombe (1991) defined adventure education as an activity that "contributes to growth through perceived physical and emotional challenge, followed by the opportunity for self- and group-appraisal and support" (p. 6). He stated that adventure education activities occur outside schools and involve physical challenges and/or risks and have a discovery or problem solving component. Rohnke (1986) noted that adventure education activities should be considered as having uncertain outcomes with some physical or emotional risk involved, but should not be closely related to the concepts of fear, danger, and "ultimate disaster."

Raines (1989), in an historical perspective of adventure education, recognized George Hebert (1895-1903) as the first advocate of adventure-type activities. As a military officer Hebert utilized adventure activities to train the French Navy. The origin of much of the modern adventure education philosophy was founded on the work of German Kurt Hahn who developed the Outward Bound School in Aberdovey, Wales in 1941 to prepare British merchant sailors for World War II. Greene & Thompson (1990) noted the name derived from the times when a ship "left the safety of the harbour for the open sea, [and] seaman said it was 'outward bound'- bound for the unknown, for challenge, and adventure" (p. 5). Outward Bound was introduced to the U. S. in the 1960's. Its goal was to provide challenge and adventure activities for young people in the outdoors where they could develop responsibility and a sense of service to the community.

There have been arguments for the inclusion of outdoor education, adventure education, and/or experiential education in school curricula (Darst and Armstrong, 1991; Latess, 1986; Hammersley, 1992; Moore, 1986, 1990; Robinson, 1992; Westheimer, Kahne, and Gerstein, 1992). Advocates have suggested benefits ranging from the
development of physical fitness and motor and cognitive abilities to increased social and emotional skills, though there is little research to support these claims.

The first documented attempt to integrate adventure education into the school curriculum was made in Hamilton, Massachusetts in the early 1970's. Jerry Pieh, the principal of Hamilton-Wenham Regional High School and teacher Gary Baker wrote a three year development proposal to the Federal Office of Education to mainstream the Outward Bound process into their public school setting. They called this new program Project Adventure (Project Adventure, 1991). In 1971 Project Adventure was funded for the development and evaluation of new and innovative educational programs. This allowed Pieh to hire staff with Outward Bound experience, and teachers, Project Adventure staff, and administrators wrote and experimented with the curriculum. The curricular focus was tenth grade physical education, but English, history, science, theater arts, and counseling were also modified to incorporate portions of the Project Adventure model.

Project Adventure utilized much of the philosophy and many of the strategies of Outward Bound while developing an action-oriented curriculum integrating content from several academic disciplines. Students were involved in physically demanding activities in the outdoors, such as rock climbing and orienteering, as well as personally demanding activities, such as organizing the townspeople to recycle and planning and teaching a group in a tutoring program. The original goals of Project Adventure were to:

1) Actively involve students in challenging situations with an element of personal and/or physical risk which can be reasonably overcome and, thus, lead to an enhanced self-concept and pride. For example, white water kayaking, initiating a conversation with a stranger, or writing a poem can be perceived as risk-taking adventures.

2) Develop an awareness of group processing and skills in working with groups in a supportive atmosphere. Students are placed in groups to carry out problem solving activities as well as explore urban areas to gather information and formulate opinions about them.

3) Develop initiative and enthusiasm among students and combat passivity.

4) For teachers Project Adventure had the additional goal of developing an awareness of the variety of teaching and learning styles and to give experience
dealing with students (Project Adventure, 1991)

Expansion of the Project Adventure philosophy and curriculum was rapid. Project Adventure trained high school teachers to develop and implement experiential curriculum units and also worked with community agencies. Project Adventure was awarded an Educational Services and Evaluation Agency (ESEA) Title III Grant at the high school in Hamilton Massachusetts (Project Adventure, 1991). In the first year Project Adventure concentrated on a single high school, while in the second year five area high schools and two community agencies became affiliated members. In the second year (Fersch & Smith, 1972) 231 tenth grade students were tested on a battery of six instruments: the Tennessee Self-Concept Scale; a School Climate Survey; a questionnaire designed to measure students' leisure time activity and attitudes towards physical education classes; the Independent School Association student description scale designed to measure students' participation, understanding and personal responsibility; the American Association of Health, Physical Education, and Recreation (AAHPERD) Youth Fitness Test, and the Cooper's 12 minute run; and the Rotter Scale of Internal versus External Control of Reinforcement. Based on these instruments and unstructured interviews of parents and students, Fersch and Smith (1972) reported that Project Adventure was successful in achieving its four goals in its first two years. They indicated improvements on the self-concept scale, level of students' interaction and involvement, physical functioning, and the quality of life within the school. The qualitative data from parent and student interviews supported the quantitative inventory assessments and indicated that students had "more active involvement, increased positive identity (at least for females), and higher achievement motivation" (Fersch & Smith, 1972, p.20). As a result of this evaluation the Federal Office of Education recognized Hamilton-Wenham School District as a National Demonstration School Program and provided funding as
part of the National Diffusion Network for dissemination to public schools in the U. S.
(Project Adventure, 1991).

In addition to the adventure education program, the Massachusetts State Department of Education provided funding from 1980 to 1983 for the development of adventure based counseling (ABC). The ABC process was integrated into the Project Adventure curriculum at Hamilton-Wenham. The evaluation report claimed that students completing an adventure based counseling program significantly increased their self-concept as measured on the Tennessee Self-Concept Scale and the Piers-Harris Children’s Self Concept Scale (Lieberman & De Vos, 1982). However, recent research has indicated that gains from adventure education experiences in non-school settings were diminished when at-risk students returned to their home environments (Hutton Durgin & McEwen, 1991).

Karl Rohnke, the former director of Project Adventure, disseminated the program as a physically exciting and acceptable philosophy toward the education of the total person (Rohnke, 1989). He stated that Project Adventure is an experiential-based learning process in which adventure and challenge are infused into the academic curriculum through subjects such as reading, language arts, mathematics, science, social studies, health, political education, and art. Rohnke (1986) summarized Project Adventure as a holistic educative process driven by four learning goals:

1) To increase the participant’s sense of personal confidence,

2) To increase mutual support within the group,

3) To develop an increased level of agility and physical coordination, and

4) To develop an increased joy in one’s physical self and in being with others.

Through an atmosphere of cooperation, challenge, risk, trust, and problem solving students were encouraged to think independently while working with others. Project Adventure utilized the concept of adventure education to promote the education of “the
total student by developing each child mentally, physically, emotionally, and socially to produce an effective citizen for our society” (Project Adventure, 1991, p. 6). For Rohnke (1986), challenge was the center of this “do-it-yourself, with guidance, approach to learning” (p. 69).

Proponents of Project Adventure have made many claims about the positive impact of the model. Recently scholars in the field have highlighted the need for research to support the many claims for adventure education, outdoor education, and experiential education (Hanna, 1992). In the opening editorial of the August, 1992, edition of the Journal of Experiential Education, Gass claimed that experiential educators are experience-rich, but theory-poor. Wurdinger (1990) pointed to the lack of a common foundation to conceptualize experiential education within a theoretical framework. There is a growing awareness of the need for research in all of the areas of experiential education (Hanna, 1992; Miles & Priest, 1990; Rademacher, 1992) to improve programs, ground them within a theoretical framework, and make inter-disciplinary connections.

Riddick, DeSchriver and Weissinger (1984) reported improved rigor in experiential research published in the Journal of Leisure Research, but noted an absence of theoretical framing and highlighted the need to broaden research methodology to include experimental, quasi-experimental and/or qualitative research in addition to the dominant survey research. Hanna (1992) concurred, suggesting that experiential education is an inter-disciplinary field in the process of developing as a field of inquiry. Traditionally, research has tended to be descriptive, exploratory, and disciplinary based, while more recent studies have tended to be more conceptually-based, explanatory, and multidisciplinary. Hanna (1992) was encouraged, believing these changes were collectively leading to a stronger body of research. However, she pointed out a number of chronic design and methodological problems have limited the body of research and the power and generalizability of study results. Hanna (1992) emphasized the following
eight reoccurring problems that plague interpretation of research: inadequate conceptual or theoretical grounding, unsophisticated research designs, an over-emphasis on descriptive reporting, few explanatory model testing studies, inadequate attention to the effects of program components, inadequate triangulation of methods to establish validity, the overuse of self-report measures instead of behavior measurement, and the lack of commitment to research and/or inquiry and an over-emphasis on practice.

"Unfortunately, the conscious avoidance of discussion of research designs and methods does little to attract the interest of other researchers, and hence to further the body of knowledge" (Hanna 1992, p. 233). Hanna (1992) summarized the basic issues by stating:

We need more conceptualization and different forms of measurements that capture and reflect the essence of the experience. Pluralistic (multi-method) approaches which include triangulation of a variety of quantitative and/or qualitative methods may provide designs where the strengths of methodologies can be combined. [This change] would increase validity and reliability, and hence increase confidence in study results (p. 233).

Qualitative techniques have been suggested as viable methodologies to study all areas of experiential learning (Chenery, 1987; Glancy, 1986; Hanna, 1992; Henderson & Bialeschki, 1987; Rademacher, 1992; Rowley, 1987). The research focus appears to be changing to an interpretive approach to analyze the "process and experience" with an emphasis on the "how" of experiential education (Rademacher, 1991), rather than only a description of programs and/or experiences. However, so little research exists that there is a need to describe what is being offered in programs.

Many topics have been of interest to those studying the various areas of experiential education, but few lines of inquiry have developed to provide a research base. The experiential education diversity of questions under study can be noticed with a superficial glance at the major journals. Some examples of inquiry are: the physiology effects of outdoor adventure (Bunting, 1992), qualitative inquiry (Legault, 1992), the utilization of corporate and business training adventure experiences (Dixon & Priest,
adventure education in student teaching internships (Garvey & Vorsteg, 1992),
group development through experiential education (Ewert, 1992), adventure based
counseling (Hutton-Durgin & McEwen, 1991), and adventure education for special
populations (Burney, 1992). In spite of the lack of depth, theoretical models have
attempted to describe adventure education.

Robinson (1992) developed The Risk-Sport Model (RSM) to explore and
describe risk-sport school curriculum activities and student responses to such activities.
These activities included mountaineering, rock climbing, and white water kayaking and
differ from traditional school sports by posing real or perceived physical danger within a
the RSM could add another dimension to the physical education curriculum. Employing
the RSM as an analytic framework, Robinson (1992) attempted to develop an improved
“understanding of the complex nature of the risk-sport experience and the potential value
such experiences hold for personal growth, meaningful social interaction, and social
change” (p. 88). The model’s emphasis was on cooperative settings that strive to
generate enjoyment, personal meaning, and popular participation. Robinson (1992), in a
similar manner to Mortlock (1984), suggested that those who are involved in risk sports
begin at an initial level of involvement and move in a pre-determined fashion to the next
level of ability. The five stages of the model consist of: initial involvement (including the
need for stimulation, autonomy, and the social environment), cognitive appraisal,
decision making, performance and interpersonal experience, and intuitive-reflective
appraisal. Robinson (1992) suggested that if incorporated into a physical education
curriculum, it should be an elective component of the program, but he did not provide any
details on its implementation in a school curriculum.

Kolb (1992) described an adventure education model with an educative
perspective and suggested that theory and practice can be drawn together. His research
was grounded in the work of Argyris and Schon (1974), who have conceptualized theories of action and theories-in-use. Theories of action are explicit statements of how strategies and techniques combine to produce outcomes. Theories-in-use, by contrast, underlie a practitioner's observable behavior and include other informal and personal interpretations and responses to program situations. Kolb (1992) evaluated an adventure-based professional development course offered to MBA students by comparing the espoused values of the instructor to his actions. He found that although the program was offered primarily as a team-building exercise, the students experienced the program at the personal development level, focusing on their individual feedback. The MBA students' experience of the adventure-based program did not match the planned team-building component of the program. Speaking from an adventure education perspective, Kolb (1992) made an attempt to demonstrate to educational practitioners that underlying their actions were elements of theory. He argued that paying more attention to theoretical patterns could enhance educational evaluation and practice.

Recently in physical education there has been a call for changes in the present curricula being offered (Bain & Jewett, 1987; Dunn & Wilson, 1991; Grant, 1992; Kirk, 1992a, 1992b; Kirk & Tinning; 1990; Locke, 1992; Robinson, 1992; Schempp, Templin, Sparkes, 1993; Siedentop & O'Sullivan; Sparkes, 1990, 1991). Hammersley (1992) reviewed the status of adventure education programs and has encouraged the inclusion of experiential activities and philosophies in the physical education curricula. Knapp (1989) suggested that outdoor activities can contribute to growth in the affective domain of learning. He defined the affective domain as including "student interests, appreciations, attitudes, values, and intrapersonal adjustment skills" (Knapp, 1989, p. 41). Jewett and Bain (1985) suggested that physical educators are concerned with personal and social growth and the development of intrapersonal and interpersonal skills. Priest (1990) suggested if physical educators are concerned with such growth and with
skills like raising self-esteem, taking appropriate risks, communicating, empathizing, and expressing appropriate feelings, they should consider using adventure education because these attributes can be acquired through this approach. Knapp (1989) said:

If we want students to be able to solve complex problems, make difficult decisions, and practice desirable values, we must give them opportunities to learn in the proper context and under our guidance. [People] develop self-esteem, attitudes, values, and other affective skills gradually over time. (p.42)

While many educators support the inclusion of such activities in physical education, research on the claims of adventure education is almost non-existent. The one study to date by Kolb (1992) suggested that while an instructor held certain goals for the course, students focused on different benefits. Clearly, more research needs to be completed if claims for this method of education are to be supported with more of an evidential base.

Reform and Restructuring Curriculum

Adventure education is not the only form of curricular innovation in physical education or general education. This portion of the review begins with a description of major reform movements in the U. S., followed by a review of both existing and innovative curricula in physical education.

General Reform

The beginning of the reform movement followed the publication of A Nation at Risk by the National Commission on Excellence in Education (1983). In response to this report, Liberman and Miller (1990), Goodlad (1984), the Holmes Report (1990), and Sizer (1985, 1992) presented educational reforms for schools and universities. Lieberman and Miller (1990) believed rethinking American education was essential. Schools must be places where the learning environment stimulates children and provides professional growth and development for teachers. There should be a balance between
the action of teaching and learning and reflection on what was done, who benefits, and
what should be improved next time (Lieberman & Miller, 1990). Tom (1986), Hawley
(1986) and Smith (1986) suggested that an inherent weakness in the reforms was that
they did not include detailed pragmatics. Siedentop (1992) agreed with this perspective,
pointing out that "what was lacking in the reform documents and the ensuing debate were
mechanisms for changing schools" (p. 69).

The policy analysts and school reformers have written in detail concerning the
necessity to increase "active learning," "relevance," and "personalization" (Sizer, 1985;
1992, Goodlad, 1984). In addition they wrote about a fragmented curriculum being an
impediment to a more "holistic" and "engaging" education (Sizer, 1985; 1992; Goodlad,
1984). Goodlad (1984) found that over 70% of talk in classrooms was teacher talk and
that students generally had little opportunity to be involved in the learning process.
Westheimer, Kahne, and Gerstein (1992) have argued that experiential education (and its
sub-category adventure education) provides a philosophical and educational perspective
that is closely aligned to many of these reform initiatives with its emphasis on
experiencing activity, cooperation, challenge, risk, and problem solving. They noted that
"whereas traditional approaches . . . rely on abstraction and result in student passivity,
experiential approaches encourage active participation in meaningful, task-oriented
activities" (Westheimer, Kahne, & Gerstein, 1992, p. 45).

Curriculum texts in physical education

Curriculum has not been a popular area of inquiry in physical education and few
curriculum texts are available. Three texts that provide different perspectives on physical
education curriculum will be briefly discussed: Kane (1976), Jewett and Bain (1985), and

Kane (1976) suggested that the purpose of curriculum development was to "take
the physical education teacher through the current controversies, debates and speculations
about curriculum renewal in order to provide a background for an informed participation" (p.11). In England at that time physical education had developed from simple military drill to multiple activity base programs.

Jewett and Bain's (1985) theoretical analysis of physical education curriculum proposed that teacher value orientation was the most significant characteristic for classifying and differentiating among curriculum theories. They suggested that the dominant value orientation in physical education curriculum practice had been the disciplinary mastery approach to teaching, which emphasized the mastery of movement fundamentals, sports skills, and acquisition of physical education knowledge. "Educators are concerned with guiding young people in acquiring the tools they need to participate in their cultural heritage and in attaining access to the best wisdom of the ages" (Jewett & Bain 1985, p. 25).

Kirk and Tinning (1990) used a critical inquiry perspective to analyze physical education's curriculum and culture. They attempted to address knowledge in physical education and how it is developed in different contexts, who holds the power, and who benefits from the process. Kirk and Tinning (1990) addressed issues such as scientism, which they described as "an unquestioning belief in the status of quantitative, objective information focusing on the physical and physiological functioning of the body, as the ultimate category of knowledge of relevance to physical education" (p. 10). Gender, equity, the place of competition, the construction of knowledge, the hidden curriculum, and innovation in physical education were other topics addressed.

In Kirk and Tinning (1990), Evans (1990) elaborated on ability, position, and privilege in school physical education, stating that "the lives of teachers themselves are shaped, created and constrained in the contemporary conditions of schooling and historically over time" (p. 140). He was interested in the opportunities of physical education teachers and how these processes were related to educational, cultural, and
political discourses in society. Looking specifically at two British innovations in physical education, Evans (1990) described Teaching Games For Understanding (TGFU) and Health Related Fitness (HRF). TGFU was presented as an alternative to traditional games that do not offer equity of experience because poor physical skill acts as a barrier to further learning. . . . Mini-games with adapted rules and equipment are more likely to provide all pupils with opportunity to make decisions concerning their play and the game itself, whatever their physical ability. In this context all pupils will be given the opportunity to take responsibility for their learning and to experience the satisfaction of achievement and success. It is these experiences, achievement, satisfaction, enjoyment which will form the motivational basis for a future of post-school involvement in physical recreation and sport. (Evans, 1990, p. 156)

Another area designed to avoid the creation of winners and losers was Health Related Fitness. In this innovation the principle of equity of outcome is stressed even more strongly. The tone is against selection and the creation of ability hierarchies. . . . At the heart of the innovation is a concern for the development of each and every individual's "health-career," their "positive self-esteem," and "decision making skills." (Evans, 1990, p. 156)

Evans (1990) explained that HRF focused on fitness testing, measurement, and assessment of each individual's health. He suggested that HRF should provide "the means of physical or psychological repair," it is a way of helping children come to terms with the traumas of Western urban living, or a system of relief for stressed youngsters" (Evans, 1990, p.157). Evans (1990) commented that TGFU and HRF represent curriculum innovations that attempt to inform students about the important post-school life of work and leisure. This "new physical education" emphasized the intellectual and cognitive elements of physical activity. Nonetheless, Evans (1990) provided a caveat. "Effecting change in physical education of a sort that would empower children and teachers irrespective of their social class, race, or gender to experience equity of opportunity in their work, health, and physical education will not be an easy, quick or comfortable endeavor" (p. 162).
Almond (1983, 1989) has strongly supported the notion of HRF saying that schools should foster a concern for an active lifestyle and individuals should learn to look after themselves. However, he has reported that physical educators do not appear to value the area of health related fitness. "I believe that we have been so involved in promoting competitive sport that it has blinded us to the possibilities and potential of other and different perspectives" (Almond, 1983, p. 35). However, from a critical perspective Sparkes (1989) suggested that HRF has not lived up to its expectations. Superficial changes have occurred in the physical education curriculum but have not been accompanied by the ideological transformation of teachers. "It is possible for teachers to adopt a curriculum package and experiment with a range of teaching styles without challenging the fundamental ideologies that inform their practices" (Sparkes, 1989, p. 60).

The Reform Process

Sparkes (1990) was interested in this process of change, specifically in the efficacy of rational planning to bring about change. He investigated the attempt of one physical educator to implement innovative programs in the curriculum "which involved the abolition of streaming by ability in games lessons in favour of mixed-ability grouping and the inclusion of more activities at the expense of team sports" (p. 200). These innovations were closely aligned to the TGFU and HRF. Alex, the head of the physical education department, encountered opposition to his plans from the other staff members. He was unable to persuade other teachers to adopt his curriculum plan and eventually resorted to political tactics to outmaneuver his fellow staff members through controlling the decision making process and utilizing knowledge and rhetoric. Although Alex was successful in the department adopting the new physical education program, Sparkes (1990) suggested that in this instance there was innovation without change. He believed that any group of individuals possess multiple realities, and therefore "different value
positions have a persuasive influence upon the practice of teachers in schools and they also inform the way that they subjectively assess the costs and rewards of change" (p. 195).

Sparkes (1990) viewed departmental meetings as "arenas of struggle" where the staff members' value systems clashed in the innovative process initiated by Alex and where "change as a dynamic process is characterized by conflict, struggle, negotiations, and compromise as individuals and subjects strive to enhance their interests" (p. 220). Sparkes (1991) suggested that conflict is inherent in the process of change and "some will define themselves as winners and some as losers in the process; this means that rarely will change be introduced without some form of overt or covert conflict" (p. 20). Within the sub-culture of physical education and the physical education profession Sparkes (1990) found that teacher control of curriculum, student achievement, teacher competence, status, and commitment were important concerns for successful innovation and change in physical education programs.

Sparkes (1991) suggested that the notion of "change is an extremely complex process and not just a simple end product" (p. 2). Even if an innovation is adopted there may be no "real change" (Sparkes, 1990). Change can be at a superficial level, so Sparkes (1991) recommended that we view innovation as a multi-layered and multi-dimensional process. Sparkes (1990) commented that in real change:

the key dimension for consideration is the transformation of beliefs, values, and ideologies held by teachers that inform their pedagogical assumptions and practices. These lie at the heart of real change and without such transformations we have innovation without change. (p.2)

This notion of innovation without change was supported by Kirk (1990), who attacked the use of packaged curricula which he believed had failed to provide substantive change in the curriculum. Traditionally curricula have been prepared and produced distant from school contexts with little guidance available for the implementation of
programs. Curriculum developers who produced standardized curriculum packages that would be implemented over huge geographical areas underestimated the requirements of communicating their intentions to teachers. In addition, "the 'technical curriculum form' of the objectives approach itself ran into problems, particularly in subject areas in the humanities and arts where the subject matter did not lend itself to the prespecification of learning outcomes or quantitative assessment techniques" (Kirk, 1990, p. 413).

Locke (1992) agreed that many attempts at reform were ineffective, so he set out ten strategies for successful innovation. School administration must work with teachers to identify problems, plan collaborative solutions, and carry out them out. "Leadership [must] understand change not as something you do to people, but something they must do for themselves" (Locke, 1992, p. 365) Second, although teachers are capable of change, they may be so embedded in the demands of their work as teachers, they may miss opportunities for change or signs of serious dysfunction. Thus, teachers must have workplace conditions that allow them to work together, give them time for reflection, and offer them inservice help. Locke (1992) also said teachers must collaborate on designing and testing ideas and there must be provisions for helping everyone through the process of changing. In addition, good change must begin with careful planning, but not highly detailed scripts, because "when planners invest too much they can become wedded to their scripts - and less capable of the inevitable adjustments that must be made" (Locke, 1992, p. 366). Further, the success of any new program depends on teachers who believe in it and are ready to remain committed to the proposed innovation despite the difficulties that occur along the way. There must also be financial commitment; "any attempt to implement a program that is substantially different from the dominant model will be resource-hungry" (Locke, 1992, p. 367). Next, any change must be embedded in the organizational context of the school, which requires adjustments in other parts of the system (for example, a change in program objectives requires change in content,
facilities, personnel assignments, and so on). Further, it is most effective if change comes from insiders (particularly teachers) who will be there for the long haul rather than outside consultants who are just passing through. Lastly, early success is necessary to sustain the effort as is continuing investment in the innovation. "New programs have to be adjusted to meet changing circumstances, the newcomers to the system have to be carefully inducted into 'what it is and how we do it,' and even those who designed the program need the vision refreshed and their commitment renewed" (Locke, 1992, p. 368). Locke (1992) noted that physical educators were hesitant to propose change from the set routines they had established. He concluded that "It may be that in a marginalized subject area, existing regularities hold such powerful meaning that letting go will present serious difficulty" (p. 370).

Fullan and Miles (1992) also suggested what needs to happen to make reform work. First, change is a learning process and those involved must be given time to assimilate new ideas. Difficulties must be seen as a natural part of the process which can lead to creative solutions. Further, there "can be no blueprints for change . . . Even the development of a shared vision that is central to reform is better thought of as a journey in which people's sense of purpose is identified, considered, and continuously shaped and reshaped" (Fullan & Miles, 1992, p. 749). In addition, change is "resource-hungry," demanding resources for training, new materials, new space, and time. Next, effective change requires substantial effort to manage. "Everyone has to learn to take the initiative instead of complaining, to trust colleagues, to live with ambiguity, to face the fact that shared decisions mean conflict. Principals have to rise above the fear of losing control" (Fullan & Miles, 1992, p. 751). Further, reform must focus on the components of the system, like curriculum, teacher development, community, etc. and on the deeper issues of the culture of the system. Finally, local implementation by everyday teachers, principals, parents, and students is the only way that change occurs (Fullan & Miles,
Researchers and schools have attempted to bring such change to physical education.

**Suggested curriculum innovation in physical education**

**Model of critical thinking**

McBride (1988, 1992) suggested taking a closer look at "critical thinking" in physical education, because he believes physical education provides a rich opportunity for fostering critical thinking (McBride, 1992). He defined critical thinking as "reflective thinking that is used to make reasonable and defensible decisions about movement tasks or challenges" (McBride, 1992, p. 19). McBride (1992) argued that fostering critical thinking is valuable to students since students need to perform higher-level thinking skills in order to make the kinds of decisions necessary to survive in a rapidly changing world. McBride (1992) suggested:

> For critical thinking to occur, the learner must first be given the opportunity to inquire. Only during inquiry can critical thinking skills be activated through such cognitive functions as comparing, contrasting, drawing inferences, and testing hypothesis . . . The teacher must relinquish some of the responsibility for analyzing, evaluating, diagnosing, and providing direct feedback to the students . . . The learner needs to assume responsibility for thinking for himself or herself. In effect the teacher weans the students from the traditional stimulus-response model, where learning chiefly occurs by drill and repetition, to a situation where the students actively pursue solutions and engage in critical thinking. (p. 117)

He proposed that critical thinking for students consisted of four components: cognitive organizing, cognitive action, cognitive outcomes, and psychomotor outcomes. Cognitive organizing refers to recognizing the nature of the critical thinking problem or challenge. "A common trait separating effective critical thinkers from their less effective counterparts is the ability to initially concentrate on identifying the correct problem" (McBride, 1992, p. 118). Cognitive action refers to the ability to use the information generated during the organizing stage and "to refine responses, make judgments, and formulate hypothesis" (McBride, 1992, p. 119). McBride (1992) has discussed cognitive and psychomotor outcomes together: "the way to assess the hypotheses
generated from the cognitive action phase is to test them, which moves the learner into the cognitive and psychomotor outcome phases of critical thinking" (p. 119). He suggested that students need time to move from passive inactivity to active behavior.

The students must move away from cognitive acquiescence (to accept passively) and toward cognitive dissonance (to create an active disturbance). Without the mediation phase (the time needed for the brain to research), the learner does not engage in critical thinking and regresses to a stimulus-response state of learning. (McBride, 1992, p. 19)

**Model for student self-responsibility**

Another attempt at reform was Hellison’s (1985, 1990) student self-responsibility model, which has been a successful student-centered model. This is a model for teaching self-responsibility for delinquency-prone youth.

The model teaches self and social responsibility through a process of awareness, experience and decision making, and self-reflection. The subject matter is sport and exercise . . . Self responsibility is conceptualized as empowering at-risk youth to take more control of their own lives, to learn how to engage in self development in the face of a variety of external forces, including socialization patterns, peer pressure, self doubt, lack of concept and skills and limited vision of their own options. (Hellison, 1990, p. 38)

He has developed a progressive set of goals for students to achieve in a four level developmental sequence.

- **Level I**: Sufficient self-control to respect the rights and feelings of others.
- **Level II**: Participation and effort in program activities.
- **Level III**: Self-direction with emphasis on independence and goal setting.
- **Level IV**: Caring about and helping others. (Hellison, 1990, p.38)

Hellison (1990) has suggested four strategies that provide a framework for student discovery: awareness of the strategies, success at each level, decision-making and problem solving experience, and self-reflection. Hellison (1990) suggested that the model has been recognized as a worthwhile program for teaching social development through physical education. DeBusk and Hellison (1990) found that the model was a catalyst for affective, behavioral, and knowledge gains for boys, while the teacher developed a more positive attitude toward delinquency-prone youth. Masser (1990), a
classroom teacher, reported that Hellison's model helped her students develop maturity.
"The levels help students understand their own behavior and the behavior of other
students around them . . . the levels help the students take on the responsibility for their
own behavior" (p. 18).

Model of cooperative learning

Another innovative strategy used in physical education is cooperative learning. In
cooporative learning students work together to master material initially presented by the
teacher. A growing body of research in general education (Johnson, Johnson, & Smith,
1991; Kagan, 1990; Slavin, 1990) has suggested benefits of cooperative learning, but
little appears in the physical education literature. Johnson, Johnson, and Smith (1991)
concluded that the positive interdependence promoted in cooperative learning resulted in
positive interaction, which in turn promoted "efforts to achieve, complete tasks, and
produce [in order] to reach the group's goals" (p. 37). They promoted the notion that
cooporative learning has a strong link with gains in critical thinking, suggesting that
improvements in higher level reasoning and critical thinking do not depend on what is
taught, but rather how it is taught. "In many subject areas, teaching facts and theories is
considered secondary to the development of students' critical thinking and the use of
higher level reasoning" (p. 41). Research also indicated that cooperation tends to
promote higher levels of self-esteem (Johnson, Johnson & Smith, 1991; Slavin, 1990).
Slavin (1990) noted that:

Perhaps the most important psychological outcome of cooperative learning
methods is their effect on students' self-esteem. Students' beliefs that they are
valuable and important individuals are of critical importance for their ability to
withstand the disappointments of life, to become confident decision makers, and
ultimately to be happy and productive individuals. (p. 43)

Slavin (1990) found that cooperative learning can be an effective means of
increasing student achievement, but only if group goals and individual accountability are
integrated into the cooperative learning methodology. He reported the major pitfall of
cooperative learning was that students could copy off or rely on other students to do the work. This would result in "a 'free ride' effect in which some group members do all or most of the work (and learning) while others go along for the ride" (Slavin, 1990, p. 16). Slavin (1990) suggested that each group member be responsible for a unique part of the group task, with each student's part being essential for the group's end product.

In physical education there is little research on cooperative learning. Dunn and Wilson (1991) promoted cooperative learning, suggesting the physical educator's role is to develop the cognitive, social, and psychomotor capabilities of students in their classes. They defined the social dimensions of learning as involving: cooperating, listening, communicating, supporting, evaluating, and giving feedback. Dunn and Wilson (1991) provided guidelines for cooperative learning in physical education based on the research in the generic education field:

1. Activities should be structured so that a feeling of positive interdependence among group members is established . . . Give each student a specific group role or assignment.
2. Goals and expectations should be communicated clearly to enhance group skills, ensure responsible learning of materials, and attain appropriate skill performance levels. (p. 25)

Students have various roles in the group, such as performer, recorder, observer, presenter, timer, leader, collector, and/or any other roles that would fulfill a need of the group or a group member. Within the group the roles change regularly, a grade and/or feedback is provided on how the group is performing, students are given complex tasks while keeping groups small, and groups are encouraged to take responsibility for reciprocal instruction by modeling for and teaching each other.

**Sport Education Model**

The Sport Education Model provides an example of how cooperative learning can be part of a physical education program (Siedentop, 1991). In physical education Siedentop (1991) promoted the Sport Education Model to replace the multi-activity
programs that dominate physical education curriculum (Metzler, 1992). It focuses on long term mastery of skills rather than a "smorgasbord" of activities. The Sport Education Model teaches modified sport over longer time periods by using teams, competition, and student responsibility for coaching, refereeing, and score keeping. It features strategic play and fair play with rituals and traditions of sport.

The Sport Education model provides a way to see skills used strategically in game play... Sport, when taught properly, can provide important developmental experiences for children and youth, not only through increased playing competence, but also through personal growth and responsibility. (Siedentop, 1994, p. 1)

Recently in New Zealand Grant (1992) introduced and studied the Sport Education Model and reported positive outcomes, which were: students accepted greater responsibility and learned more, participation and attendance were higher, and teams became cooperative. "If you believe sport should be part of the physical education curriculum, then Sport Ed Model appears to be a viable teaching method" (Grant, 1992). The notion of students learning to take responsibility for themselves, their growth and development, and their environment is an integrated part of this curriculum (Siedentop, 1991).

The critical thinking model, student self-responsibility model, cooperative learning, and the Sport Education Model provide descriptions of the possible innovative strategies in physical education. Recent literature suggests that innovation is not only a healthy concept of growth in education but may be necessary in physical education.

**Teachers' Values and Beliefs**

This study examined two innovative physical education teachers and attempted to determine what they value and what can be learned from how (and to what degree) they operationalize their values. It is important to review the literature on teachers' values and beliefs since this area of inquiry is fundamental to gaining a comprehensive understanding of what goes on in the gymnasium. Cohn and Kotthamp (1993) suggested that teachers
have been the missing voice in educational research and reform and only recently have teachers' values and beliefs emerged as a legitimate area of inquiry. When researchers attempt to explain teachers' classroom or gymnasium activities, teachers' goals and interpretations of classroom processes ought to be considered. Ross, Cornett, and McCutcheon (1992) suggested that theories and beliefs serve as the foundation for teaching practice. "The research on teacher thinking generally agrees that teachers' personal theories and beliefs serve as the basis for classroom practice and curriculum decision making, yet the nature of this relationship is not well understood" (p. 3).

Abelson (1979), in a comparison of knowledge and beliefs, defined beliefs in terms of the manipulation of knowledge for a specific purpose or in a particular situation. He suggested that belief systems consist of propositions, concepts, arguments, or recognized points of view that are disputable. This inclusion was supported by Nespor (1987), who included the affective domain of learning in his explanation of belief systems.

Belief systems include affective feelings and evaluations, vivid memories of personal experiences, and assumptions about the existence of entities . . . all of which are not open to outside evaluation or critical examination in the same sense that the components of knowledge systems are. (p.321)

Pajares (1992) attempted to clean up the "messy construct" of teachers' beliefs by pointing out distinctions between beliefs and knowledge that were common to most recorded definitions. "Belief is based on the evaluation and judgment; knowledge is based on fact" (p. 313). Abelson (1979) reported that research on beliefs demonstrated that they were generally impervious to change even if a strong logical argument were posed to refute a certain belief. Pajares (1992) concluded that "beliefs are formed early [in one's life] and tend to self-perpetuate, persevering even against contradictions caused by reason, time, schooling, or experience" (p. 324).

Other researchers have developed their own ways of explaining teachers' values/theories. Gudmundsdottir (1990) concluded that “although it seems logical in a
theoretical consideration to separate values and pedagogical content knowledge, in reality these two are closely integrated” (p. 45). He suggested that teacher value orientation's relationship to pedagogical content knowledge can provide a useful theoretical framework for understanding the content teachers teach students. Munby (1982) noted that "the significance of teachers' beliefs or implicit theories to our understanding of teacher decision making and teacher thinking cannot be over-emphasized" (p. 216). However, Nespor believed that the theoretical conceptualizations advanced to date were inadequate to help understand the role of beliefs in the practice of teaching.

In spite of the arguments that people's "beliefs" are important influences on the ways they conceptualize tasks and learn from experience, relatively little attention has been accorded to the structures and functions of teachers' beliefs about their roles, their students, the subject matter areas they teach, and the schools they work in. (Nespor, 1987, p. 317)

Nespor (1987) concluded that beliefs are far more influential than knowledge in determining how individuals organize and define tasks and problems, and are stronger predictors of behavior.

Teachers adjust the curriculum to fit their fundamental conceptions of the subject matter (Gudmundsdottir, 1990). Gudmundsdottir (1990) suggested teachers' pedagogical models for subject matter demonstrate their personal orientations to the discipline. Meaning can not be constructed without some kind of knowledge and this structure is tied to values (Gudmundsdottir, 1990). These values construct the transformation of teachers' pedagogical content knowledge and how they interpret what they teach. Teachers form their personal curricula from these value-laden perceptions; therefore, values are an essential part of excellence in teaching. Gudmundsdottir (1990) proposed that “teachers' orientation to subject matter is central when teachers reconstruct their content knowledge to create pedagogical content knowledge” (p. 46). What teachers value and believe determines what they teach.
Belief structures can be operationalized as educational goals for student learning. These beliefs, or value orientations, may affect teachers' curricular decision-making processes. In physical education the choice of content is related to the skill knowledge base with the teacher using a series of progressive and developmental sequences (Rink, 1993). Hellison (1985) found that the content can be connected to increased cooperation, student autonomy, positive social interactions, enjoyment, and participation. Rauschenbach (1992) studied the relationship among curricular values, teaching strategies, and student involvement with physical education teachers. His work, grounded in Ennis' research on curricular value orientations, found that "curricular values were the single most important determinant of the type of learning environment that existed in each teacher's setting" (p. 240). These teachers operationalized their values in the learning environments they created. Rauschenbach (1992) found that students' socioeconomic status affected teachers' curricular values; more than the formal district curriculum content did. All teachers tried to gain and maintain cooperation with and among students in their learning environments.

Clark and Peterson (1986) discussed two types of theories and beliefs held by teachers: teachers' theories and beliefs about students, and teachers' implicit theories of teaching and learning. Teachers' knowledge, values, and experience are frequently implicit (Shulman, 1987). Clark (1988) extended the notion of implicit theories by suggesting that

Implicit theories tend to be eclectic aggregations, cause-effect propositions from many sources, rules of thumb, generalizations drawn from personal experience, beliefs, values, biases, and prejudices... teachers' implicit theories about themselves and their work are thought to play an important part in the judgments and interpretations that teachers make every day... As a term, "implicit theories" implies these systems of thought are not clearly articulated or codified by their owners, but are typically inferred and reconstructed by researchers on teacher thinking. (p. 6)

Solas (1992) suggested that teachers and students have particular views of the teaching and learning process which inform and shape what transpires when they engage in this
process; more often than not these theories are implicit. Munby (1982) argued that research on teachers' implicit theories is central to a complete and useful understanding of teachers' thought processes.

Research on how teacher theories are related to teacher and student behavior within typical school contexts would enhance our understanding of teaching, making it more sophisticated and realistic (Peterson, 1988). Solas (1992) suggested that it is essential for professional growth for teachers to make their theories explicit because they would have a clearer understanding of what they value and believe as teachers.

**Theories of action and theories-in-use**

Argyris and Schon (1974) distinguished between two types of professional theories: theories of action and theories-in-use. The espoused theories of action and the enacted theories-in-use may not be congruent with each other and teachers are not always cognizant of such inconsistencies.

When someone is asked how he would behave under certain circumstances, the answer he usually gives is his espoused theory of action for that situation. This is the theory of action to which he gives allegiance, and which upon request, he communicates to others. However the theory that actually governs his action is his theory-in-use, which may or may not be compatible with his espoused theory; furthermore the individual may or may not be aware of the incompatibility of the two theories. We cannot learn what someone's theory-in-use is simply by asking him. We must construct his theory-in-use from observations of his behavior. (Argyris & Schon, 1974, pp. 6-7)

Nespor (1987) suggested that teachers' beliefs or implicit theories (Abelson, 1979) play a major role in defining instructional events and organizing the knowledge and information related to those tasks, because the context, the work environment, and many teaching problems are ill-defined and deeply entangled. An understanding of belief systems may be appropriate for making sense of these contexts. However, a teacher's basic philosophy may retreat or even disappear when the teacher faces the realities of a complex classroom situation (Tornvall, 1987).
Marland and Osborne (1990) defined theory of action as "the set of claims a teacher makes about what informs or shapes his or her teaching practice and may include beliefs, principles, tactics [and] role conceptions" (p. 94). They studied the espoused theories of an English teacher, which by the researchers' definition included, "a theory for or about action, not a theory in action" (p. 94). Marland and Osborne (1990) found that the teacher's theory of action was context specific, rich in detail, internally consistent, but contained some "built-in" dilemmas. The teacher's theory consisted of four components. The first three were clearly defined, relatively stable, and closely interrelated: an educational philosophy expressed in goals, beliefs and values; knowledge of students; and a variety of instructional procedures as tactics, principles, and models for classroom practice. The fourth component, dilemmas, represented problematic situations in the classroom when the teacher had to make choices between competing values, beliefs, and practices. The teacher perceived uncertainty, ambivalence, and tension when she had to deal with these situations. However, overall Marland and Osborne (1990) found close congruence between the teacher's theory of action and her classroom practice and the teacher's "theory of action was a powerful influence in determining the broad parameters and structure of lesson events" (p. 108).

In another study, Mitchell and Marland (1989) reported an experienced teacher's theories of action as congruent with his enacted practice in the classroom while an inexperienced teacher's behavior was less congruent. Mitchell and Marland (1989) suggested that the experienced teacher utilized a number of "schemata with which he attempts to interpret the classroom environment . . . which not only help reduce this information processing but give evidence of those characteristics that can set apart a teacher from a lay person" (p. 125). They found no evidence of a similar schemata in the inexperienced teacher's data base. Schemata included: ego enhancement, problem avoidance, and knowledge view. Ego enhancement schema appeared as an expressed
belief in giving feelings of self-confidence to students by "reinforcing cooperative behavior, particularly in their attempt to contribute to decision making. He appeared to be alert to contextual cues about pupil embarrassment, lack of pupil well-being, pupils wishing to contribute, and pupils having difficulty formulating the answer" (Mitchell & Marland, 1989, p. 125). Problem avoidance schema were designed to facilitate classroom management and student comprehension and were related to the context in the lesson. The third schema related to the manner in which teachers think about the subject matter of the lesson.

He employs his schema to maintain the logical flow of the lessons along a relatively narrow track; he is constantly alert in his thinking to deviations from his physical framework, and explains and questions accordingly. (Mitchell & Marland, 1989, p.126)

The experienced teacher's theory was more consistently aligned with practice than the inexperienced teacher. Mitchell and Marland (1989) suggested that this may be attributed to the experienced teacher's time to develop a wider range of classroom behaviors and more appropriate questioning strategies to support his teaching.

Veal (1992) studied the practices and perceptions of two physical education teachers regarding student assessment. Her emphasis was on what teachers believed (theory of action) versus what was observed in the instructional process (theories-in-use) or could be deduced from written documents. She found that the teachers' espoused values about participation, effort, and fitness testing were congruent with their enacted practices. However, their espoused theories concerning skill testing and formative record keeping were incongruent with their professional practice. Described earlier in the adventure education literature, Kolb's (1992) work found that the espoused theories of an adventure instructor were incongruent with his enacted curriculum. The instructor offered the program to MBA students as a team-building exercise with the notion of team concepts highly valued; however, the students mainly experienced the program at the personal development level.
Students' experience of the curriculum

Another group central to the educational process, but rarely consulted, is the students. Ironically, the two groups most intimately involved in the day-to-day function of education, teachers and students, have rarely been asked for their thoughts by researchers. There is a paucity of theoretical conceptualization, empirical research, and discourse of practice concerning how students experience the curriculum or engage in learning. Erickson and Shultz (1992) explored what the school personnel purposefully teach students and what the students see, think, and feel in the learning environment. They found that:

Student experience has been treated in partial and incidental ways, as researchers, teacher educators, and policy analysts consider relatively thin slices of classroom life, usually from a single perspectival angle. None of these slices have been multidimensional enough to capture students' subjective worlds as whole phenomena. (p.466)

Doyle (1992) agreed that there was a paucity of research on the experienced curriculum and recommended that to better understand this construct education researchers need not only to study teachers and teaching, but students within their ecosystem. "Pedagogical researchers [have] paid little attention to curriculum as a classroom experience or to the situational factors that might shape teaching practice" (Doyle, 1992, p. 492). This has also been evident in the physical education literature (Graham & Mustain, In Press; Smith, 1991).

Investigation of the thought processes of students as they learn has been increasingly recognized as an important consideration in the study of teaching. "Describing and assessing teachers' thinking and cognitions as well as students' thinking and cognitions [have] an important part in determining quality in teaching" (Peterson, 1988, p. 6). Investigations conducted on student thought processes have been grounded in the belief that learning does not occur automatically from teaching. "Research on students' thought processes examines how teaching or teachers influence what students
think, believe, feel, say, or do that affects their achievement" (Wittrock, 1986, p. 297).

Solomon (1991) said the students' thinking "affects achievement. In order to more fully explain effective teaching in physical education, it is imperative that we learn more about students' thoughts as they acquire motor skills" (p. 1).

Understanding students' opinions about how they experience the curriculum can provide insight into how the curriculum is received. Teachers are not alone in the classrooms or gymnasiums, but are involved in a specific context with many students. Schueller (1986) argued that while the role of the teacher remains a critical element in the teaching and learning process, what the student does is, in fact, a more important determinant in the learning process than what the teacher does. The experienced curriculum is jointly constructed through the teachers' and students' experiences. Evans (1990) emphasized the place students play in the teaching and learning dynamic.

"Teachers not only control pupils, they too are controlled by pupils, as well as being manipulated and processed by their peers and others outside the educational workplace in ways which we only sketchily understand" (p. 140). The curriculum exists not as a document but as a set of enacted events in which teachers and students jointly negotiate content and meaning (Elbaz, 1983). Rather than directly influencing student behavior, Solomon (1991) has suggested that the goal of the teacher is to create an environment which motivates students to think in certain ways.

Because they can provide valuable insight, researchers need to remember students and investigate classroom behaviors and actions and the ways students and teachers interact within the educational ecosystem.

Task Structure Observation System Research

The task structure observation system has provided a method to systematically observe lessons in schools to compare the congruence between teachers' espoused
theories of action and their theories in use. It can be used to determine the degree to which the goals and beliefs of adventure education are in fact possible to accomplish given the nature of these tasks assigned to students during physical education lessons. The ecological model can be viewed as an analytical framework for understanding how classrooms function (Doyle, 1979). The task is the unit of analysis. A task is defined by a goal and a set of operations to achieve that goal (Doyle, 1986). The managerial task system and the instructional task system were identified as two major task systems in Doyle's (1986) description of classroom ecology. The managerial task system refers to the organizational and managerial aspects of the teaching and learning environment, all the non-content functions that are necessary for students and teachers to co-exist together over a period of time. The instructional task system includes the subject matter activity, or the intended learning that students are to acquire by participating in the instructional activity.

The task structure observation system provides a narrative description of the instructional ecology of the program under inquiry. It analyzes the overall use of time in class. The basic time divisions are management, transition, warm-up, and instruction. Within the instructional episode the focus is on the instructional task as the primary unit of analysis. Instructional tasks include cognitive, informing, extending, refining, applying, and routine tasks. Student responses are judged for congruence and appropriateness. In addition, the teacher's methods of accountability are analyzed (Lund, 1990).

Following the work of Doyle, Allen (1986) found that students in different content settings had two major classroom agendas, to pass their course work and to socialize. Students liked classes where they could socialize while learning something interesting in addition to passing the course. Siedentop (1988) suggested that an effective teacher "plans, instructs, and interacts so that the students' social system is
accommodated within the instructional task system in ways that enhance rather than detract from the productivity" (p. 15). Recently Jones (1992) and Griffin (1991) reported instances of social tasks operating within physical education and coaching settings.

The ecological framework attempts to explain how classrooms work. Doyle (1986) added to this work by showing a relationship between management and instruction. Within that framework, the instructional, managerial, and social task systems are interrelated. Changes in one system can dramatically affect the other systems. Effective teachers appear to provide more established structures in their classrooms in the managerial and instructional task systems, and less control over the social task system (Siedentop, 1991).

Doyle (1979) found that teachers set boundaries with their stated tasks, but stated tasks often were not congruent with actual tasks. Programmatic research on task systems in physical education was initiated at Ohio State University by Tousignant (1982), and expanded with a series of studies by England (1993), Griffin (1991), Jones (1989), Lund (1990), Marks (1988), Son (1988), Tinning (1983), and Ward (1993). Tousignant and Siedentop (1983) found students were involved in one of four behaviors, either on-task, modified task, deviant off-task behavior, or avoiding the task by acting as competent bystanders. Students on the stated task listened to the teacher, started the task as soon as possible, and did as much as they could to work toward the improvement of their performance. At other times, Tousignant and Siedentop (1983) discovered that students often changed or modified the task requirements:

The students who found the task too easy or experienced low rate of success were likely to drift toward a modified task. They changed the task by skipping parts, changing the rules, or improving new forms . . . The modified tasks were more challenging because they were better adapted to the students' skills. Typically, the task modifications were "within the boundaries of the stated task," that is, they received tacit or explicit acceptance from the teacher. (p. 49)

Off-task, the third behavior, consisted of student involvement in activities that interfered with the flow of the lesson. Examples of these were talking during instruction, misuse of
equipment, fooling around, or fighting. The fourth behavior was the competent bystander, which was characterized by a student who would wait in line until it was his/her turn and then before taking a turn would go to the back of the line to avoid an opportunity to respond. Tousignant and Siedentop (1983) found that the degree of congruence depended on the task presentation. If the tasks were explicit, then less ambiguity would arise and more on-stated task behavior would occur. The students negotiated with the teacher depending on the ambiguity (task explanation) and risk (task difficulty) of the task.

Doyle (1986) stated that accountability drove the task system. Accountability refers to the strategies teachers use to establish and maintain student responsibility for appropriate behavior, task involvement, and outcomes. Without accountability task systems become flexible and sometimes are even suspended (Doyle, 1986). Accountability appears in the classroom or gymnasium in the form of tests that students perform for grades, teacher feedback, praise and reprimands, active supervision, challenges and competitions, public recognition of performance, and records of student performance (Lund, 1990). Ultimately task systems are defined by what teachers hold students accountable for, both in the managerial and instructional systems (Lund, 1992).

The ecologies of the classroom and the gymnasium operate differently. In classrooms the performance grade exchange system (Doyle, 1986) tends to be the primary accountability mechanism. Students in the classroom are often required to perform for grades - tests, homework, assignments, and so on. In physical education it is less common for students to perform for grades. At the end of a unit many physical educators test for knowledge of skills but not usually on a daily basis. In addition, negotiations in physical education tend to occur through students' task modification (Tousignant & Siedentop, 1983), rather than asking questions or making requests as Doyle (1986) found in the classroom. Therefore, supervision and accountability are
important skills and strategies for teachers to master. Most educators would agree that “supervision and accountability may be the two most important teaching skills in the repertoire of the effective physical educator” (Siedentop, 1991, p. 75). Teachers use many different forms of accountability—public recognition, verbal interaction, record keeping, challenges, and performances—operating as different forms of grade exchanges (Lund, 1992). They must actively supervise students to ensure that an accountability mechanism works (Siedentop, 1988).

Supervision is necessary when formal accountability is weak or inconsistent. In the absence of formal accountability, active supervision is the informal accountability. Active supervision involves not only monitoring and keeping students on task, but also perimeter movement, scanning at times, and providing specific and relevant feedback to individuals and groups of students. Monitoring must be purposeful in the sense that it determines if the students' behavior is congruent with the task stated by the teacher. In a class without active supervision, off-task or deviant behavior would be likely to occur (Siedentop, 1988). The weaker the overall formal accountability, the more supervision is necessary. Active supervision can become the only accountability in many teaching environments. However, when there are serious consequences—grades, prizes, verbal interactions, or any strong reinforcers—work gets done with minimal active supervision (Siedentop, 1991). The teacher must have an expectation of student learning, actively supervise, and utilize accountability systems or, as the research indicated, the task systems will be suspended and little learning will occur.

Jones (1992) and Rauschenbach (1992) have studied elementary physical education teachers using the Task Structure System. Jones' (1992) data supported the existence of managerial and instructional task systems along with an informal social task system. She found that students stayed on the stated task the majority of the time, whether they were successful or not. The two teachers she studied used a pattern of
informing, extending, and applying tasks. The teachers rarely asked their students to perform refining tasks; only three refining tasks were observed in 34 lessons. At the elementary level a less formal accountability system was evident as the children were not involved in the formal grade exchange of performance.

Rauschenbach (1992) also studied elementary physical education teachers utilizing the Task Structure System. He found that students generally stayed on the stated task, with the majority of time (63%) being involved in practice. The teachers that Rauschenbach (1992) studied used a pattern of informing, extending, and applying tasks. The teachers did at times ask students to perform refining tasks; however, in the majority of the lessons refining tasks were not observed. He found teachers used both informal and formal accountability systems. Informal accountability included circulating and providing positive and corrective feedback, hustles, cues, praise, and desists, including individual, across space, and whole group interactions. Formal accountability included written comments and checklists that contributed to the formal grade card.

In most cases learning experiences are delivered to the learner utilizing the presentation of tasks so that students will be actively engaged with the content. In physical education movement tasks should motivate the learner to engage motorically in the content. Rink has been a leader in studying ways teachers develop instruction in physical education (Rink, 1979; French, Rink, Rickard, Mays, Lynn, & Werner, 1991; Rink, French, Werner, Lynn, & Mays 1992). Rink (1993) stated "it is clear that there is no development toward any intended psychomotor outcome in many lessons in physical education" (p. 51). Rink and Werner (1989) developed the Qualitative Measures of Teaching Performance Scale (QMTPS) which was designed to collect data on the type of task, task presentation, students' responses appropriate to task focus, and teacher-specific congruent feedback. Analyzing the lessons with the QMTPS, French et al., (1991) utilized extending tasks to support the concept that breaking down complex skills into
more manageable parts increased motor skill acquisition. Students who were given a progression of simple-to-complex conditions of practice learned more volleyball skills than students who practiced the final test for the same amount of time. Another aspect of content development related to refining tasks given to classes as the focus of their physical education lessons. Rink et al., (1991) found that the use of refining tasks facilitated learning volleyball skills when taught with appropriate progressions. Rink (1993) has advocated the use of refining tasks; however, research studies to date report an absence or low incidence of refining tasks used by physical education teachers (Jones, 1992; Rauschenbach, 1992; Romar & Siedentop, 1993; Siedentop, 1991).

Chapter Summary and Theoretical Base

The concept of curriculum innovation has been described in different conceptual, theoretical, and practical ways in the literature. This review of literature has covered five major themes: magnet schools, adventure education, curriculum innovation in physical education, teachers' values and beliefs, and the task structure observation system. It was hoped that each area would contribute to the understanding and interpretation of the questions related to this study and would help locate the study in the literature. This study examined two innovative adventure education magnet schools and attempted to determine what the physical education teachers valued and how they enacted these values. The following chapter provides a description of the methods used to study the curricular innovation at Cornwall and Drexel Schools.
CHAPTER III
METHODOLOGY OF THE STUDY

The purpose of this study was to describe and interpret the physical education curriculum at Cornwall and Drexel. A secondary purpose was to determine how the physical education program was established and maintained. Qualitative and quantitative methodologies were chosen as the most appropriate means to achieve this goal. This chapter attempts to describe the rationale for an interpretive approach to the study of Cornwall and Drexel alternative elementary physical education programs. This will be followed by a description of the entree to the site, research setting and participants, data collection, and data analysis procedures for the study.

An interpretative approach

In this study qualitative research methods provided the main source of data. In addition a quantitative measure to describe the operational curriculum in the physical education programs was utilized. The instrument was a modified version of the task structure observation system (Lund, 1990).

Qualitative research is an umbrella term that includes ethnography, participant observation, case study, symbolic interactionist, phenomenological, constructivist, and interpretive research strategies. According to Erikson (1986), these research strategies “are all slightly different, but each bears strong family resemblance to the others” (p. 119). He specified that the key feature of this similarity among the various approaches is the central research interest in society and “its elucidation and exposition by the
researcher” (p. 119). Bogdan and Biklen (1982) reported that qualitative data are “rich in
description of people, places, and conversations, and not easily handled by statistical
procedures” (p.2). Qualitative researchers tend to collect data through sustained contact
with people in settings where subjects normally spend their time. When discussing the
interpretation of qualitative research, Sparkes (1992) defended the researcher's discretion
in qualitative inquiry.

Quite simply decisions about who to talk to, where to be, and when to be
in certain places will have an impact upon what data is and is not collected.
Also decisions made in the field about sampling, the role adopted and the
kind of relationships established, and the events and encounters will
contribute to the construction of a particular fieldwork trajectory and a
limited set of possibilities for interpretation. The presence, the effect, and
the biases and selections of the researcher cannot be removed from
qualitative research. Qualitative research cannot be made "researcher
proof." (p. 33)

Jorgensen (1989) suggested that a qualitative method is especially appropriate
when little is known about a phenomenon. Such was the situation with the present
research. Adventure education has not been studied at the elementary school level and
consequently the two alternative elementary physical education programs in the present
case have not been studied in detail. Qualitative methods are also useful when the
researcher focuses on a process of “how something happens rather than the outcomes or
results obtained” (Patton, 1990, p. 94). This was the intention of this study.

Strauss and Corbin (1990) pointed out that there are times when the nature of the
research problem can lead the investigator towards a qualitative approach. This was
supported by Peshkin (1993). According to Strauss and Corbin (1990) qualitative
methods can “give the intricate details of a phenomenon that are difficult to convey with
quantitative methods” (p. 19) such as teachers' values and beliefs and students'
experiences. The focus of this inquiry was on the infusion process of Project Adventure
concepts in the teaching and learning environments of two alternative schools. "When we
understand the processes by which a life or small town or classroom takes on its particular character, we understand something of value" (Peshkin, 1993, p.24).

The case study approach was chosen as the particular qualitative design for this study. "A case study is a detailed examination of one setting, or one single subject, or one single depository of documents, or one particular event" (Bogdan & Biklen, 1982, p. 58). Patton (1990) proposed that case studies enhance the understanding of educational phenomena by providing a depth of knowledge not attainable by other means. According to Yin (1989) case study designs can provide:

1. A thorough description of some phenomenon
2. A study of phenomenon in their real-life context over an extended period of time
3. Complex phenomena that have meaning only within their context
4. Multiple sources of evidence
5. Critical tests of a significant theory

An attempt was made to explore and describe these alternative physical education programs while being cognizant of the assumption that meaning only exists within their context and that manipulation of the variables was not appropriate.

The findings were grounded in specific contexts, that is, themes that emerged from this research were grounded in real world events/patterns that occurred at Cornwall and Drexel. This was an example of what Glaser and Strauss (1967) termed grounded theory. The phenomenological approach (trying to get into the teachers’ and students’ life worlds) was utilized in an attempt to accurately describe and interpret the physical education programs at Cornwall and Drexel. Focusing on two programs allowed for a depth of information that would not be available in a larger sample of teachers and programs. This was beneficial in understanding the teachers’ espoused and enacted values and beliefs, and enabled a more accurate description of the teaching and learning at Cornwall and Drexel.
Entree

A major factor affecting the way one gains entree into a setting depends on one's perceived status. There appeared to be mutual respect between the researcher, the teachers and principals at Cornwall and Drexel. This respect was enhanced by the investigator's similar experiences as an elementary and high school teacher and an instructor at the same adventure education center as the both teachers in the study.

Teachers and principals were contacted in August 1992 at their schools. The project was explained to each of them separately and particular care was taken to explain the expected involvement of both parties, researcher, and subjects. Confidentiality and anonymity (schools, teachers, and students were given pseudonyms) were assured for teachers and principals concerning data collected in the study. This procedure minimizes the physical, psychological, and/or social risks, and informs the subjects regarding the nature of the research, addressing two basic ethical issues of qualitative research (Erikson, 1986).

The school district granted permission to complete the research. The teachers and principals were contacted and permission sought from the Human Subjects Review Committee at Ohio State University. Permission was obtained from the students' parents (see Appendix A). In exchange for their commitment, the teachers received the transcripts of the interviews, a copy of the final report, and a copy of the videos made of their teaching. A professional researcher-subject rapport was established and maintained with both teachers and principals throughout the study. The researcher's looked for alternative explanations concerning what the subjects revealed throughout the study (Patton, 1990).

Research setting and participants

Qualitative researchers focus on relatively small samples, even single cases (Eisner & Peshkin, 1990; Miles & Huberman, 1984; Patton, 1990), since the shared goal
of qualitative inquiry is the in-depth description and understanding of meaningful cases. In this study Cornwall and Drexel elementary physical education programs were investigated since they are the only two adventure based alternative elementary schools in the U.S. The principal subjects were the two physical education teachers and the students in grades 3 and 5. Grades 3 and 5 were chosen following pilot work at another alternative physical education elementary school an adventure education center, and discussion with teachers at Cornwall and Drexel. High-risk adventure education activities are introduced in grade 3 and progress to grade 5. The teachers suggested that focus group interviews would be problematic with students younger than grade 3.

Qualitative researchers often engage in purposeful sampling because, in the words of Patton (1990), “the purpose of purposeful sampling is to select information rich cases whose study will illuminate the questions under study” (p. 169). A purposeful sample was chosen because it was thought that these two alternative elementary physical education programs provided a good example of adventure education within a unique educational, curricular, and organizational framework. The teachers and principals at Cornwall and Drexel readily volunteered to be contributors in the exploration of their programs. This openness reflected their commitment and quest for knowledge in teaching and learning. Patton (1990) suggested that in many instances more can be learned from intensely studying unusual cases than can be learned from the portrayal of what the average case is like.

The principals and teachers were interviewed at Drexel and Cornwall Alternative Schools to provide multiple perspectives and enhance credibility. The grade 3 and grade five regular classroom teachers whose students were observed during the physical education component were interviewed at each school to better understand these classes and their teachers' goals and aspirations. Each of their classrooms was visited informally to observe students and informally interview students and teachers concerning issues
related to the research questions. In addition, two other classroom teachers at each school, who were not involved in the study, were interviewed to determine their perspective of physical education and the Project Adventure focus of the school program. These teachers were chosen because of their experience teaching at the schools.

Following is a brief biography of the teachers.

Principal and teachers interviewed at Drexel Alternative School.

Ms. Catherine Devon, the principal at Drexel, was asked to open the school six years ago. This was her first assignment as a principal. She held a Master's Degree in Education and had 14 years of teaching experience in physical education and health. Catherine's values and beliefs were closely aligned to the Project Adventure philosophy so she believed the mission of the school was to infuse this philosophy into a program with high expectations that would produce high standards of achievement.

Mr. Paul Grove was a fourth grade teacher at Drexel. He held a Bachelor's Degree in Education and had ten years teaching experience, four years at a middle school and six years at this elementary school. He believed the adventure education concept of trying or challenging oneself at one's own level was vital to the program.

Ms. Nancy Brewer, a third grade teacher at Drexel, she held a Bachelor's Degree in Education and was a first year teacher. Nancy believed that it was important to address academics but she also talked about challenging the students' physical ability and the importance of integration of physical education into the classroom.

Ms. Cecilia Law was a special education teacher at Drexel with ten years of teaching experience. She held a Bachelor's Degree in Education and was working toward a Master's Degree in Educational Policy and Leadership. Her philosophy suggested a strong commitment to adventure education. She believed that adventure education was a way of life for her: "To teach it you have to live it."
Ms. Rosemary Lillie was a fifth grade teacher at Drexel and had 30 years teaching experience at the elementary school level. She held a Bachelor's Degree in Education. Rosemary had a strong interest in student expression in written language. She wanted her students to carry the Project Adventure philosophy, "throughout the trials and tribulations of life."

Principal and teachers interviewed at Cornwall Alternative School.

Michael Wood, the principal at Cornwall, was asked six years ago to open the school. He held a Master's Degree in Education and was enrolled in a Ph. D. program. Michael was a physical education teacher for 11 years and an assistant high school principal for two years. He said, "as the principal I have to be the leader of the school, want to be the leader of this school. I want to be the role model and set the example so my commitment is toward the Project Adventure program. And hopefully I can lead by example."

Susan Stroud, a fifth grade teacher, was in her second year at Cornwall. She held a Bachelor's Degree in Education and was enrolled in a Master's Degree program. Susan said she had internalized the five components of Project Adventure when teaching. Susan felt that she was a role model "because they see me doing it."

Bev Murphy was a third grade teacher in her fourth year of teaching at Cornwall. She held a Bachelor's Degree in Education. She said, "the philosophy of the program is kind of a philosophy that I try and live by, taking risks and challenges, building trust and relationships with other people. And I'd like to see that developed in children."

Jenny Jack was a first grade teacher who had six years teaching experience at Cornwall. She held a Master's Degree in Reading, Language, and Literature. Jenny saw adventure education as an opportunity for children to push themselves to reach goals in the areas that they are not comfortable with and believed debriefing was an important part of the experience.
Kate Mcab was a fourth grade teacher at Cornwall with six years teaching at Cornwall and seven years experience at a K to grade 8 parochial school. She held a Master's Degree in Education. She believed that "children need to become involved in their education. Children need to take ownership for their education."

All teachers at the schools were employed by a committee made up of the principal and teachers. Most teachers and both principals at Cornwall and Drexel had been trained in "adventures in the classroom" at Project Adventure in Massachusetts or Georgia and all were annually certified as high ropes, initiatives, and accessible challenge instructors. They were continually involved in professional development and they had completed Tribes, a way to teach students using cooperative learning activities.

Data collection process

The major research questions drove the data collection procedures (Doyle, 1986) for this study. Observations (field notes and systematic observation), interviews (structured, open-ended, and focus group), and document analysis were used as means of data collection. Each strategy is described in terms of its suitability for answering the research questions.

Data for this study was collected utilizing the following methods:

1. Structured interviews
2. Open-ended interviews
3. Informal interviews
4. Focus group interviews with students
5. Document analysis
6. Non-participant observation
7. Task structure observation system analysis of videotaped lessons
Structured interviews

All interviews, with the exception of the informal interviews, were audio taped and transcribed for analysis. Structured interviews were conducted with each physical education teacher at the beginning and at the end of the study. The purpose of the first interview was to obtain a personal history of each participant. Demographics of the environment and detailed descriptions based on substantive experience related to their personal adventure education experiences, workshops at Project Adventure, course work, work experience at an adventure education center, coaching, and related experiences were collected. The first interview helped focus first observations.

A final interview was conducted at the conclusion of the study for both physical education teachers. Its purpose was to clarify statements made during previous interviews, raise questions from ongoing analysis of the data, allow teacher’s to give meanings to their actions during the observed lessons, and probe the teacher’s purposes, goals, and perceptions of the alternative physical education programs.

In addition, the principals and four teachers from each school were interviewed to provide additional information concerning the educational, curricular, and organizational issues of both schools. Both principals were interviewed to inquire into their purposes, goals, and perceptions of the alternative physical education programs.

Open-ended interviews

Open-ended interviewing of the physical education teachers involved approximately 15-30 minute interviews once a week (ten at Cornwall and nine at Drexel). They were conducted after lessons to answer questions from ongoing analysis of data, allow teacher’s to give meanings to their actions during the observed lessons, and probe the teacher’s purposes, goals and perceptions. Post-lesson interviews were guided by questions related to their perceptions and goals of the lesson.
Structured focus group interview

Structured focus group interviews of students, approximately 15 minutes in length, were conducted for each class, at each school once each week (twenty at Cornwall and nineteen at Drexel). Stewart and Shamdasami (1990) has proposed advantages of focus group interviews:

1. To allow researchers to interact with the respondents. This provides an opportunity for clarification and probing of responses, and for follow up questions.
2. To provide an opportunity for large and rich amounts of data in the respondents’ own words.
3. To allow respondents to react to and build upon the responses of other group members. This synergistic effect of the group setting may result in the production of data or ideas that might not have been uncovered in individual interviews.
4. It may be one of the few research tools available for obtaining data from children or from individuals that are not particularly literate.

Because of the feasibility of transcribing the audiotapes, no more than three or four students participate in the focus group interviews. The interviews were conducted to describe and interpret what the students' saw as the teacher’s purposes and goals for that week’s lessons and to allow students to give meaning for their behavior during the observed lessons. Every student in the four classes observed was interviewed in at least one focus group interview. Post-lesson interviews were guided by questions from the researcher related to students' perception and goals of the lesson. A final structured focus group interview of students at each school was conducted at the end of the study to gather students' overall views of their physical education program.

Informal interviews and school meetings

Informal interviews with the teachers occurred before and after their lessons. In the pre-observation discussions the teachers were asked to talk about their lesson plans, specifically their goals for daily lessons. In post-observational discussions the investigator asked the teachers their perception of the lesson, to explain if they made any changes in their teaching, and identify what influenced those decisions. This and any
other information relevant to the research questions was recorded in the form of field notes and expanded as soon as practically possible after the interaction.

In addition, informal interviews occurred frequently with the physical education teachers, classroom teachers, students, and the principal at non-scheduled times during the school day. Also staff, planning, and instructional support team meetings were attended at both schools and field notes were taken as appropriate to the focus of the study.

**Observation**

The study involved non-participant observation of the 22 lessons at Drexel and 19 lessons at Cornwall of the grade 3 and grade 5 classes at both schools, during a four month period. Two types of observational data were collected. First, field notes were taken by the investigator during the class sessions. Second, the observed lessons were videotaped and coded using the modified version of the task-structure observation system (Lund, 1990).

The Schatzman and Strauss (1973) method of taking field notes was implemented. This method organized material according to whether the researcher determined the observation to be an “Observational Note” (ON), “Theoretical Note” (TN) or “Methodological Note” (MN). Observational notes were statements about events experienced principally through watching and listening. They contained as little interpretation as possible and were as accurate as the observer could construct them. Theoretical notes contained self-conscious, controlled attempts to derive meaning from any one or several observation notes. "The researcher interprets, infers, hypothesizes, conjectures; new concepts are developed, linked to the older ones or related to any other observation" (Schatzman and Strauss, 1973, p. 69). A methodological note was a statement that reflected an operational act completed or planned, an instruction to oneself, a reminder, a critique of the researcher’s tactics or bias. It noted timing, sequencing,
stationing, stage setting, or maneuvering. Field notes were written up as soon as
goingly possible after the observation. Field notations were made by the researcher to
keep track of bias and emotional responses to the teaching context in conjunction with
peer debriefing.

There seems to be agreement among qualitative researchers that when no more
relevant information is bought by addition of instances, the length of the observation is
appropriate (Patton, 1990). After discussion with the teachers and principals at Cornwall
three units of instruction lasting 9 weeks was suggested as an appropriate length of
observation time, while at Drexel one 6 week and one 4 week unit of instruction was
suggested as an appropriate length of observation time to understand the nature of a
Project Adventure program.

Task structure observation system

To gain an understanding of the learning environment, the way instruction was
conveyed, and the way students reacted to that instruction in physical education, a
modified version of the task structure observation system was used to code and analyze
videotaped lessons. In the pilot study the task structure observation system had been
used to describe two sessions at an adventure education center and two lessons at a
physical education alternative school. The observations were then discussed with a
content expert to determine the validity of the modified task structure observation system
for describing the programs at Cornwall and Drexel.

The modification to the task structure observation system involved adding the
category of “Safety” under instructional format and redefining the cognitive task category.
Safety tasks were defined as any task designed to facilitate safe activity in the
gymnasium. These task were routine in nature, for example, putting on or taking off
equipment before climbing the wall or spotting another student. Expanding on the work
of Ward (1993), cognitive tasks were re-defined as tasks that required students to ask or
answer questions, problem solve, make a decision, strategize, or discuss information related to lesson content during the lesson or in a debrief. Student would not be physically active during cognitive tasks.

The modified task structure observation system was used to systematically analyze the videotaped lessons. The purpose of this analysis was to determine how the teacher organized and presented curriculum to the students, how the students responded to the instruction, and the extent to which teachers’ educational values and beliefs were manifested through the instructional and managerial tasks. All videotapes were coded by the investigator.

Reliability of the task structure observation system

Interobserver agreement measures are essential to obtaining reliable data (Cooper, Heron, and Heward, 1987) on the task structure observation instrument. Use of interobserver agreement was adopted to achieve this goal. Interobserver agreement refers to the situation in which the observation records of one observer are compared to those of a second observer (van der Mars, 1989). Adoption of interobserver agreement measures to judge the reliability of data collected within a physical education setting is essential since it will indicate the degree to which observers who viewed the data agree in their recording of them (Darst, Zakrajsek, & Mancini, 1989).

One of the purposes of this study was to describe the instructional ecology of physical education lessons; therefore 20% of the observed lessons were randomly selected for a test of interobserver reliability. An independent observer familiar with the instrument was asked to observe 20% of the videotaped lessons. In order to accurately describe the instructional ecology of physical education lessons it was decided to resolve all disagreements. The criterion established for acceptable level of interobserver agreement scores utilizing the task structure observation system was set at 100% agreement. Disagreements between observers were resolved through a joint review of the
portion of the videotapes where the discrepancy occurred and agreement was obtained on those episodes.

Documents

When available the teachers' lesson plans, unit plans, office documents, newsletters, and other written documents related to the physical education program were collected and analyzed.

The following protocol was used for document collection:

1. A list was generated of possible resources of written evidence.
2. The teachers, school office, and principals were provided with file folders for collecting written documents.
3. Pertinent information in documents was highlighted and labeled.
4. Any corroborating or disconfirming evidence was included in the documents.

Data analysis procedures

The challenge of qualitative research is to make sense of the massive amounts of raw data. While the data was being collected the researcher continually made notations concerning the raw data. First, the raw case data was organized into manageable and accessible case records. Second, a category system of analysis was inductively derived. The data was read and re-read to find concepts that were frequent and emphasized in the data. These were entered into a Filemaker IV and emerged into categories. Third, the case narratives for each school were written separately. Throughout the study on-going analysis occurred and notes were made concerning the raw data. The systematic observation data obtained from the modified task structure observation system were tabulated to provide an indication of the frequency and duration of the tasks. This was one "slice of reality" that provided information about the way the teachers demonstrate their espoused values and beliefs in practice.
The raw case data was collected through field notes, interviews, task analysis, and document analysis. The data collected was transferred into a database management program (Filemaker IV, Macintosh) for easy access. The File Folder program sorts and displays the data based on the researcher's noted themes emerging from the corpus. Multiple and careful examination of the data, key linkages, themes, and patterns emerging from the sources were used as a means of developing inductively identified categories for analysis and interpretation of the qualitative data (Erickson, 1986; Patton, 1990; Strauss & Corbin, 1990). The unit of analysis was the school's physical education program. The analysis of the data began with individual case analysis, writing a case study for each program. This was followed by brief cross case analysis which involved grouping together the data from the teachers and analyzing the different information on central issues (Patton, 1990; Yin, 1989).

**Trustworthiness**

Trustworthiness is the degree to which the findings are worth attention and belief on assumptions different from those held by the quantitative researcher. In discussing trustworthiness Guba (1981) has transposed the traditional criteria of reliability, validity, bias, and generalizability from the quantitative paradigm to the concepts of dependability, credibility, confirmability, and transferability from the qualitative paradigm. For qualitative researchers, "truth can never be known. What the researcher attempts to do is to collect sufficient and appropriate evidence to ensure that the description is as accurate as possible given the representational process used" (Evertson & Green, 1986, p. 165).

The first possible distortion of the research findings is the presence of the researcher. To enhance credibility as previously stated in the observation section methodological field notes were taken to enhance the trustworthiness and reduce researcher bias in the study. The investigator brought a certain frame of reference to the observations and analysis (Peshkin, 1988). In the field notes an attempt was made to
articulate the investigator's bias. The effects of a study procedure on the behaviors being assessed has been called reactivity (Kazdin, 1979). To combat reactivity Kazdin (1979) suggested observing over long periods of time and using unobtrusive observational procedures. In this study the investigator spent extended periods of time at both schools and his continual presence reduced possible distortions or reactivity in the setting.

In this study, confirmability was established by member checks, peer debriefing, and triangulation. Triangulation was the process of converging on the conclusion from different points, and was the first step for strengthening the design of this study. In this study, support or disconfirmation of data was obtained through triangulation of methods since information from field notes, interviews, task analysis, and document analysis was compared and contrasted to cross-check data and interpretations. Triangulation of source/respondent was made to strengthen the perspective or provide disconfirming evidence of the interviews with the students from fifth and third grades, their physical education teacher, their classroom teacher, other teachers in the schools, and the principal.

Member checks consisted of returning to the subjects with the information collected or interpretations made in order to modify them if judged incorrect or inappropriate. This was done with all transcripts of teacher interviews during the study. In addition, the physical education teachers were provided with a draft of their case and asked for comment. In response to their suggestions editorial, grammatical, and semantic changes were made. There were no substantive changes suggested by any of the participants in this study.

Peer debriefing was used in addition to member checks to assist in analyzing and interpreting the data. Peer debriefing consisted of inviting other researchers to challenge both the interpretations of the data and methodological procedures adopted. The main resources for peer debriefing were from faculty and graduate students at The Ohio State
University. More specifically, meetings were scheduled weekly with a faculty member and a graduate student to challenge interpretations of the data and methodological procedures adopted. In addition, other faculty and graduate students frequently acted as peer debriefers.

It was assumed that transferability to other schools in other locations was not possible, even though there was "thick description," the trademark of qualitative research (Patton, 1990). Schofield (1990) has pointed out that: "Studying large numbers of sites undercuts the depth of understanding of individual sites, which is the hallmark of the qualitative approach as it has come to be understood" (p. 214). In this study, breadth was traded for the increased depth of description and understanding made possible by the small number of cases. Having two subjects allowed the investigator to contrast the data while keeping it manageable to analyze. The variations in the individual programs were included, but were not the main focus and no claim of generalizability was made. In qualitative research it is the reader's responsibility to generalize from the data presented (Erikson & Schultz, 1992).

Chapter Summary

Qualitative and quantitative methods were utilized in this study to provide a detailed account and interpretation of these two innovative programs in physical education. A case study methodology was used to answer the research questions. The main data sources were from the two teachers and the students in their grade three and five classes, and in addition, the school sites were investigated with observations, document analysis, the task structure observation system, and formal and informal interviews of the principals and classroom teachers. Data were analyzed inductively using principally interpretive strategies and were reported as case narratives. Triangulation, member check, and peer debriefing strategies were used to enhance the trustworthiness of the interpretations.
CHAPTER IV
RESULTS

The purpose of this study was to describe and interpret the physical education curriculum at Cornwall and Drexel. A secondary purpose was to determine how the physical education program was established and maintained. In accordance with the purpose of this study four research questions drove this inquiry (see Chapter I, p. 7). The findings are presented as case studies of each school. The case of Drexel Alternative School will be presented, followed by the case of Cornwall Alternative School. The case findings are presented by research question.

Case One: Drexel Alternative School

1. What were the curricular and organizational characteristics of the alternative physical education program?

Drexel is one of only two alternative elementary school programs in the United States that incorporates components of Project Adventure throughout the school wide-curriculum. The information on the formal physical education curriculum at Drexel was drawn from document analysis of four major sources: the Project Adventure curriculum, the Drexel Five Year Plan, the school district's graded course of study, and the physical education teacher's planning material. Margaret Ranger was the physical education teacher at Drexel Elementary. The formal Drexel physical education curriculum included all components of the school district's graded course of study. In addition, Drexel added a
climbing unit, overnight camping experiences, initiatives, accessible challenges, and high ropes lessons at an adventure education center. A brief summary of the Project Adventure ideals and beliefs are presented, followed by a portion of the Drexel School philosophy. In addition, the school district's graded course of study is discussed and the teacher's yearly plan, briefs, and lesson plans described.

Project Adventure Curriculum

The Project Adventure curriculum model acts as a guiding framework for Drexel's school-wide curriculum (Drexel Five Year Plan 1993). Project Adventure was an experiential based learning process with a holistic perspective. This model was tested as a series of outdoor experiences for high school students in Massachusetts (DeVos & Liberman, 1982). The elements of the Project Adventure curriculum are outlined in Appendix B. Components of the Project Adventure model adopted by Drexel in their curriculum were the five concepts of risk, trust, cooperation, challenge, and problem solving; the use of brief and debrief; the Full-Value Contract; and the building of community support (Project Adventure, 1991).

Drexel: School and Philosophy

Drexel Elementary School was an urban alternative school with 43% of its students coming from economically disadvantaged families. It was a culturally diverse population with approximately 55%. African American students and 45% Non-African American students. Fifteen percent of the students attended the school through a choice lottery system. Another 45% lived in the neighborhood, and 40% were bused to maintain a racial balance. Principal Devon said "we have . . . . an assigned population . . . They don't choose to go here. They have to go here" (I, 31, p. 2).

Philosophically the school was grounded in the ideals of Project Adventure. The Drexel Five Year Plan (DFYP) stated that the school "strive[s] to educate the whole student by developing each child mentally, physically, emotionally, and socially" (DFYP, p. 1).
At Drexel students were encouraged to take an active role in their education, and teachers and administrators believed learning extended beyond the classroom. They emphasized the mastery of basic academic skills utilizing cooperative learning as a dominant instructional format. The educational philosophy stated in the Drexel School Handbook read:

As facilitators, Drexel teachers will strive to develop an eagerness in each student to search, find, and learn from and with each other. Our program places a strong emphasis on the mastering of basic skills: reading, writing, speaking, listening, and problem solving. These basic skills will be an integral part of each curriculum area: reading, language arts, math, science, social studies, health, physical education, and the arts. Adventure-based education will serve as a spring board for growth in all academic areas for students, teachers, and administrators. Project Adventure is an experiential-based learning process in which adventure and challenge are infused into the academic curriculum. Regardless of skill level, each student will have the opportunity to experience activities that will motivate and spark learning that is relevant and personal. The learner will be challenged mentally and physically through the adventure program. The concepts within the classroom will be connected with experiences outside the classroom. Through an atmosphere of cooperation, individual achievement, as well as group support and success, students will be taught how to think, not what to think. Further, the staff at Drexel will establish a continuous invitation for community involvement. This involvement will enhance the living and learning atmosphere created within the school and the school community. (DFYP, pp. 2, 3)

Drexel Alternative School, utilizing the Project Adventure curriculum, attempted to attain certain learning goals. These were:

1. To increase the student's sense of personal confidence.
2. To encourage mutual support within a group.
3. To develop abilities that contribute to group decision-making and leadership.
4. To foster appreciation and respect for differences existing within the group.
5. To develop an appreciation for the interdisciplinary nature of real problem-solving.
6. To develop an increased familiarity and identification with the natural world.
7. To increase agility, physical conditioning, and joy in one's physical self.
(DFYP, p. 4)

Project Adventure Concepts

The five Project Adventure concepts of risk, trust, cooperation, challenge, and problem solving provided a focus to achieve the school's goals.
In the Drexel Five Year Plan they were defined as:

1. Cooperation: Through group work and a supportive group atmosphere, the students will learn to work together cooperatively. Participants will communicate thoughts, feelings, and behaviors effectively through activities which encourage listening as well as verbal and physical cooperation.

2. Risk: Through the adventure approach, students will make a commitment to take a risk displaying their talents and limitations realizing that they will be accepted in a positive safe environment.

3. Trust: Through attempting activities that involve taking some physical or emotional risks, students will trust their physical or emotional safety to others. Through a greater willingness to try new and difficult tasks, the students will learn to trust each other for ideas, encouragement, and support.

4. Challenge: The students will view physical and mental challenges as an adventure to be attempted and experienced. The activities will challenge participants to develop persistence and resistance to frustration in attempting to reach a desired goal.

5. Problem Solving: Group members will effectively communicate, cooperate, and compromise with each other through trial and error participation in a graduated series of problem-solving activities which range from more simply solved to more complex. (DFYP, p.6)

Brief and Debrief

All teachers reported using the Project Adventure procedures of brief and debrief.

Billing occurred before every lesson to prepare. During this time, students set group and individual goals.

Margaret explained the role of the brief:

The role of the brief I think would be like telling the kids what the objectives are of the day or the project or whatever. And getting their frame of reference. Getting their frame of mind into a certain reference and kind of have them tunneled into the activity, whatever it is . . . [and] prepare them. (I, 30, pp. 21, 22)

After every lesson a debriefing occurred and students discussed what happened and how the experience was relevant to them (DFYP p. 6). Margaret explained why they used the debrief:

The whole idea of the debrief is they go and do it [the lesson] and then you talk about it. The debrief that I do generally with the kids may not be the same as the [classroom] teacher. I will relate it to the physical side of things and she might relate it to math or science . . . [I ask:] "What was our goal? Did we do it?" In the debrief you get them to think why it is so important in
their lives. Eventually does it mean anything? Will it help me in another way? What did we do? So what? Now what? (I, 29, p. 3)

The Full-Value Contract

Project Adventure stressed cooperating, setting personal goals, and challenging oneself at one's own level of capability. The Full-Value Contract was an agreement made by each member of the group concerning what s/he was willing to do during the group experience (Project Adventure, 1991). The Full-Value Contract could be used among teachers or students. The purpose of the contract was to encourage individuals to set personal goals, cooperate, and challenge themselves in a safe and fun learning environment.

The Drexel Contract was a modified version of the Project Adventure Full-Value Contract. The contract provided guidelines to motivate students to challenge themselves, support and encourage others, and set personal goals. If a goal was to attempt to climb the "wall," a student who had weak arms and poor motor skills may realistically set a personal goal to reach half way up the wall. Conversely, another student who was strong and skillful may be able to set a goal to climb to the top of the wall. The emphasis was on developing a realistic personal goal. A difficult challenge for one student may be not difficult for another.

The Drexel Contract stated that students would make a commitment to try, encourage others' self-worth, support and acknowledge others, follow all safety rules, and strive for personal, academic, and physical excellence. In addition, the contract specified the role of the teacher. The teachers would create a safe environment, make the activities educational and adventurous, and strive for personal, academic, and physical excellence. The Drexel contract was displayed on a large wooden board at the entrance to the gymnasium and posted in every classroom.
Building Community Support

The staff at Drexel recognized the need for community support. The school had an open door policy and welcomed visitors. One of the six school-wide yearly themes was titled: Adventures in the Community. This theme attempted to provide students with an appreciation of the role and function of a community. For example, as part of community service, students were involved in a local recycling program.

Curriculum and Integration

Drexel provided clear statements concerning curriculum integration within the school program. Integration was based on a holistic view of education that highlighted students' attributes and emphasized physical education and academics. The school handbook stated:

The program teaches the [five] concepts in the classroom situation and through physical education. This integrated approach allows the students opportunities to use strengths and the environment to improve limitations. Students may have their "shining moment" during physical and/or academic tasks. Each discipline then interrelates in a unique way to support and develop the Project Adventure concepts. (DFYP, p. 7)

In terms of curriculum:

Units of study reflect the current area of focus [within the six themes that are used throughout the school year] and include the five concepts of trust, risk, challenge, cooperation, and problem solving. In their planning teachers note specific course of study objectives to be taught as well as Project Adventure concept objectives as the planning tools. Utilizing a hands-on approach, Drexel Project Adventure teachers develop multi-disciplinary units of study based on the school district's graded course of study. (DFYP, p. 6)

The Graded Course of Study for Physical Education

The school district's graded course of study contained guidelines and resources for teachers. In 1991 teachers from Drexel and Cornwall Schools were on the revision committee, so the document has been influenced by the Project Adventure philosophy. The course of study incorporated cooperative activities in one-third of its curriculum. Students
in physical education were graded Outstanding, Satisfactory, or Unsatisfactory for motor
ability, and 1 (strong), 2 (average), or 3 (weak) for effort. A guideline for appropriate
allocation of content to weeks of the school year from the school district graded course of
study (GCS) appears in Appendix C.

The GCS provided suggestions for warm-ups, closure activities, ways to manage
students, and outline lessons and unit planning formats (GCS, p. 1-4). Teaching
objectives were provided for each grade level and activities to meet objectives were
suggested (GCS, p. 5-58). Graded course of study objectives for grade levels 3 and 5
appear in Appendix D, since these grades were followed in this study. In addition, the
GCS included an outline of resources for teachers and examples of lessons planned for
different content areas.

With one third of the GCS based on cooperative activities, there was an expectation
that cooperative activities would be infused into the curriculum. Explanations and
suggestions for cooperative activities were closely aligned to the Project Adventure Model.
For example, the GCS suggested that at times the teacher should act as a "leader" of the
group or class under his/her instruction, utilizing a less direct style of teaching. The
teacher, when acting as a leader, should "step back and let the group discover their
individual strengths and capabilities" (GCS, p.4). In this situation the teacher's role was to
facilitate the group, not direct it. In addition, details on spotting, briefs and debriefs, and
the Full-Value Contract were described. Included in the GCS were objectives for
cooperative activities at each grade level and descriptions of cooperative games for each
grade. For example, there were eight cooperative games for grade 3 and eight for grade 5.
Examples of the cooperative objectives cited for grade 3 and 5 are:

2.03 Recognizes the interdependency of participants (grade 3)
Defends his or her view about cooperative games issues (grade 5). These were included to provide an example of the specific GCS objectives. In the revised GCS (1992) the cooperative activities were infused into the physical education content areas.

Margaret stated that two thirds of her curriculum was based on the school district's graded course of study and the other third included the adventure education activities. Grades kindergarten (K) to two experienced accessible challenges, third grade experienced initiatives, and grades four and five were introduced to the high ropes course (Table 1). All students were provided overnight camping experiences, with K through second grade staying at the school for one night and grades three through five camping for three days and two nights. In the climbing unit, the primary grades were introduced to the climbing, while intermediate grades used harnesses. In addition, students participated in several special events, such as a field day and "Jump Rope for Heart" day.

Typically K through third grade students had two 30 minute physical education classes per week while grades four and five had one, one hour physical education class every week. During the climbing unit 75 minutes a week was allocated for third through fifth grade classes. When the students visited the adventure education center they were there for a three hour session which was a morning or afternoon of school time. Grade three had one three hour initiative experience and grade five had one initiative and a high rope experience during the 1992-3 school year.

The Physical Educator

Margaret was the physical educator at Drexel Alternative School. In addition to teaching the graded course of study for physical education and organizing climbing, initiative, and accessible challenge courses, she organized the school shop, intra-murals, and the school camping program. She was expected to work with other staff to integrate different subject matter content to one of six themes chosen for the year.
Margaret developed a lesson plan for each two weeks of the climbing unit and every week of the manipulatives unit. These were one to three page documents providing objectives, equipment required, previous material to review, new content, questions for students, and variations to be used at different grade levels. Pre-planning involved the design of a weekly brief that the classroom teacher used prior to physical education. These briefs related to skill, safety and/or the behavioral focus for that week. Margaret Ranger's yearly plan appears in Appendix E.

Table 1

<table>
<thead>
<tr>
<th>Adventure education activities at Drexel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>Camp</td>
</tr>
<tr>
<td>Climbing</td>
</tr>
<tr>
<td>Initiatives</td>
</tr>
<tr>
<td>High ropes</td>
</tr>
<tr>
<td>Accessible Challenges</td>
</tr>
</tbody>
</table>
2. What was the operational curriculum of the physical education program?

The main sources of data for the question were the modified version of the task structure observational system and field notes. The task structure observational system provided a description of tasks that occurred during the units while the field notes added information and a context for analysis. Each phase of the manipulatives unit and climbing unit was characterized by different tasks that facilitated the goals of that phase and established an instructional climate to achieve goals.

2.1 How was the content organized and presented to students?

A description of the type and number of lesson episodes, and percentage of the total lesson time are presented in Tables 3 and 5. Because the lessons ranged from 30:00 to 62:30 in the manipulatives unit and from 44:00 to 76:00 in the climbing unit, percentage of total class time was a better indicator of how time was spent.

The tables do not include the time spent performing a set warm-up routine which ranged from 1:56 to 3:21 in the manipulatives unit and from 1:51 to 2:50 in the climbing unit. All lessons began with a warm-up routine. In the manipulatives unit Margaret provided a series of instructions related to the tasks, then students organized themselves in partners or groups that were often directed by the teacher in guided or independent practice. In the climbing unit Margaret provided a series of instructions related to specific tasks, followed by students moving to group activities at different locations. Most of the tasks were cooperative in nature and were practiced in pairs or small groups. Generally, the assigned tasks for grade three and grade five were similar. Tables were organized by grade level with grade three lessons followed by grade five lessons to focus on the distribution of time and tasks by grade level. Lessons observed at Drexel appear in Table 2.
Table 2

**Drexel Lessons Observed**

<table>
<thead>
<tr>
<th>Manipulatives Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson</td>
</tr>
<tr>
<td>One</td>
</tr>
<tr>
<td>Three</td>
</tr>
<tr>
<td>Four</td>
</tr>
<tr>
<td>Six</td>
</tr>
<tr>
<td>Eight</td>
</tr>
<tr>
<td>Ten</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Climbing Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson</td>
</tr>
<tr>
<td>One</td>
</tr>
<tr>
<td>Three</td>
</tr>
<tr>
<td>Five</td>
</tr>
<tr>
<td>Seven</td>
</tr>
<tr>
<td>Nine</td>
</tr>
<tr>
<td>Eleven</td>
</tr>
</tbody>
</table>

* Not systematically observed
Components of the task system

Manipulatives Unit

Lesson episodes of the manipulatives unit were transition, wait time, instruction, and practice time (Table 3). Transition (10.9%) and wait time (3.6%) on average did not consume large amounts of lesson time. Transition was made up of entry into the gym before warm-up and movement between tasks. Initial lesson time was coded as transition time since each class was pre-programmed to enter the gymnasium and initiate their warm-up immediately. Management time, defined as non-substantive time such as roll taking, announcements, and other breaks in the lesson content, was not observed at Drexel. Wait time, 3.6% of total lesson time, occurred when students were waiting for an opportunity to participate in an activity or for other students to pay attention to the teacher.

Instruction varied between 20.3% and 46.5% of the lesson, with an average of 35.1%. Time allocated to instruction decreased in the last lesson to 20.3%. Margaret utilized guided practice which involved a number of different instructional episodes. The instruction time can be characterized as having short instruction periods related to specific tasks. In this unit Margaret often provided a series of instructions related to the tasks, followed by students moving into pair or group activities that were mostly directed by the teacher. At times, students were assigned to independent practice to develop their skill.

Margaret utilized a large number of instructional tasks. As an example, in lesson two, for fifth grade students, she broke the lesson into three parts. In the first part students manipulated different objects (e.g. balloons, cubes, and bean bags) and were asked questions about how the objects could be manipulated. Margaret provided three questions to guide student discovery: "which objects could fly the best? which objects could bounce the best? which objects could roll the best?" In the second part of the lesson students were involved in a game called "Odds and Evens," which involved the cooperating teacher calling out math problems and students finding and placing a tennis ball in a bucket with
<table>
<thead>
<tr>
<th>Lesson Number</th>
<th>Lesson Duration</th>
<th>Transition</th>
<th>Wait Time</th>
<th>Instruction</th>
<th>Engaged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3</td>
<td></td>
<td>% F</td>
<td>% F</td>
<td>% F</td>
<td>% F</td>
</tr>
<tr>
<td>One</td>
<td>34:00</td>
<td>11.1 (16)</td>
<td>3.5 (5)</td>
<td>42.5 (21)</td>
<td>37.7 (14)</td>
</tr>
<tr>
<td>Three</td>
<td>35:00</td>
<td>6.4 (12)</td>
<td>6.9 (5)</td>
<td>38.1 (17)</td>
<td>41.1 (13)</td>
</tr>
<tr>
<td>Four</td>
<td>32:00</td>
<td>10.3 (12)</td>
<td>4.6 (7)</td>
<td>28.0 (15)</td>
<td>48.4 (9)</td>
</tr>
<tr>
<td>Six</td>
<td>32:30</td>
<td>8.9 (8)</td>
<td>5.3 (6)</td>
<td>42.8 (7)</td>
<td>37.2 (9)</td>
</tr>
<tr>
<td>Eight</td>
<td>30:00</td>
<td>6.9 (6)</td>
<td>1.5 (2)</td>
<td>46.5 (11)</td>
<td>34.9 (6)</td>
</tr>
<tr>
<td>Ten</td>
<td>33:00</td>
<td>13.8 (9)</td>
<td>2.1 (3)</td>
<td>20.3 (6)</td>
<td>56.9 (8)</td>
</tr>
<tr>
<td>Grade 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>59:30</td>
<td>14.2 (21)</td>
<td>4.4 (8)</td>
<td>38.9 (29)</td>
<td>35.4 (16)</td>
</tr>
<tr>
<td>Five</td>
<td>60:20</td>
<td>9.9 (15)</td>
<td>1.5 (5)</td>
<td>27.7 (15)</td>
<td>56.1 (11)</td>
</tr>
<tr>
<td>Seven</td>
<td>57:30</td>
<td>15.2 (12)</td>
<td>4.8 (9)</td>
<td>25.8 (10)</td>
<td>48.0 (10)</td>
</tr>
<tr>
<td>Nine</td>
<td>62:30</td>
<td>11.6 (11)</td>
<td>1.7 (5)</td>
<td>40.3 (18)</td>
<td>36.8 (13)</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>10.8 (12.2)</td>
<td>3.6 (5.5)</td>
<td>35.1 (14.8)</td>
<td>43.2 (10.9)</td>
</tr>
</tbody>
</table>
the correct numerical answer printed on it. In part three the students dribbled basketballs (Drexel Field Notes (DFN), p. 11). This three-part lesson resulted in a large number (16) of different tasks and took 38.9% of the instructional time.

Engaged time included students involved in informing, refining, extending, applying, and cognitive tasks and ranged from 34.9% to 56.9% of total lesson time. Tasks included manipulation of objects, an introduction to basic basketball skills, and an introduction to basic volleyball skills. The lowest practice times, which occurred in lesson 8 (34.9%), lesson 2 (35.4%), lesson 6 (37.2%), lesson 9 (36.8%), and lesson 1 (37.7%), corresponded to high instruction time, ranging from 38.9% to 46.5%, approximately 40% of the total lesson time. Conversely, those lessons that had high practice time, lesson 10 (56.9%), lesson 5 (56.1%), lesson 4 (48.4%), and lesson 7 (48.0%), had lower instruction time, ranging from 20.3% to 28%. These data suggested that high instruction time reduced the time allocated to practice time. In contrast, when Margaret reduced her instruction time to less than 30%, activity time increased to approximately 50% of total lesson time.

The type of task, number of episodes, and the percentage of total lesson time are presented in Table 4. Engaged time was calculated from the instructional tasks of informing, refining, extending, applying, and cognitive categories. Applying (40.7%) and informing tasks (25.2 %) were the most frequent types of tasks within practice time utilized by Margaret. These were followed by extending tasks (18.4%) and cognitive tasks (12.1%). Refining tasks (3.5%) were the least often utilized.

The emphasis on applying tasks required students to use basic skills in modified game situations. In six of the lessons over 50% of the practice time was comprised of applying tasks. Examples of these tasks were shadow tag dribbling, "Odds and Evens,"
Table 4

Drexel Percentage, Frequency, and Tasks by Lesson for the Manipulatives Unit

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Total Engaged Time</th>
<th>Informing</th>
<th>Refining</th>
<th>Extending</th>
<th>Applying</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%_F</td>
<td>%_F</td>
<td>%_F</td>
<td>%_F</td>
<td>%_F</td>
<td>%_F</td>
</tr>
<tr>
<td>Grade 3</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>One</td>
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<td>*</td>
<td>*</td>
<td>41.6 (7)</td>
<td>50.1 (10)</td>
</tr>
<tr>
<td>Three</td>
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<td>8.8 (1)</td>
<td>9.0 (1)</td>
<td>11.2 (2)</td>
<td>56.2 (11)</td>
<td>14.8 (6)</td>
</tr>
<tr>
<td>Four</td>
<td>48.4 (9)</td>
<td>41.8 (4)</td>
<td>*</td>
<td>2.5 (2)</td>
<td>54.9 (3)</td>
<td>*</td>
</tr>
<tr>
<td>Six</td>
<td>36.8 (9)</td>
<td>30.9 (2)</td>
<td>*</td>
<td>54.6 (6)</td>
<td>14.5 (1)</td>
<td>*</td>
</tr>
<tr>
<td>Eight</td>
<td>34.9 (6)</td>
<td>36.1 (3)</td>
<td>25.8 (2)</td>
<td>38.1 (1)</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Ten</td>
<td>56.9 (8)</td>
<td>25.7 (2)</td>
<td>*</td>
<td>2.6 (2)</td>
<td>60.1 (3)</td>
<td>11.6 (1)</td>
</tr>
<tr>
<td>Grade 5</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>35.4 (16)</td>
<td>10.2 (3)</td>
<td>0.6 (1)</td>
<td>9.9 (3)</td>
<td>59.0 (13)</td>
<td>20.3 (5)</td>
</tr>
<tr>
<td>Five</td>
<td>56.1 (14)</td>
<td>30.7 (4)</td>
<td>*</td>
<td>*</td>
<td>59.2 (5)</td>
<td>10.2 (2)</td>
</tr>
<tr>
<td>Seven</td>
<td>48.0 (10)</td>
<td>18.5 (2)</td>
<td>*</td>
<td>25.0 (6)</td>
<td>52.1 (1)</td>
<td>4.4 (2)</td>
</tr>
<tr>
<td>Nine</td>
<td>36.8 (13)</td>
<td>40.7 (6)</td>
<td>*</td>
<td>40.2 (5)</td>
<td>9.7 (1)</td>
<td>9.4 (1)</td>
</tr>
<tr>
<td>Average</td>
<td>43.2 (10.9)</td>
<td>25.2 (3)</td>
<td>3.5 (0.4)</td>
<td>18.4 (2.7)</td>
<td>40.7 (4.4)</td>
<td>12.1 (2.7)</td>
</tr>
</tbody>
</table>

* Asterisk indicates no task was observed in this category.
and modified basketball. Applying tasks were not observed in lesson 8 when Margaret focused on teaching the basic volleyball skills of bump and set. The data represent a pattern where basic skills were introduced followed by modified games. During games Margaret provided mostly positive general and some corrective feedback related to the tasks.

Informing tasks were present in every lesson and provided initial information about the tasks. In six of the lessons, close to 30% of the tasks during practice time were informing tasks. In these lessons Margaret introduced basic basketball and volleyball skills. In lesson 7 the relatively low percentage of informing tasks (18.5%) was related to the content. In this lesson, time was allocated to extending and applying tasks students had been exposed to previously.

Extending tasks were present in all but two of the manipulatives lessons. Extending tasks ranged from 2.5% to 54.6% of practice time. In lesson 6 (54.6%) and lesson 7 (25.0%) the students were involved in a basketball circuit to develop their dribbling, passing, and shooting skills, although grade three had twice the time practicing extending tasks than grade five. In their first volleyball classes grade three (lesson 8, 38.1%) and grade five (9 lesson, 40.2%) students were exposed to basic volleyball skills of bump and set that were immediately extended.

Margaret allocated little time for refining tasks. The exception was lesson eight in which two refining tasks were utilized. This was the first volleyball lesson for grade three and she modified two tasks to focus on hitting the ball high so that students would have more success in the task (DFN, p. 35). The infrequency of extending and refining tasks did not allow much opportunity for skill development.

Cognitive tasks appeared in 7 of the 10 manipulative lessons. In this unit these tasks were related to problem solving. The cognitive tasks in lesson one (50.1% of practice time) were based on a series of questions posed by Margaret to the students
concerning manipulation of various balls and objects and whether they could fly, bounce, and/or roll as described earlier. The high percentage of cognitive tasks in the first three lessons corresponded to the low percentage of informing tasks. In these lessons Margaret encouraged students to think about the content instead of giving them information. She did not emphasize cognitive tasks when teaching traditional basketball and volleyball skills.

Climbing Unit

The components of the climbing unit were transition, wait time, instruction, and practice time (Table 5). The lesson times ranged from 44:00 to 75:00. Transition made up an average of 6.6% and wait time an average of 3.4% of total lesson time.

Instruction time was lower than in the manipulatives unit and varied from 3.1% to 39.2%. In the first 6 lessons it ranged from 19.7% to 39.2%, but was of shorter duration in the last 6 lessons, ranging from 3.1% to 10.3%. Instruction was lower in the second half of the unit because students had learned routines, procedures, and safety rules. Instruction in the first half of the unit involved Margaret's providing details of the various tasks and establishing safety rules, and introducing high risk climbing activities in lessons five and six. Following initial instruction, students would get into groups and put on their climbing equipment (harness and helmet). If they were involved in a high risk activity, they would hook up to a belay system and be checked by Margaret or the classroom teacher before they could participate.

Engaged time was higher than in the manipulatives unit and ranged from 47.5% to 85.7% of total lesson time. Only one lesson had practice time below 50%. Engaged was made up of cooperating tasks and safety tasks. Following lesson five, practice time increased to 71.0% of lesson time and remained high for the remainder of the unit.

The task type, percentage of lesson time, and the number of instructional episodes for the climbing unit appear in Table 6. Engaged time was calculated from the cooperative, safety, and cognitive tasks.
Table 5

Drexel Students' Percentage of Lesson Time and Frequency of Instructional Episodes for the Climbing Unit

<table>
<thead>
<tr>
<th>Lesson Episode</th>
<th>Lesson Number</th>
<th>Lesson Duration</th>
<th>Transition %</th>
<th>Wait Time %</th>
<th>Instruction %</th>
<th>Engaged %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3</td>
<td>One</td>
<td>73:00</td>
<td>4.8 (5)</td>
<td>1.6 (2)</td>
<td>33.7 (6)</td>
<td>56.0 (6)</td>
</tr>
<tr>
<td></td>
<td>Three</td>
<td>68:10</td>
<td>7.9 (6)</td>
<td>0.8 (1)</td>
<td>39.2 (6)</td>
<td>47.5 (4)</td>
</tr>
<tr>
<td></td>
<td>Five</td>
<td>63:00</td>
<td>4.1 (5)</td>
<td>0.4 (1)</td>
<td>27.8 (3)</td>
<td>63.1 (4)</td>
</tr>
<tr>
<td></td>
<td>Seven</td>
<td>67:00</td>
<td>3.2 (7)</td>
<td>0.2 (1)</td>
<td>6.3 (1)</td>
<td>85.7 (6)</td>
</tr>
<tr>
<td></td>
<td>Nine</td>
<td>46:00</td>
<td>6.7 (3)</td>
<td>4.8 (1)</td>
<td>4.3 (1)</td>
<td>79.1 (9)</td>
</tr>
<tr>
<td></td>
<td>Eleven</td>
<td>73:00</td>
<td>6.8 (8)</td>
<td>2.8 (3)</td>
<td>3.1 (1)</td>
<td>84.3 (8)</td>
</tr>
<tr>
<td>Grade 5</td>
<td>Two</td>
<td>66:00</td>
<td>12.8 (7)</td>
<td>4.5 (3)</td>
<td>23.0 (3)</td>
<td>56.3 (6)</td>
</tr>
<tr>
<td></td>
<td>Four</td>
<td>66:00</td>
<td>3.7 (5)</td>
<td>7.0 (4)</td>
<td>29.9 (5)</td>
<td>57.0 (4)</td>
</tr>
<tr>
<td></td>
<td>Six</td>
<td>75:00</td>
<td>4.0 (5)</td>
<td>2.7 (4)</td>
<td>19.7 (6)</td>
<td>71.0 (5)</td>
</tr>
<tr>
<td></td>
<td>Eight</td>
<td>60:00</td>
<td>5.3 (4)</td>
<td>4.9 (4)</td>
<td>6.1 (1)</td>
<td>81.0 (8)</td>
</tr>
<tr>
<td></td>
<td>Ten</td>
<td>44:00</td>
<td>11.1 (4)</td>
<td>0.7 (1)</td>
<td>10.3 (2)</td>
<td>73.7 (6)</td>
</tr>
<tr>
<td></td>
<td>Twelve</td>
<td>74:00</td>
<td>7.0 (6)</td>
<td>5.5 (4)</td>
<td>4.8 (3)</td>
<td>75.5 (10)</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td>6.6 (5.3)</td>
<td>3.4 (2.3)</td>
<td>16.5 (3.1)</td>
<td>69.2 (7.6)</td>
</tr>
</tbody>
</table>
A cooperative task included climbing a wall, belaying, or working with a group in some way to achieve a task. In cooperative tasks students worked together to achieve a stated task. What distinguished these from cognitive tasks was that in cooperative tasks students were physically engaged. Each task was a challenge that had no specified solution as students were to choose their way to achieve the task. In the climbing unit Margaret was less directive than in the manipulatives unit.

Cooperative tasks comprised the majority of the tasks and ranged from 27.9% to 100% of practice time. The first four lessons involved low risk activities that did not require helmets, harnesses, or belaying equipment and therefore did not require safety tasks. Lessons 9 and 10 had a lower percentage of time devoted to cooperative tasks because the lessons were shorter in duration (Table 5). A description of the tasks appears in Appendix F. More of the Project Adventure concepts were evident in the climbing unit tasks than in the manipulatives unit tasks. In the climbing unit each task involved some level of risk, trust, challenge, problem solving, cooperation, and/or communication. For example, if a student wanted to climb the wall, first she had to trust the equipment and her group to keep her safe. She had to challenge herself at her own level. She knew that the ultimate goal was to climb to the platform 20 feet off the gymnasium floor, but she could choose her personal goal, such as climbing up half way or even attempting to climb the wall. She had the choice; she didn't have to climb the wall. When on the wall she had to decide which route to climb. There was risk involved; she might fall and the group might not catch her. She had to cooperate with her group to provide her with the opportunity to climb and help belay when she was not climbing. She had to communicate with her group from the beginning until the end of her climb.
Table 6

**Drexel Percentage and Frequency of Tasks by Lesson for the Climbing Unit**

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Total Engaged Time %_F</th>
<th>Cooperative %_F</th>
<th>Safety %_F</th>
<th>Cognitive %_F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>56.0 (6)</td>
<td>100 (6)</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Three</td>
<td>47.5 (4)</td>
<td>100 (4)</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Five</td>
<td>63.1 (4)</td>
<td>40.4 (2)</td>
<td>59.6 (2)</td>
<td>*</td>
</tr>
<tr>
<td>Seven</td>
<td>85.7 (6)</td>
<td>54.8 (3)</td>
<td>45.1 (2)</td>
<td>0.3 (1)</td>
</tr>
<tr>
<td>Nine</td>
<td>79.1 (9)</td>
<td>27.9 (4)</td>
<td>67.4 (3)</td>
<td>4.7 (2)</td>
</tr>
<tr>
<td>Eleven</td>
<td>84.3 (8)</td>
<td>55.9 (5)</td>
<td>44.1 (3)</td>
<td>*</td>
</tr>
<tr>
<td>Grade 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>56.3 (6)</td>
<td>100 (6)</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Four</td>
<td>57.0 (4)</td>
<td>100 (4)</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Six</td>
<td>71.0 (5)</td>
<td>55.4 (2)</td>
<td>39.4 (2)</td>
<td>5.2 (1)</td>
</tr>
<tr>
<td>Eight</td>
<td>81.0 (8)</td>
<td>47.9 (4)</td>
<td>52.1 (4)</td>
<td>*</td>
</tr>
<tr>
<td>Ten</td>
<td>73.7 (6)</td>
<td>40.4 (3)</td>
<td>59.6 (3)</td>
<td>*</td>
</tr>
<tr>
<td>Twelve</td>
<td>75.5 (10)</td>
<td>57.2 (4)</td>
<td>38.5 (4)</td>
<td>4.2 (2)</td>
</tr>
<tr>
<td>Average</td>
<td>69.2 (7.6)</td>
<td>65.0 (4.7)</td>
<td>33.8 (2.3)</td>
<td>1.2 (0.5)</td>
</tr>
</tbody>
</table>

* Asterisk indicates no task was observed in this category.
Safety tasks made up a large percentage of lesson time during the climbing unit. Safety tasks were not included until the fifth lesson when high risk climbing activities commenced. Students spent from 38.5% to 67.4% of practice time in safety tasks in the remaining 8 lessons. Safety tasks were specific routine tasks that involved putting on or taking off climbing equipment. This equipment, essential for safe participation in the activities, included harnesses, helmets, and/or belay systems.

In the climbing unit there were only four lessons with cognitive tasks coded, lesson 6 (5.2%), lesson 7 (0.3%), lesson 9 (4.7%), and lesson 12 (4.2%). At the end of lesson 6 Margaret spent time on a debrief. She explained to the students that she was not happy with their behavior in the last 10 minutes of the lesson and she asked them for suggestions of how they could remain on the stated task for the 75 minutes allocated for physical education lessons. Several students provided suggestions about how to deal with their behavior, and the most frequently recorded one was putting off-task students on the stage (the time-out location). There was not a consensus reached in the interaction between Margaret and students, but students had the opportunity to express their opinions and they left to ponder the problem of how to use the full class time before the next physical education lesson (DFN, p. 10). When asked in the post-lesson interviews students suggested that they should challenge themselves to be active for all the next lesson. In lesson 9 a cognitive task occurred when, guided by the teacher, Adam provided Ron with information about the skill required to succeed on the initial section of the ultimate challenge. This was an example of Margaret encouraging one student to help another achieve the previously stated task. In lesson 7 Jay and Suzie quickly discussed their options for the next activity; similarly, in lesson 12 Rex and Annie discussed which station they would go to next while they waited to participate on the ultimate challenge.
Brief and Debrief

At the beginning of each week Margaret prepared a brief for the classroom teachers to read to their students before coming to physical education. These briefs were designed to prepare and organize students to participate in physical activity. Debriefs occurred in five of the 22 lessons observed in the two units. In addition to lesson 6 of the climbing unit (previously discussed), debriefs occurred in lesson 5 (9.6%), lesson 7 (3.1%), lesson 9 (9.4%), and lesson 10 (11.6%) of the manipulatives unit. The most frequent topics discussed in debriefs during the manipulatives unit were volleyball and basketball skills and competition. For example, in lesson 9 Margaret asked the students how they should play in a game situation. The students commented that they should "work together" and "talk nice" to each other during the game and competition "should be kept in the gym." In debriefs students talked about not making the loser feel bad and keeping competition out of the classrooms, halls, and/or playground.

2.2 What were the students' motor responses during the physical education content?

In this study students' physical responses were analyzed in relation to congruence of task to specified instruction and appropriateness or inappropriateness of student motor responses. The manipulatives unit will be described first, followed by the climbing unit. In the manipulatives unit student activity time, opportunities to respond, congruence of the response to the stated task, and appropriateness of the response to instructional tasks are presented in Table 7.

Manipulatives Unit

Congruence ranged from 66.7% to 100%, with only two lessons below 80%. In the first three lessons the tasks were basic manipulation of objects in which target students were recorded on the stated task 100% of the time. During the basketball lessons students were successful over 90% of the time. However, in the volleyball lessons students modified tasks down in lesson 8 (78.2%), lesson 9 (82.4%), and lesson 10 (66.7%).
Table 7

Drexel Students' Congruence, Opportunities to Respond, and Appropriate Response to Instructional Tasks in the Manipulatives Unit

<table>
<thead>
<tr>
<th>Lesson Number</th>
<th>Lesson Time Min</th>
<th>Dribble Time Min</th>
<th>Congruence Percent</th>
<th>OTRs * A/I</th>
<th>OTRs #/Min</th>
<th>Appropriate Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>34:00</td>
<td></td>
<td>100</td>
<td>54/0</td>
<td>8.3</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>35:00</td>
<td>6:42</td>
<td>100</td>
<td>63/0</td>
<td>5.3</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>32:00</td>
<td>4:43</td>
<td>94.0</td>
<td>79/7</td>
<td>5.5</td>
<td>91.2</td>
</tr>
<tr>
<td>6</td>
<td>32:30</td>
<td>8:13</td>
<td>88.1</td>
<td>54/5</td>
<td>4.3</td>
<td>91.5</td>
</tr>
<tr>
<td>8</td>
<td>30:00</td>
<td></td>
<td>78.2</td>
<td>58/20</td>
<td>7.4</td>
<td>74.3</td>
</tr>
<tr>
<td>10</td>
<td>32:00</td>
<td></td>
<td>66.7</td>
<td>31/8</td>
<td>2.4</td>
<td>67.3</td>
</tr>
<tr>
<td>Grade 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>59:30</td>
<td>9:09</td>
<td>100</td>
<td>33/0</td>
<td>2.9</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>60:20</td>
<td>5:36</td>
<td>83.9</td>
<td>105/6</td>
<td>3.7</td>
<td>91.3</td>
</tr>
<tr>
<td>7</td>
<td>57:30</td>
<td>0:56</td>
<td>94.6</td>
<td>81/12</td>
<td>4.4</td>
<td>87.0</td>
</tr>
<tr>
<td>9</td>
<td>62:30</td>
<td></td>
<td>82.4</td>
<td>106/25</td>
<td>5.7</td>
<td>81.5</td>
</tr>
</tbody>
</table>

* OTRs were coded appropriate or inappropriate.

Grade three had difficulty with the tasks in lesson 10. When Margaret observed inappropriate form she would correct topographical errors. In these last three lessons she introduced students to basic volleyball skills of bump, set, and serve and then moved into a modified volleyball game. The volleyball games were modified to allow students to take more than three hits on their side of the net to allow for the game to flow. Also, a team could score without having to serve.
Opportunities to respond (OTRs) ranged from 33 to 131 per lesson. However, due to the large range in lesson time, rate was a more appropriate measure for comparison. The rate of OTRs for the target student ranged from 2.4 to 8.3 per minute of practice time. In lesson one, with 8.3 OTRs per minute, students participated in a number of basic activities manipulating objects. In lesson 10, with 2.4 OTRs per minute, students played a modified volleyball game where there were fewer OTRs. When students were involved in a modified basketball game with one or two balls among half the class or the entire class group, OTRs were less frequent. For example, in lesson five and lesson seven fifth grade students participated in a game called "Steal the Bacon." The class was divided in two teams, students paired off, and lined up opposite each other. When the teacher called their number the students ran into the center of the gym, took a basketball from the team's hoop, dribbled down to their end, and tried to shoot a basket.

Due the the high number of motor responses when dribbling a basketball, duration of basketball dribbling was recorded in lessons two to seven (Table 7, Dribble time). At times dribbling took up a large percentage of lesson time. For example, in Lesson 2 while OTRs were 2.9 per minute of practice time, the target students also spent 9:09 (16.5% of the total lesson time) minutes dribbling a basketball. Every student had a ball for dribbling and consequently the task response rate was high.

Opportunities to respond involved a quality analysis and were recorded as either appropriate or inappropriate. An appropriate response was recorded when a student performed the task at an acceptable level that would yield a high probability of successful engagement. Appropriate responses ranged from 67.3% to 100%. The percentage of appropriate responses decreased throughout the unit in both grades. Student performance was appropriate with introductory tasks (100%), while more difficult tasks had lower percentages of appropriate responses with volleyball skills in lesson 8 (74.3%), lesson 9 (81.5%), and lesson 10 (67.3%). In lesson 10 students played a modified volleyball
game. The students modified down the bump and set skills, as these tasks were too difficult for most to master.

**Climbing unit**

In the climbing unit the activities were designed to allow students to choose from a number of tasks. By the end of the unit students rotated around a choice of nine different stations. There was choice within a structured environment. Due to the nature of the tasks, where a student might spend the majority of the lesson either climbing the wall or helping a group member on the belay system, opportunity to respond data were not recorded. For example, in lessons five and six each target student attempted two different climbing tasks during the lesson. Since Margaret accepted a wide variety of student responses, there was no task modification in the climbing unit. Students were considered to be on-stated task, consequently congruence was recorded at 100%. Tasks were coded as appropriate because Margaret's emphasis was on students making a commitment to try the activities. It was a "work together and try-hard" emphasis. The quality of task execution was not emphasized. Margaret encouraged students to climb in their preferred manner and therefore no topographically correct form or direction was specified. If inappropriate behavior occurred, for example not spotting correctly, it was likely to be unsafe behavior. When noticed by Margaret or the classroom teacher, it resulted in a cue to change the inappropriate behavior. Inappropriate behavior was infrequent. The students appeared to know and understand what was expected of them since they had climbing units each year since grade one.

2.3 What was the instructional climate and how was it developed?

"Classroom climate refers to the positive, neutral, or negative affect exhibited by the teacher and the students." (Siedentop, 1991, p. 21)

Observations using the task structure observational system provided one lens for analysis. With the inclusion of field notes a richer picture was developed. The field notes
indicated that Margaret frequently monitored and interacted with students in different ways. She provided general, specific, and corrective feedback during the lessons, and post-task feedback. In addition, she frequently recognized students in a public manner. The ambiance of the gymnasium was positive, alive, and exciting. For example, the students' voices were loud and they cheered each other on to achieve their tasks. Students knew what a "put up" was and target students were often observed giving them. The term "put up" was used to describe any sign of support for another person and was encouraged and demonstrated in both units by Margaret and the classroom teacher. Examples of put ups could be giving "high fives" or some form of verbal praise.

In the climbing unit students were held accountable for cooperating (belaying, spotting). The climber was encouraged to try hard while the quality of task execution and task completion was not emphasized. Students did receive public recognition for completing tasks, but there were no negative consequences for not completing them. Margaret encouraged students to climb in their own preferred manner and therefore no topographically correct form or direction was specified. This lack of accountability for task completion and quality of task implementation explains how task congruence was recorded at 100%.

In the manipulatives unit Margaret held the students more accountable for task implementation and completion. She provided positive and specific feedback during guided practice. In the basketball and volleyball lessons specific tasks were presented (e.g. pass in volleyball) and students were not given task choices.

In both units Margaret frequently monitored and interacted with students. She held the students accountable for trying hard, cooperating, and appropriate conduct by providing positive general, specific, and corrective feedback during the lessons, and post-task feedback. In addition, she frequently recognized students in a public manner.
Margaret often provided post-task feedback related to effort and/or performance, saying such things as, "Well done Josh. I like the way you were spotting in close" (DFN, p. 16). In addition, she often took time to recognize students who achieved their goals and on several occasions made public the results of their performance during the lesson. All students who climbed to the wall platform were able to sign their name on the wall. Grade three students signed a poster if they walked or attempted to walk across the bean stalk unaided, while fifth grade students signed a poster for attempting or catching the trapeze. In addition, the four fifth grade students who made the Ultimate Challenge had their name announced over the school public address system and received a carabiner at the end of the year. The assembly at the end of the year recognized each successful student with an award for their achievements in the gymnasium. Achievement in this program was defined as a willingness for students to challenge themselves to attempt available tasks. Students who attempted and/or were successful on the trapeze and bean stalk received a certificate at the end of the year assembly. Out of the two classes observed there were 12 tries and 8 successful bean stalkers in grade three and 14 tries and 11 successful trapezers in grade five.

The instructional climate was created by positive interactions among Margaret, the classroom teachers, and students. This positive climate prevailed in the manipulatives and climbing unit. Some excerpts from the field notes are presented to describe teacher-to-student as well as student-to-student interactions.

In both units Margaret wanted to "catch" students behaving appropriately. She frequently reinforced their appropriate behavior. The field notes stated, "Today the warm-up person is organized and teacher comments: 'I like it when you can arrive and start your warm-up without me.'" (DFN, p. 34). In the climbing unit while Suzie was climbing the bean stalk she was supported by her group. "Way to go Suzie, Woo, Hoo," students cheered her on repeatedly. Margaret was also there to encourage and support her, saying "I
want you on my team, there you go Suzie." (DFN, p. 7). Students supported each other on the fidget ladder:

After completing the fidget ladder, Shona received a high five from the group as the next boy made it to the end of the fidget ladder on his stomach. Tim followed and was working hard and got a lot of cheers from his group. He made it and got a high 5 when he came over to the group. Members of the group offered suggestions to help encourage Natalie on the fidget ladder: 'spread yourself out Nat.' (DFN, p. 12)

Margaret wanted students to appreciate the support they had received in the climbing unit:

"Be sure to thank everyone who gave you a hand today. Tell them exactly what it was." (DFN, p. 14). In the manipulatives unit Margaret promoted a "fair play" attitude toward competition. After the games she frequently asked students to "go across the room and shake the hand of 3 people on the other team" (DFN, p. 35). The target students were observed shaking hands with, or giving high fives to at least three other students.

At the end of each lesson the researcher made a judgment about the classroom climate. The classroom climate was usually classified as a positive, vibrant, and/or motivating learning environment. Examples of the most frequent comments from the field notes included: "Positive, busy, and exciting learning environment with many activities occurring at one time. Students were on-stated task, not off-task" (DFN, p. 6). "Overall a positive learning environment with lots of put ups and student support for each other to achieve their personal goals" (DFN, p. 20).

Margaret and the classroom teacher had few discipline problems or off-task behaviors in the gymnasium. There were small amounts of discipline time in the manipulatives unit, ranging from 8 to 65 second intervals. Margaret controlled student behavior with short verbal desists (approximately 2 second intervals) and/or time-outs. She expected students to listen and did not allow students to bounce or move balls or sit on balls when she was providing instruction.
In the climbing unit Margaret publicly disciplined students in lesson two (6 seconds) and lesson three (12 seconds). There were few off-task behaviors recorded, most likely due to the active supervision of Margaret and the classroom teacher.

**Summary**

The results of Margaret Ranger's gymnasium ecology suggested that she was an efficient manager and organizer of her physical education environment. She presented content within a positive gymnasium climate where students were on the stated task the majority of the time. There was no management and low transition and wait times. In addition, there was a low frequency of off-tasks behaviors.

Instruction time varied greatly, making up an average of 35.1% of the lesson time in the manipulatives unit and 16.5% in the climbing unit. Target students were involved in practice time an average of 43.2% in the manipulatives unit and 69.2% in the climbing unit. Low instruction time in the second half of the climbing unit allowed for high practice time.

In conclusion, Margaret was effective in the way she organized and presented the content to her students. However, the student response data showed low opportunities to respond in the manipulatives unit which was a weakness in her teaching. The infrequency of extending and refining tasks demonstrated that this was not a skill based physical education program as defined in the literature (Siedentop, 1991; Rink, 1993). In the manipulatives unit Margaret's intention was to expose students to basic skills and then move them quickly onto a modified game. In the climbing unit Margaret provided students a wide choice of activities; this meant that the students were generally on the stated task, infrequently modified the task up or down, and were infrequently off-task. She held the students accountable for working together and trying hard by active supervision. The students' motor responses to tasks were generally successful and appropriate. However, in the last three lessons the quality of volleyball skills was lower, 67.3% to 81.5%. 
Margaret had developed a busy, positive, and exciting instructional climate in which the students enjoyed the lessons, were interested in the content, and wanted to participate in their physical education classes. The teacher's and students' perceptions of these classes and their physical education program are discussed in question three.

3. What were the teacher's and students' views of physical education?

3. 1 What were the teacher's espoused educational values and beliefs?

Margaret Ranger has taught physical education and health for 27 years. This included 3 years at the high school, 16 years at the middle school, and 8 years at her current elementary school. She holds a Masters Degree in Education with an additional 30 hours of graduate work. Margaret was trained in Adventures in the Classroom at Project Adventure in Massachusetts. She was certified as a "high ropes," "initiatives," and "accessible challenge" instructor. Margaret was on the staff of an adventure education center during her summer vacation as a programs' coordinator and trainer of prospective adventure education instructors. She has made presentations on adventure education at several professional meetings and inservice workshops for middle and high school teachers promoting adventure education in school curricula.

Margaret held values and beliefs that were central to who she was as a teacher and what she did in the gymnasium. She adopted the Project Adventure model because it was aligned with her educational values and beliefs. This model influenced the goals of her program, the instructional formats she utilized, the way content was designed and implemented, and her focus on an integrated approach to learning. Student success at their own level of ability was an underlying goal for her program. She wanted to have a positive impact on students' long-term attitudes and feelings about themselves and believed that this would enhance their self-esteem. Margaret believed the most effective way to achieve these goals was to use a student-centered teaching style and cooperative activities.
Project Adventure curriculum model

The Project Adventure model was closely aligned to Margaret Ranger's educational values and beliefs. One of the factors that attracted Margaret to adventure education was its reliance on cooperation, rather than competition, as a major goal of the program. The program's focus was closely aligned to her personal, as well as educational, values and beliefs.

I went to an adventure education center for a workshop with Rohnke [the director of Project Adventure], and I've really gotten into it because I'm not a competitive person . . . When this adventure stuff came I seem to really fit into it because it wasn't very competitive. It's the opposite of what coaching and athletics is all about. (I, 29, p. 1)

Margaret explained why she preferred this type of program. "To me [adventure education] seems more personal [than traditional physical education programs]. It seems more fun. It's more of a challenge for me I guess. I know it's more of a challenge for the kids because there's more concepts that they have to think about" (I, 30, p. 2).

The Drexel curriculum is a thematic approach to learning used throughout the school. The program's central foci are the five Project Adventure concepts of trust, risk, cooperation, challenge, and problem solving. "[We] try to provide different avenues for building self esteem. We do it with the five adventure words. They're everywhere in the building. If you ask kids what they mean they'd be able to tell you. We work on team support and cooperative learning" (I, 29, pp. 3, 4).

Margaret's personal ideas about the five Project Adventure concepts were similar to those of the school. In addition to the five concepts Margaret wanted to add communication as a school-wide focus. She believed teaching students to communicate effectively was an important element of her work. She defined communication as "being able to talk with other people without screaming at them. Without saying 'my way is the best way.' Being able to verbalize what you think. And being willing to listen to what they say. So it's the message between people." (I, 30, p. 20)
Goals of the program

Underlying Margaret's goals was her desire to influence not only the physical, but also the emotional, social, and cognitive development of her students. She wanted to have a positive impact on students' long-term attitudes and feelings about their own self-esteem, other students, and life-time physical activity. In order to change attitudes, she believed it was important for students of all skill levels to experience success in physical education.

Success would be for them to learn a little bit about the game. To understand the game. To be able to keep a game going and to have a good time and support one another and work on team stuff . . . If they're successful now and they think they're doing a good job even if it's not the greatest in the whole world, then when they get to middle school they'll attempt. If they are unsuccessful here, then when they get to middle school, they will say, "I can't do that. Why should I do that?" . . . Everybody needs to be successful at the beginning anyway.
(I, 25, p. 112)

Margaret felt that if every child were successful they would feel positive about themselves and develop high self-esteem.

Hopefully self-esteem is built. We try to get to every kid in terms of "that was good." Build self-esteem in a variety of ways. And make them feel good and make them feel that they want this and it's an important part of their . . . They want to come to school instead of staying home.
(I, 30, p. 29)

Margaret's goals for her program were developing basic motor skills, building social skills, having students take responsibility for their own learning, creating fun in learning, promoting a healthy lifestyle, and developing an appropriate attitude toward competition.

Developing motor skills

At the elementary level, Margaret believed students should develop skills like throwing, catching, jumping, running, and basic climbing. But she said "they do not need a lot of sports skills" (I, 29, p. 10).
Margaret explained the basic skills required at the beginning of the climbing unit as "safety for the belay: terms to use, try to actually belay someone, and what to do when a person comes down or goes up" (I, 6, p. 18).

Margaret described working with manipulating tennis balls and basketballs.

In both [third and fifth grade] classes we worked a little bit with manipulating tennis balls. Picking them up and sometimes throwing them or dropping them . . . Throwing them into a bucket, picking them up, rolling them over, doing stuff in your hands with them. Sometimes holding more than one at a time . . . [We started] basketball skills and the skill that we worked on today was dribbling. And controlling a dribble. When you do it, when you don't do it. How to do it with one hand or the other hand. Where it should be. How to manipulate as you change directions, turn, follow, all that stuff. (I, 17, p. 63)

Later in the unit Margaret wanted students in both third and fifth grades to improve their basketball skills. "The goals were improving dribbling skills and going through the passes that the kids need to learn. The short passes. Improving skill on those." (I, 20, p. 82).

Margaret believed it was important to quickly move into a game situation, although she spent more time on basic skills with third grade students than with fifth grade students. After an initial lesson on basic volleyball skills Margaret believed the fifth grade students should revisit the skills and then play a game. "My goals were to quickly review the skills that we had already done. Go over the skills they hadn't done which were rotating and serving and then get them into a game. Hopefully they would understand what the game was about" (I, 27, p. 122).

Building Social Skills

Acquiring interpersonal skills was an important goal for Margaret. For her this meant students learned to: communicate and cooperate with each other, consider other people's points of view, and resolve disagreements before they escalated into fights. At times, she believed that developing social skills was more beneficial to students than developing complex motor skills: "I don't know whether it's fortunate or unfortunate, but
sometimes I think more in terms, when I'm fitting my objectives into my lessons, sometimes I think more in terms of socialization than I do skill" (I, 30, p. 12).

Margaret explained why she believed helping students build social skills is becoming more important for modern urban school systems.

I think it has become a more important part in everybody's teaching ... Because of the stuff that occurs with kids ... Kids bring in knives to school and guns in some schools. I just don't understand it. So I think we need to make kids more aware of what they're doing. What's happening. And how it affects other people. Not just the kid that they're doing it to, but also to me. How it affects me if you punch somebody in my class if that were it. So socialization I think is a big part. I don't think it's happening in some of the homes and it's like everything else; the school has to do everything, so I think that's part of it. (I, 30, p. 11)

Margaret described ways to develop students' social skills by using cooperative activities.

You could start out by saying "get into a group." ... Now in your group let's have 3, 4 people that do specific jobs. Not the same job, but specific. One is a runner. One is a go-getter. One's a put-upper. One is a nose twinker, whatever, and they learn their jobs. And they learn their responsibilities. Then some kind of occurrence comes by and it affects this group. So now they know who is responsible for cleaning up the problem. Now we have to talk about why that affected us as a group, so we're still problem solving and talking and thinking and doing all that ... So they learn to talk to one another. (I, 30, p. 14)

Margaret believed that "an outgrowth of this socialization is developing positive emotional attitudes through thought, communication, listening, problem solving, and being honest in confrontations." (Margaret, Member Check 2)

Having Students Take Responsibility

Margaret believed that the more students acquired social skills, the more responsibility they could take for resolving their own problems. She wanted students to grow from depending on her to becoming independent learners. She provided opportunities for them to learn to make choices on their own, cooperate, problem solve, and be creative. During the activities Margaret also wanted students to attempt to work out
their own problems before coming to her for assistance. She believed that part of accepting responsibility for one's own learning involved working with, helping, and learning from other students. Margaret felt she gave students more freedom than in a traditional physical education program.

She described how developing students' social skills could help them take responsibility for their own behavior. When students become more responsible, discipline can become a group decision.

I get groups together, which is interesting, and I say “now you have four objects. I want you to figure out how to use those objects for a new game.” So they learn to talk to one another. They learn to use other ideas. They learn to listen. They learn to create and all of it goes together so that when a problem arises because somebody acted silly and hurt someone or hurt someone's feelings then you can go back and talk about it. (I, 30, pp. 14, 15)

During activities Margaret encouraged students to work out their problems before coming to her.

I try not to let the kids come up to me and squeal and say “so and so isn't doing what they're supposed to be doing.” I try to remind them that they're only responsible for themselves, and at this point for this skill, if they want to help the other person that would be fine, but they can just go ahead and do it on their own. (I, 30, p. 10)

However, Margaret believed that students can learn to become more responsible, independent learners. She encouraged higher skilled students to help lower skilled students and ultimately Margaret was there to assist them.

One of the goals I think that all the kids need to realize is that they can have help from other people. They don't always have to have help from me. I don't always have to give them the information. If there's somebody there that's just as good or knows the skill because they play outside school, then they can go ahead and help the person that's having a difficult time and they need to realize that there's help from other people. (I, 20, p. 83)
Creating fun in learning

Another important goal for Margaret was to create fun in learning. Margaret explained the type of atmosphere she preferred in her classroom and how she achieved that atmosphere.

I want an atmosphere where kids want to be there. Kids are there because they want to have fun. They want me to have fun because they want to learn, be positive, be creative. They want to help other people, they want me to have fun . . . [I create that atmosphere with] smiles, tell them they are great. By giving them pats on the back. Making it good, not putting on too many restrictions, but making sure they understand what the rules are.
(I, 29, p. 9)

She pointed out the importance of fun in her program. "I hope they're having fun because if they're not, it's not worth them being here. I think they have a good perception of the program." (I, 29, p. 11)

Margaret wanted students to develop positive attitudes about themselves, other students, and physical activity.

I'd like them to have a positive attitude toward doing something besides sitting and watching TV or playing video games. But also a positive attitude toward other people. If you're playing a game, be willing to be positive with people on your own team or the other team. "Hey, that was a good hit." That kind of stuff. But also in terms of following rules.
(I, 30, p. 16)

Promoting a healthy lifestyle

Margaret hoped if students had fun, they would develop positive attitudes toward physical activity and would want to participate in activities later in life. She believed one of the most important things she could do would be to positively influence students' attitudes toward lifetime activity and health. Margaret wanted to teach students to take responsibility for their own health.

They need to be responsible for their own health and nobody else cares, probably, if they get sick or get big and fat. It is up to them. It's not something you do when you're old and gray, but something you have to start when you're young . . . Teaching someone to shoot a basketball, other than people on basketball teams, how important is it? You have to
determine for yourself how important that skill is. Probably the most important stuff would be the long term stuff: health, the things you need to know about your body so you can maintain a good physical and social life. They need basic skills, [for example,] know how to walk backwards. They do not need a lot of sports skills. (I, 29, p. 10)

Margaret emphasized developing positive attitudes toward life-time physical activity rather than concentrating on complex skill development.

In terms of teaching the kids basic throwing, catching, walking, hopping, skipping, jumping they need to know that to go on, but when they're adults it's not going to make that big of a difference in their lives. The concept is that they need to learn that they have to be in charge of their lives and learn to make the right choices. Whether it's fitness or being on a softball team at some point in their lives. It's concepts rather than a lot of skills.

(1, 30, p. 33)

Margaret did not believe she had enough time with students to effect their present fitness levels. Therefore, she tried to make them aware of their own bodies and the ways they could remain healthy in the future.

I think that the amount of time that I have is not going to make a physical difference in these kids. I have one hour, once a week. I can't make those people fit. If I had three hours a week I could. I really couldn't make them, but I could provide an opportunity to be fit. So at this point if somebody never gets a skill perfectly, I can't dwell on that. But I think the more you hit them with social skills, the more capable they are at sifting through their needs and recognizing what they need to do to be fit. And who is going to be responsible for their fitness? I'm trying to make them aware and have them know the things that count --pulse, diet, all that stuff--is all that I can do in the amount of time that I have. They need to reason out how to become fit and stay that way. (I, 30, p. 12)

**Develop an appropriate attitude toward competition**

Margaret's last goal was to help students develop an appropriate attitude toward competition. She wanted to de-emphasize competition and encourage cooperation. She believed this type of program was more fun for her and her students, because she believed that competition could lead to negative feelings, fights, and feelings of discouragement. Margaret explained why she downplayed competition.
I think there's too much emphasis on competition. Our whole society is competitive. I think a lot of big corporations are figuring that out now. A lot of people are figuring that out now that it's not needed and I've never, ever been a real competitive person. So [adventure education] fits right into my personal philosophy. I don't like argument . . . and that seems to be what usually happens with a traditional program or competitive program . . . If it happens to be that [students] are negative when they're competitive, it's not as much fun. It's more fun this way and I think the kids have more fun. I do. (I, 30, pp. 4, 5)

Margaret thought that excessive competition could diminish the students' possibility for fun. "I try not to make winning and beating other people an outcome. I try to downplay all that even though that happens sometimes. I like the kids to have fun and accomplish something" (I, 30, p. 11).

Margaret believed that the students had internalized her notion of competition and did not want to win at all costs. She tried to discourage students on winning teams from bragging and putting down the losing teams. In support of this view she said that "it was nice at the end of class that there weren't kids yelling out 'we won, we won.' They were real cooperative and nearly everybody was there to have a good time instead of being a winner all the time" (I, 27, p. 123).

Because Margaret thought competition was inevitable, she believed students should learn how to deal with it. Her intention was to encourage students to compete against themselves and their previous individual or group performance rather than caring about beating someone else.

There's always competition. There's competition in Project Adventure. It might not always be against another person. It could be that I do a better job or that I'm faster against a time watch. Sometimes we do have competition and we're going to have it during physical education. But I try to downplay all that talk that everybody does and help students be better sports . . . Even in adventure education you do compete. There's lots of situations where "last time I got 12. Maybe I can get 15 this time." . . . You really can't eliminate competition from basketball. As soon as you have one team against the other there's competition. So we'll be doing some other things where it will be a whole group effort and it won't be as competitive. We can confuse the scoring to make it not so important. We
can score one team minus and the other team plus points. We can change the team to another court, but leave the score behind for a different team. (I, 20, p. 84)

Teaching Style

To achieve her six goals, Margaret believed she utilized a student-focused teaching style and cooperative activities.

Student Centered Learning

Margaret thought a student-centered teaching style was less directive than a traditional approach to teaching physical education and more aligned with her values and beliefs. She believed this approach helped students develop responsibility, decision-making skills, creativity, and cooperation.

Margaret explained how her teaching style differed from other physical education teachers. "I think I have the kids, I hope I do, have the activities that we do more student oriented than I used to in the past and I think most physical educators do direct type teaching rather than student directed" (I, 30, p. 1).

Margaret explained how the philosophy of her program differs from other schools in the district:

We are more personal with our kids, we are willing to listen to the kids, we are willing to involve kids in their own learning. We involve the parents as much as we can. It is all different! . . . We have the same [guidelines as the rest of the school district] but because of the philosophy of adventure based education, we make more of a connection with the kids, better than other programs, because of its nature: cooperation, listening, and communication. (I, 29, p. 8)

She explained some of the advantages of her teaching style.

I hope [my teaching style is] not directive. Of course, sometimes it has to be. I hope it is a mix, and telling kids, the direction of how to accomplish things. I provide a direction. I hope my style helps them to make decisions. The students help make decisions and learn to help one another. The students work together and contribute to parts of the lesson. (I, 29, p. 6)
Margaret described the types of tasks she gave students to involve them in their own learning.

I try to do investigatory type stuff a lot. "Can you? How will we?" Comparisons with kids answering. Set up situations and let the kids problem solve. Ask the kids. I often ask the kids what they want to do. I try to get the kids more involved in what's happening. (I, 30, p. 3)

She did not want all of the ideas to come from her: "I try to think of ways to get the kids to think all the time on something new because I like to learn new stuff too. And a lot of times they have good ideas that never even occurred to me" (I, 30, p. 11).

At times, Margaret debated how directive her teaching style should be. She was unsure about the amount of freedom to provide students. The dilemma for Margaret was whether to give students more choice to enhance their creativity or provide more structure to keep them more on-task. She described this conflict after one of her lessons.

The only thing that I would do [differently] probably would be try to gain more control so that they listened better, but then when you gain control you lose student self-direction . . . We lose some of their creativity too. I'm not saying that always they're most creative with their buddies but when you start putting restrictions on kids then you eliminate what they might do or what they might be . . . The creativity may vary. Like they wouldn't try as many things because they wouldn't feel as comfortable and my wait time might be less, but I would gain control and I'm not sure whether gaining control - I feel like - I think the way that we teach here you have to allow the kids to make choices . . . [and] learn to control themselves basically. (I, 25, p. 114-115)

One way Margaret believed she resolved this dilemma was to use more direct instruction at the beginning of a unit to ensure that fundamental motor skills were learned by all students. With that accomplished, she was more willing to give students ownership in how the lesson was organized, how groups were formed, and how the lesson might proceed.

Cooperative activities

Margaret viewed cooperative activities as valuable. She believed peer tutoring and working in groups helped students develop cognitive, social, emotional, and physical skills. Margaret established situations where students needed to cooperate to accomplish
tasks. She also encouraged them to help each other if a problem arose during their activities, believing this was essential among students of different skill levels. "With the team work and cooperative ideas, this helps develop their cognitive and social skills. The kids help kids. The kids make it work. There is a wide range of abilities but the cooperative activities help" (I, 29, p. 12).

Margaret explained some of the methods she used to promote cooperation.

In cooperative education, we have kids in teams helping each other, rather than individuals. And we create teams that have to accomplish something, either in physical education or in the classroom. We have students helping in different grade levels. In the third grade class we'll have the fifth graders helping. (I, 29, p. 2)

Margaret explained that cooperation is manifested in such activities as "peer tutoring, having students serve in groups with different jobs or responsibilities. Or students teaching skills to other students" (I, 30, p. 35). She believed that if higher-skilled students helped lower-skilled students, in addition to improving motor skills they could both learn social skills.

A lot of times I'll ask the kids, a partner to say if you know that your partner is doing something wrong please tell them. Make the correction instead of saying "oh he's doing this wrong." Instead of telling me about it, you make the correction. See if you can help your partner. So that's a technique but it's making people concerned for other people. (I, 30, p. 1)

Margaret recognized that cooperative activities may be preferable, but they were not a panacea. She believed the method did not work with some students, while for other students nothing seemed to work. "There are people who aren't adventure people. Sometimes they need another way. Sometimes they are just problems and no way is going to work" (I, 11, p. 38).

**Curricular Integration: Creating a whole school atmosphere**

Margaret believed it was important for her to educate not just the physical aspect of the child, but the emotional, social, and cognitive elements as well. Physical education was
a medium for the total development of the child. Therefore, in addition to teaching students motor skills, she tried to assign activities that motivated students to think, develop positive attitudes, and develop social skills. Margaret believed it was important for the entire school to work together to create a consistent and integrated school atmosphere.

Integration at Drexel occurred from the classroom to the gymnasium and from the gymnasium to the classroom. This connection between the different subject areas was enhanced by the brief, debrief, teachers' support of each other, and classroom teachers' presence at physical education lessons and their knowledge of what transpired in the gymnasium. Margaret saw a connection among different curriculum areas and believed it was beneficial for the students when different content areas were integrated.

Everything works together. So you need to keep it together. [Traditionally] it's like "now we will do art. Now we will do reading. Now we will do math." But there's math in reading and there's art in reading and there's physical education in reading and so why are we separating them? I think that's just a traditional concept that's gotten way out of control. (I, 30, p. 32)

Margaret felt that physical education was an indispensable part of students' overall growth and that her physical education program should be viewed as an integral part of the total curriculum.

I truly believe that a person develops mentally, emotionally, socially, and physically. And I think the socialization is a thing that we've left out the most. Schools traditionally go with "mentally" and "cognitively" . . . In my belief those things have to go together along with socialization and they're all important. Through these, the students develop emotionally to be a productive citizen. They all have to work, or the person is not functioning. You can't take physical education out. People have to have some level of fitness. They have to understand that this body supports that brain. If this body quits, then that brain is going to quit. Socialization is part of it also because that has to do with emotional health. (I, 30, p. 30)

Typically, adventure education is taught as a separate part of the physical education curriculum and included mostly outdoor activities. Margaret explained that unlike typical curricular adventure education, Project Adventure had been integrated throughout the whole curriculum at Drexel.
[Compared to] the traditional [adventure education] stuff - the atmosphere and the challenges are basically the same. Like there's challenge and they are still problem solving. And they are forced to work together and do all the things that we use in our terminology, but ... originally adventure education was only an aspect of the physical education or the physical and it didn't permeate everything, and here it goes into the classroom. It's out on the playground. It's walking through the hall. It's everywhere. (I, 30, pp. 6, 7)

From Margaret's perspective, teachers and administrators at Drexel promoted a consistent atmosphere throughout the program.

We incorporate the adventure concepts using all of the five words in every classroom and even in the whole program. Whether it's in the hallway or wherever it happens to be. So it's a total school concept instead of just a part of a program. One supports the other. The classroom aspect hopefully supports what I'm doing, and I try always to support what the teachers are doing. (I, 30, pp. 16-17)

Margaret provided specific examples of how integration could be implemented.

We work more on making a wholeness and it's not separate stuff ... [We do this] by integrating subjects. By doing cross grade level stuff. By peer tutoring. By different grade level tutoring. By mentioning or bringing into physical education some of the things that I know they've gone through in class or even intentionally saying "you guys are working on so and so right now. I'd like to go further and explain some stuff for that." So there's lapping over and all that stuff too. (I, 30, pp. 17,18)

She also valued the efforts of the classroom teachers to integrate physical education into different content areas.

The [classroom] teacher works hard with them in adventure concepts and when they come to me they're even more ready so that really works great ... What we ask of the classroom teacher is to read the brief that I give them in the beginning and then to debrief what they see. It doesn't have to be the physical stuff. It can be "well, I saw you really cooperating well or how many times did you do that?" Relate it to math or relate it to the subject area that they have in the classroom rather than in here. I also try to incorporate different subject areas into physical education. (I, 3, p. 9).

Margaret believed that integrating other content areas into physical education has made physical education more important in the school-wide program.
I think some people think [physical education] is not as important [as other content areas]. I try to make it as important by trying to incorporate stuff, math and social studies and stuff in the class so that the teachers can see that it can work here too. We can reinforce what they're doing there, but there needs to be communication. (I, 30, p. 31)

The concerns Margaret had about integration were: "there's not enough time to do it and it requires a heck of a lot of planning in terms of me getting with the teacher." (I, 30, p. 32)

Summary

Margaret's basic values and beliefs led her to support the Project Adventure model. She incorporated the five Project Adventure concepts into her teaching repertoire. Margaret's educational values and beliefs not only involved influencing students' physical attributes, but also their emotional, social, and cognitive development. She wanted to have a positive impact on the students' long-term attitudes and feelings about themselves and believed this would enhance their self-esteem. She wanted students to value themselves, other students, and life-time physical activity. Student success at their level of ability was an underlying goal for her program. Her specific goals were developing basic motor skills, building social skills, having students take responsibility for their own learning, creating fun in learning, promoting a healthy lifestyle, and developing an appropriate attitude toward competition. Margaret felt that the best way to reach her goals was through student-centered learning activities. She believed in using mainly cooperative tasks and attempting to integrate different content into her lessons. She realized that her physical education program utilized unusual activities, such as climbing and initiatives, but most important to her was how the content was taught, not what was taught. Margaret believed that adventure education made physical education an important part of the total education of the student at Drexel, not a separate or peripheral enterprise.
3.2 What were the students' perceptions of the physical education program?

Student perceptions were an important component to an understanding of Drexel's physical education program. The following data represent systematic analysis of post-lesson student interviews. In addition, a structured interview was carried out at the end of the study with one third grade and one fifth grade class who had been observed for a total of twenty-one lessons during the study. When asked about their goals for physical education, the students highlighted cooperating, taking risks, learning new motor skills, trying or challenging themselves, and having fun. In addition, students indicated that certain conditions contributed to their success in physical education classes. These were solving problems, trusting each other, following directions, developing a healthy attitude toward competition, and grouping students.

Goals for the physical education program

Cooperation

Cooperation was a goal articulated by the students. They viewed cooperation as working together, helping each other, and encouraging and supporting each other. Students often discussed cooperation in both units, but gave more examples during the climbing unit than the manipulatives unit. In the climbing unit the students needed to work together in small groups to achieve most of the tasks, while in the manipulatives unit students worked individually, in pairs, and in small or large teams. The students gave various reasons for cooperating. At times cooperation was a goal in itself, whereas at other times it was a means to reaching other goals. They believed cooperation was used to ensure safety, create a positive learning environment, provide the opportunity to develop skill and achieve their personal goals, and prevent student fights. As with many of the students, Shona felt that cooperation was to "try to get along with people even though you don't get along best- you try to work with others that you don't usually work with" (Shona, 28, p. 4).
Allen explained that cooperation was important "so we can help our group succeed and be glad about ourselves. Be happy. [If you didn't cooperate] you wouldn't succeed." Gerry added, "You wouldn't succeed and you would probably fall." (I, 13, p. 50)

An important part of cooperating was the way students encouraged and cheered each other on to complete a task or achieve a goal. At times even though students did not complete the task, they were happy because other students cheered for them. Jamie said, "I was happy when I'd get on the beanstalk and trapeze because everyone cheered for me and they gave me courage to do it so I tried the hardest I could. I missed [the trapeze] but I still felt happy" (I, 7, p. 23).

For Bernie and others cooperation meant equal treatment for everyone, which helped prevent student fights. "It's better to cooperate on most of the things than not, because if you don't cooperate on most of them, you'll just end up and no one will get a turn and some [student] will probably end up with a black eye or bloody nose" (I, 1, p. 4).

In addition, cooperation helped establish and maintain physical and emotional safety for the students. In high risk climbing and jumping activities, students realized that if they did not work together and pay attention to each other, there was a possibility an injury could occur. Students learned they needed their belay systems hooked up correctly. Amica explained, "when I was climbing the thing, I thought I was going to fall cause one of the belayers didn't have their other biner [carabiner]" (I, 13, p. 50).

Students viewed peer teaching as one way to cooperate. The students gave each other advice to help complete assigned tasks or achieve personal goals. Peer teaching was an organized part of some lessons and encouraged by the teacher. Drew, a disruptive student, helped and encouraged Suzie on the suspended balance beam by sharing his previous experience. "I told her that when I was on [the beanstalk] I took baby steps and I told her to take baby steps like I did and she would make it a lot easier" (I, 12, p. 40).
In the manipulatives unit students helped each other learn different motor skills. Brian explained how he aided his partner in a volleyball lesson. "At first he kept on hitting the ball curved ways and then I showed him to do his hit straight up" (I, 23, p. 100).

However, the students did not always cooperate. When the students did not work well together, they felt it restricted their participation in the activities or prevented other students from enjoying the activities. During one climbing lesson Bernie wanted to participate in different activities than his group. He did not cooperate with his group and did not achieve his goal. However, after the lesson Bernie addressed some of the benefits of cooperating. "[I learned] that we should cooperate together and I should work with my group . . . I learned that you should depend on your group and don't feel left out when you're not ready to climb. [You should] feel like you're just to climb and try to get along with the group" (I, 7, p. 25).

Some students prevented other students from enjoying and/or participating in the activities. Jennifer recalled one example of this. "At the zip line while people were riding . . . people would grab the rope and then let it go" (I, 9, p. 32). Sally gave another example: "This kid was in our group and he kept pushing the cargo net when we were trying to get in and get out" (I, 10, p. 36).

**Trying**

Another student goal for physical education was to try or challenge themselves. Try or challenge was manifested as: trying to climb the wall, trying to follow directions, or trying not to cheat. Students believed it was important to challenge themselves. In fact, in the eyes of many students success was equated with trying. If they thought they had tried, they believed they were successful. Some students mentioned that trying was the most important part of the experience. Gerry said, "my goal was to try to climb the wall and try to make sure my spotter was ready" (I, 4, p. 11). Whether students reached the top or only made it half way up the wall, as long as they tried they felt good about it. Shona
explained, "if it's something hard and I tried to do it, like climb the wall, even if I don't do it, I say 'hey, I tried'" (I, 28, p. 1).

The students felt that challenge in physical education was more meaningful when they took some ownership for what they were trying to achieve. The notion of challenge by choice was expressed by some of the students. In the climbing unit students had several activities to choose from and they could choose when they would participate in different activities. Lisa enjoyed climbing the balance beam "because I got to decide when I was going to do it" (I, 8, p. 27).

Taking Risks

According to students, another goal of physical education was challenging themselves to try new activities which could be risky. The students believed they should try new, often scary, activities. Suzie said "I was scared first of all but I thought it was a good challenge and it really looks like it's really scary, but when you get on it it's fun actually. I tried the first time but I had to get down" (I, 7, p. 22).

The students thought it was thrilling and fun to try a risky activity such as the zip line. Shawn said, "when [riding the zip] you're falling back, it's just like when the mat is back there. It's just like the mat is getting bigger and bigger and when I'm going up it's like it gets so high. It's just fun" (I, 5, p. 16). Crissy added, "[I learned] to risk 'cause it's real fun to do it. And try it out. If you try the zip line or something." (I, 2, p. 8)

Students communicated high levels of satisfaction when they completed risky activities. Jan explained "the most positive thing was when I did the zip and I never did it before and I thought it was going to be really hard or scary or whatever and I didn't want to do it and then I had to trust everyone and I liked it" (I, 1, p. 2). Kara said, "[I was scared] when I was climbing up the wall, because I thought I was going to fall. And I made it. [I felt] happy" (I, 7, p. 22).
Learning New Motor Skills

The students' personal goals often included learning new motor skills. They were able to specify skills and strategies they had learned. In the climbing unit students had several skills to accomplish. Gerry said, "[I] got to make sure I switch my feet or else I'm going to fall. [I need] to hold on tight and don't let go. And get a good grip on the blocks" (I, 13, p. 49).

Glen and Carla talked about skills required to play basketball. For Glen it was to "keep your eye on the basket. And if you're on defense you have to keep your eye on the offensive player" (I, 22, p. 93). Carla "learned to dribble the ball faster when you're running or in different ways when you're running in a circle. I learned how to shoot better" (I, 22, p. 97).

Having Fun

Having fun was another of the students' goals for physical education. Fun occurred in several ways for students: a novel experience, a sense of achievement, a sense of risk, or a feeling of ownership of their lesson. The students were typically positive about their physical education experiences. Fun was mentioned as a goal more often during the manipulatives unit than the climbing unit for both third and fifth grades.

Sally and Shona believed physical education was more fun than other school subjects. Sally explained in physical education, "everybody was screaming and laughing and I just thought that it was really nice that they were having fun because school work is sort of fun and sort of boring. Gym is nicer" (I, 15, p. 58). Shona added, "I think gym should be longer too because it's funner than everything else, I think" (I, 28, p. 3). Several students mentioned that it was fun to sign their name at the top of the climbing wall. It was as if this gave them a sense of ownership of the task.
Not having fun

Although the students usually had fun in physical education classes, there were certain events that reduced the students' amount of fun. These episodes did not contribute to a positive learning environment. The types of activities that the students felt were inappropriate were not following directions and cheating. Sally explained that she didn't like part of the lesson when: "I saw one kid and he just threw the basketball up in the hoop and made it and Miss Lillie didn't put him on the stage, but he shouldn't have done that." Gerry added:

He was probably trying to show off or trying to see if he could do it even though he wasn't listening. He made his goal but he wasn't doing the right goal. Even though he made it he shouldn't have been doing that, because that wasn't what we were doing at that time. (I, 15, p. 60)

Several students mentioned that cheating detracted from enjoyment of class. Sally said:

"Well one thing I learned is that cheating won't get you nowhere... Some people were trying to cheat but they didn't get away with it. Like Mac tried to cheat but Miss Ranger knew she did it." Oprah added:

It wouldn't be fun if you cheated and if you really believe in yourself and think that you can do the thing if you try hard then you can do it. And if you're in the right group and you don't talk as much you'll accomplish your goal and not get in trouble as much. (I, 15, p. 60)

Factors that contribute to student success

Students realized that certain conditions could contribute to their success in physical education classes and enable them to reach their personal goals or the assigned tasks. These conditions included solving problems, trusting each other, following directions, developing a healthy attitude toward competition, and organizing how students were grouped.
Problem Solving

Problem solving was a strategy students used to achieve their goals. In the climbing unit every activity was a problem solving task for which students needed to work out their own solutions. In addition, students were provided with motor problems to solve in the manipulatives unit. The students were able to work out solutions to problems presented to them. In one basketball activity in order to successfully bounce the ball against the wall students needed to problem solve. Grant explained, "if you go like this and [the ball] goes over like this you have to scoot over so it doesn't go out there and roll over to the shooting [lane]" (I, 21, p. 92).

Trust

Trust was discussed frequently in the early part of the climbing unit. After the early lessons this notion was assumed to be an integral part of the activity by the students. In order to participate in high risk activities students realized they had to trust other members of the group, teachers, and the equipment. Trust was not mentioned as a condition for success in the manipulatives unit. Shona suggested several reasons why trust was important. "You've got to trust your partner if you're climbing the wall. You've got to trust them to belay you right, spot you right. You've just got to trust them. Otherwise it won't work" (I, 28, p. 11). Jan explained that trust was essential while riding the zip line. "You have to trust everyone to pull you and then make sure you don't hit the wall or something and you have to trust them so that you can do it. If you don't trust them you can't really do it" (I, 1, p. 1). Students explained that trusting classmates was necessary for full participation. "If you're not going to trust them you're never going to have any fun." (I, 4, p. 14)

Following directions

Students noted that following directions was essential to achieving their goals. In the climbing unit it was closely related to safety issues and in the manipulatives unit it was
related to learning a motor skill or completing an assigned task. In certain lessons, students articulated that "to listen and follow directions" (I, 16, p. 67) was the main goal for that day.

The students believed that the teacher wanted them to follow directions. Opera described how she thought Margaret wanted:

> To have everybody listen, follow directions. To meet her goal as a teacher. To make sure that everybody meets their goals and to achieve their goals and for everybody not to cheat because if you cheat it's not going to be fun and to have people in their right groups so they don't talk and they don't fight and so that they can go through the whole lesson and not have to fight and not have to do anything wrong. (I, 15, p. 57)

Paying attention to the teacher was an example of how the students followed directions. This was an important part of keeping the activities safe. Gerry explained that he thought the teacher wanted them "to make sure everything was secure and everybody was checked in their harness and make sure everybody had their helmet on and everybody was doing the right thing" (I, 13, p. 48).

**Leaving Competition in the Gym**

The students said that excessive emphasis on competition could reduce their participation and enjoyment in physical education class. They talked about competition in terms of leaving competition in the gymnasium, not tormenting an opponent, avoiding fights, and having fun whether they won or lost. Tom said, "you have competition in the gym but you don't take it back to the classroom and keep nagging people the rest of the day. You just keep it in the gym" (I, 19, p. 76). Students did not think winning should be the focus of the activities in physical education class. When asked what kinds of things they had learned in physical education class, Ruth said, "you learn that you don't always have to win. Just trying your hardest is the beat thing" (I, 28, p. 4). Competition and related issues like cheating were only discussed during the manipulatives unit, not during
the cooperative climbing unit. Students believed excessive competition was not fun. Ruth said:

I learned competition doesn't really matter. It's how you play... If you're in two groups and one of the groups wins, most of the time they go back [to class] nagging you, [saying] "we won, we won." [Today that didn't happen]. It was just plain fun. (I, 19, p. 79)

Students knew Margaret did not condone excessive competition, as shown in their discussion of the teacher's goals for a basketball lesson. Mary said "I think the teacher's goal was for us to have fun, not fight, and cooperate." Ruth added, "I think her goal was for the whole class to get along and not crack on each other. And she met her goal" (I, 19, p. 75). Even though students knew that competition was not promoted in their class, sometimes they did care about winning. Mary said "My goal today was to try to win" (I, 19, p. 74). Students rarely mentioned that competition was important to them, but complained several times about other students fighting or taking winning too seriously. It seems that competition did occur, but students felt that it was inappropriate behavior in their classes.

Grouping of Students

For most activities, students worked in peer groups. The students believed the way they were grouped could effect how much work was accomplished in their classes. Students had opinions on how they should be grouped. Even though the students knew that sometimes there was a problem with grouping, they could not always provide a viable alternative. Kris believed that picking their own groups was a problem, but did not like the classroom teacher's system of table groups either. She said:

I wouldn't change anything in the lesson but I would change the groups that people were in... Because students are always picking out groups with their friends and always getting in trouble... [Table groups don't work better, because] sometimes table groups fight and sometimes they don't want to be with that person and they want to be with somebody else and sometimes Miss Ranger just lets them and sometimes she doesn't. (I, 13, p. 51)
Other students agreed with Kris that table groups were not always a useful strategy. Maura spoke for many of the students when she said:

I would make the change of the way people - they put us in groups. Our table groups and sometimes when you're with someone or a lot of people for a long period of time you kind of get - you feel like you're sick of them but you're really not. It's just the way you feel, and I think that I would let people choose their groups, because when someone that you've been with all day decides something else, sometimes you just go off because you're mad. (I, 1, p. 3)

Suzie suggested a compromise with students choosing group members on a rotational basis.

If I was the teacher I'd make them pick someone from each table group that they'd want to be with, but if they wanted to be with their friends... The ones who would pick their person and then the next week it would be the next table they would pick. Go by that way so everyone would get a chance to pick... Like if someone didn't want that person they would pick them and they could pick somebody else. (I, 7, p. 24)

Students suggested different methods of grouping, providing examples to support their arguments. They suggested grouping by physical size, by gender, or mixing the group by behavior. Some of the suggested ways to group were teacher directed and other alternatives were part or full student choice. Bernie suggested "people should get with people that follow directions," but conceded that he didn't know what to do about people who don't follow directions. Jan suggested "I'd have the bigger people - well the same size people with the same size people and answering Bernie's question I would put the bad people with some of the good people so if they were bad then they would become like them [the well-behaved students]" (I, 1, p. 3). Sally saw the boys as problems in groups. She said:

If I would put [people] in teams, the girls are okay. I mean hardly none of them fool around. It's the boys and no offense, Ron. So I would put like all the boys, I would split them up into groups, but like I would have like Glen and Ron, I wouldn't have them together in the same group, but the girls I would have somebody else in there. (I, 15, p. 61)
Summary

Students at Drexel School appeared to have a positive attitude toward their physical education program. Their goals for physical education were to cooperate, take risks, try or challenge themselves, have fun, and learn new motor skills. In addition, the students realized that if they wanted to achieve their goals, there were strategies that could contribute to their success. These have been identified as solving problems, trusting each other, following directions, developing a healthy attitude toward competition, and organizing the way students were grouped.

4. What supported the implementation of the program?

The teachers and administrators at Drexel School believed they had a shared philosophy or vision for the education of their students. All elected to teach at an alternative school and had "bought into" the concepts of Project Adventure. The teachers and administrators promoted a holistic approach to learning, which meant they tried to purposefully influence the physical, intellectual, emotional, and social development of their students. In addition, they felt physical education was a valuable component in the development of their students. At Drexel, physical education was not seen as a marginalized subject area. In this school five factors supported the implementation of the program: outside support, staff relations, other teachers' view of the physical education teacher, integration, and the classroom teachers' role in physical education lessons. These factors were interlinked and not in any order or priority.

Outside Support

One factor which contributed to Drexel's success was support the school received from the school district, parents, the community, and Project Adventure. The school
district supported the creation of two Project Adventure schools and was supportive in允许 the physical education teachers to add adventure education content to its graded course of study. The district provided autonomy in staff selection. Teachers volunteered to work at this school because they desired to be part of a new initiative and believed in the concepts of the Project Adventure model as a basis for the school-wide curricular effort. The school started from scratch with the principal in a position to control who would be on her staff. The Principal, Catherine Devon, believed this was crucial to their success. She said:

I think first and foremost is hiring a set of teachers that are committed or willing to be committed to this philosophy. This school differs from a conventional school in that I do have the choice of staff. Along with that choice of staff when they buy into this program they're buying into being trained, whether it's high ropes or initiatives or whether it's tribes. (I, 31, p. 4)

Hiring of new teachers was done by a search committee, made up of Drexel administrators and selected teachers.

The school district also provided extra funds for special projects, including climbing equipment and challenges, such as the wall that was set up in the gymnasium. In addition, the district provided a budget for students' high rope, initiative, and accessible challenge experiences at an adventure education center, and some additional funds for school field trips. Additional money came from Project Adventure, and the local community supported fundraising efforts. Having an adequate supply of equipment assisted in the implementation of the program. As fifth grade teacher Rosemary Lillie said "with Project Adventure I think having that equipment in the gym [is important]. To have for instance a ball in every child's hand. That is of enormous importance" (I, 33, p. 6).

Drexel had developed strong parental support by providing opportunities for parents to be involved in school affairs. Catherine Devon said, "I know I have the support of the parents. Initially we had to do a lot of educating of the parents about our program, and because of the firm foundation that we laid initially, they've bought into the program"
(I, 31, p. 6). This education was started with open days and continued with an open-door policy that welcomed parental contributions. During specified open days parents were encouraged to come into the school to try the climbing equipment. Parents were also encouraged to attend field experiences, over-night camps, and adventure education high ropes and initiatives courses. The PTA, with over 300 members, played an important part in running the school and raised money for student experiences. There has been in recent years close to a 90% turn out to parent-teacher conferences, with an 87% turn out in February, 1993 during data collection.

In addition to providing funds for classroom resources, Project Adventure provided staff support and training. Representatives from Project Adventure have visited Drexel frequently and have conducted inservice workshops. They have also offered Project Adventure curriculum workshops in Massachusetts and Georgia that teachers at Drexel have attended.

Staff Relations

Open-ended interviews, non-participant observation, and field notes showed teachers and administrators expressed positive attitudes and feelings toward one another. They wanted to work together, were supportive of each other's efforts to educate students, and were proud of their school. Margaret Ranger believed that her role was to work closely with other staff members as:

a support person for the total program. As a part of the total program rather being apart. I feel that the whole school makes the kid and should make a difference in that life. It is not just what happens in the gym; students take risks everywhere, and challenges throughout the curriculum. (I, 29, p. 4).

Drexel teachers noted the importance of working as a team to benefit the school program. A fourth grade teacher, Paul Grove, stated:

I think the old cliché that two hands are better than one [is an important concept here at Drexel]. When you're working with a team and the teachers, you get a lot of ideas of things that you may not have thought of
trying. And also there's a feeling too that we're going to try this as a team. We sink or we swim together, so from that standpoint it's very good. (I, 35, p. 7)

Margaret believed that an important part of the school was the support by other staff members and the principal. "I like the idea that somebody at my own level [another educator] can help me. Even here at school other teachers help me" (I, 30, p. 5). Principal Devon was adamant that as a staff "if we brainstorm long enough and hard enough we can overcome just about anything. We've really become self-sufficient" (I, 31, p. 10).

The school developed mechanisms to ensure a positive and supportive working environment for teachers. If there were conflicts or concerns that could not be addressed by individuals, there was an Advisory Building Council (ABC) that assisted in working through problems or resolving conflicts. The ABC was made up of the principal and teachers. When teachers had concerns, they anonymously typed them and placed them in the secretary's mailbox. Examples of the type of concerns addressed were: too many meetings for teachers, lack of planning time, and limited hours for the library. Paul believed the Council served to get those issues "out in the open and then for the council to sit down and discuss and to come up with some sort of resolution" (I, 35, p. 11). The Council would come back to the staff with recommendations and these recommendations were addressed in staff meetings.

Other Teachers' Views of the Physical Education Teacher

Margaret was a full-time teacher at Drexel School in contrast to many physical education teachers in this school district who taught at two or three different schools. She therefore had time to develop positive relationships with students and teachers. She interacted with classroom teachers frequently because physical education played a central role in the Drexel School curriculum. In addition, Margaret was respected by other teachers because she acted as an adventure education resource person for them, had
teaching characteristics they valued, such as being prepared and providing good
instruction, provided a high quality and quantity of work, and had good interpersonal
interactions with other staff.

Cecilia Law, the special education teacher, believed that because Margaret:

Is here [full-time] she's got a really established relationship with the kids. They respect her. They like her and so she's not just this person that comes in and teaches phys ed. And she's respected as a teacher by the students because of her presence . . . What she does is respected and that makes a big difference. I think - physical education is not always - it's thought of as extra curricular activity and I don't think it is [thought of that way] here simply because the teachers are also part of it. They are in there [the classroom teachers are in physical education]. They see what goes on and I think it's more of the total education of the child. (I, 34, p. 18)

Fifth grade teacher Rosemary Lillie added "I think she definitely [is respected by the students] and I think she's a very good teacher . . . because she's capable of carrying out clear instructions and the kids know what they're supposed to do and she has everything there on time when it's supposed to be" (I, 33, p. 17). Cecilia Law believed Margaret had at least the same status as other teachers in the school.

I would say if anything it probably would be more elevated [status] because the amount of things, just sheer amount, the volume that she does as well as the excellence is really admired. She has a really elevated position I think and is so willing to go the extra mile, which she does a lot. (I, 34, p. 18)

Rosemary believed that Margaret was a vital component in the school program.

I would say the way the phys ed teacher handles her interactions with the staff is a vital part [of the program]. If we want to be a part of phys ed and be a part of Project Adventure . . . then the way she provides the opportunity for us to participate or to communicate with us is vital. (I, 33, pp. 16, 17)

**Integration**

The Project Adventure curriculum model implemented at Drexel emphasized a holistic view of educating students, meaning that teachers and administrators at Drexel tried to purposefully influence the physical, intellectual, emotional, and social development of
their students. This was developed by having every teacher use the Project Adventure concepts and by teachers incorporating curriculum from different content areas. At times, Margaret used academic subject matter in her physical education classes. Physical education was integrated into the classroom mainly in the form of briefs and debriefs conducted by classroom teachers. The classroom teachers were able to elaborate on what occurred in physical education because they participated in these lesson in the gymnasium. Team planning allowed teachers to remain current about what was occurring in other classrooms.

The principal outlined her perception of the interdisciplinary way in which content should be addressed in the school program.

When we teach we try to combine the subject areas. If we're going to the adventure education center on a field trip we may read about the out of doors prior to going. When we go out there we may write about our experience after we get back or if we're going to combine math we may go out and we may measure a tree or measure distances. We may in turn come back and write about that. So reading, writing, math, social studies, science - we try to combine those into one lesson. (I, 31, p. 5)

Cecilia made a connection between the physical and intellectual development of the child.

[Physical education at Drexel] gives a more holistic approach to education because education is more than just the mind. It's the body and it's the mind and body working together and supporting each other . . . Because physical education is a part of the education of the child. It should all work toward the same end. (I, 34, pp. 18, 19)

Physical education was not seen as a marginalized subject area. It was a vital component of the thematic and integrated approach to learning. Principal Devon stated:

I don't see [physical education marginalized] at all. I see it as only being enhanced. I think its boundaries would be widened if more people would accept the idea of non-competitive, cooperative style of teaching and learning. Because it breaks down the boundaries of basketball, volleyball and so on and widens it into the classroom. Brings the classroom into physical education. (I, 31, p. 15)
Third grade teacher Nancy Brewer discussed the relationship between the classroom and physical education.

My understanding of Drexel is that not only do we address the area of academics, but we also talked about challenging the students' physical ability and the integration of phys ed in the classroom has become very important. My understanding of the integration between academics and physical education is not only to give students a chance who maybe don't excel as well in the classroom a chance to have their spotlight in the phys ed class, but also to take what they've learned and apply some of those things back into the classroom. For example, problem solving. If they're really good at problem solving in phys ed, what could they bring back to the classroom that might help them a little bit more? (I, 32, p. 1)

Cecilia saw the value of physical education in developing cooperation and believed that cooperation in the classroom could be enhanced with examples from physical education lessons.

If a cooperative game is taught [in physical education] it's easy to refer back to that. "Remember how that worked in phys ed, where you had to work with your partner to finish? This is very much like that. We're going to do a math preparation. You're going to have to work with your partner just the way you did in phys ed." You're going to draw on the experiences that the student has in the physical education setting. (I, 34, p. 17)

The principal believed self-esteem gained in physical education could transfer to the classroom.

I see physical education as being equal to academics. . . . I see it as playing an equal role because once you find a kid's strength, the things they're good at, you can take that strength out of the physical education realm, bring it back to the classroom, that self-esteem that he or she has gained and build on it. As a result they may be more apt to try things in the classroom that they were afraid to try before. (I, 31, p. 13)

Cecilia explained how goals and content from physical education and the classroom can be integrated.

We can take physical education, the goals or the things that you do in physical education, and we can bring them into the classroom too. We can talk about what you did there and relate it to what we're doing in the classroom. We can do the converse of that then. The things that we're doing in the classroom we can take them into phys ed. [For example] we can do math in phys ed. (I, 34, p. 17)
Rosemary described how physical education could be used to stimulate writing in the classroom.

After we finish with phys ed we come back to the classroom and I incorporate the real actions, the real emotions that they felt when they were in the gym, either doing a risk behavior or challenge behavior and bringing that into their writing situation. When emotions such as fear or exhilaration or success are brought into writing situations they become very rich and alive and exciting. (I, 33, p. 1)

In addition, Nancy described an example of Margaret's integrating academic content into a physical education lesson. "I had just introduced multiplication facts and [Margaret] did an activity with tennis balls with all the different numbers on them. I thought that was just a neat way of reinforcing, making that connection to the classroom and phys ed" (I, 32, p. 14).

The briefs and debriefs created a connection between the classroom and gymnasium. Each week Margaret wrote a brief for the classroom teacher to read and discuss before bringing students to physical education. The brief acted as an anticipatory set for students to get ready for their physical education lessons and it kept the classroom teacher connected to the program. After the physical education lesson the classroom teacher often conducted a debrief which could be used to address subjects which were relevant to the classroom. Nancy believed the debrief was a valuable part of the curriculum.

[With the debrief] I think we can come back and talk about what worked in phys ed. And we've talked about how does it apply? What difference does it make if you cooperate? I think it also gives the kids a chance who don't do really well in the classroom to talk and add something in phys ed that they don't necessarily always get to add here in the classroom. They recognize cooperation and problem solving in phys ed. We talk about what worked, what they liked, and if something didn't go well, why not. (I, 32, p. 15)

The principal and classroom teachers recognized Margaret's contribution to the thematic and integrated approach to learning. Principal Devon said:
What we try to do here is our physical education teacher will sit down and plan with each one of the grade levels and she tries to incorporate different aspects that the classroom teachers are trying to achieve. It may be counting in first grade. It may be directions in fourth grade and she tries to incorporate those into her classroom. The other side of that is the classroom teachers brief and debrief before and after physical education, trying to get the kids to anticipate what it is they're going to experience and then what they've learned from that experience. (l, 31, p. 14)

Planning meetings helped with the integration of different subject areas. Planning was carried out in a cooperative manner with the teachers from each grade level discussing their plans for the month. Each two months the school curriculum was planned around a different theme. For example, during January and February the theme was Problem Solving and during March and April it was Environmental Awareness. The physical education teacher moved around to each grade-level group, observed, and contributed to the development of the thematic plan. Integration was enhanced by the group planning which contributed to strong connections between different subject areas. The teachers viewed Margaret as involved in the planning process. Nancy said "I think she does as much as we do and she does as much as we can do to bridge those lines of communication between phys. ed. and classroom in terms of coming to planning [meetings] and seeing what we'll be doing [in class]" (l, 32, p. 14).

**The Classroom Teachers' Role in the Gymnasium**

Margaret felt that she was fortunate to have the classroom teachers in the gymnasium with her during the physical education lessons. The classroom teachers could act as assistants in the supervision of students and the development of motor skills. The rationale for classroom teachers' participation in the gymnasium during the physical education lesson was based on the Project Adventure model. This unusual stipulation allowed for a strong connection between the classroom and the gymnasium. The classroom teachers agreed that it was valuable for them to be in the gymnasium during the lessons. Rosemary stated:
I find it very enjoyable [to be in physical education class] and since I like to carry over the activities that I see in phys ed into their writing and into problem situations that I might find, I find that going there and participating with the students gives them a very positive feeling about me, the fact that I will participate with them. It helps me to be able to extend their writing through the activities that they are doing and the emotions that they exhibit in phys ed as well. (I, 33, p. 19)

However, at times classroom teachers were frustrated by the loss of planning time caused by their participation in the physical education lessons. Nancy explained both sides of the issue:

I think it supports the culmination of teaching in the classroom and the phys ed focus that we have. There is a down side because it takes away from me, time that I would have to prepare in the classroom. I think it's a positive that I see some of my kids who maybe don't do as well academically doing very well in a physical environment. I think I see some kids' behaviors are different. I think there are more advantages than disadvantages to having me there. (I, 32, p. 9)

The principal was aware of the need for teachers to have planning time and attempted to accommodate that need. As Nancy explained, teachers were "given passes to be excused from two phys ed classes, twice a quarter, which I think is just another way of recognizing our needs as well as trying to accommodate the fact that we should be in phys ed class" (I, 32, p. 18).

Although teachers and administrators believed there were many positive factors which supported the program at Drexel, they could also see that there were problems. The most frequently mentioned limitation by teachers and administrators was that they had little time to accomplish the goals of their program. In addition, Margaret and the principal discussed the limitations of having the gymnasium used as a multipurpose facility: a gymnasium, a lunchroom, and an assembly area.
Summary

Many factors supported the implementation of the program at Drexel. First, the school received outside support from the school district, parents, community, and Project Adventure. Teachers had a positive and supportive environment in which to work. Margaret was respected by students and other teachers. In addition, the school used an interdisciplinary approach in which subject matter and goals of the program were integrated across curriculum areas. Last, the classroom teachers participated in physical education, acting as assistants. These factors allowed the curricular innovation at Drexel School to exist.
Case Two: Cornwall Alternative School

The case findings are presented by research question.

1. What were the curricular and organizational characteristics of the alternative physical education program?

Cornwall School was the only other elementary school program in the U. S. that incorporates components of Project Adventure throughout the school-wide curriculum. The information on the formal physical education curriculum at Cornwall was drawn from four major sources: the Project Adventure curriculum, the Cornwall School Handbook, the school district's graded course of study (the same as Drexel), and the physical education teacher's planning material. A brief summary of the Project Adventure curriculum and the school district's graded course of study were described in question one of the Drexel case study. In this section the Cornwall Handbook and the teacher's yearly plan will be presented.

Cornwall: School and Philosophy

Cornwall is an urban alternative school, with 68% of the students from economically disadvantaged families. The school maintained a culturally diverse student population, with 48.2% of the students African American and 51.8% of the students non-African American. Thirty-five percent of the students at Cornwall School were enrolled through the district lottery system with waiting lists for entrance at each grade level. Thirty-five percent of the students came from the surrounding neighborhood and thirty percent were bussed to ensure a balanced racial make-up.

Philosophically the school was grounded in the ideals of Project Adventure. The Cornwall Handbook (CH) stated that the school:

seeks to educate the whole child through the adventure education focus. This will offer children the opportunity to stretch themselves through problem solving and challenging activities integrated into a strong basic skills academic curriculum. (CH, p. 1)
At Cornwall the staff believed that through their educational process students would increase their sense of self-esteem. "Children will develop skills for acquiring a positive attitude in working with others by developing decision making skills and utilizing problem solving activities" (CH, p. 2). In addition, the Cornwall handbook states staff at Cornwall are committed to being good role models and teaching by example.

As followers of the Project Adventure philosophy, we are committed to providing a safe, accepting, supportive environment. We will establish high expectations for ourselves and our students...Those expectations will be achieved through the pursuit of academic excellence, physical activity, emotional and mental stability, and social adjustment. (CH, p. 2)

Instruction at Cornwall emphasized cooperative learning and group interaction.

The activities will help the students effectively work within a group by relating positively with others and taking responsibility for their own thoughts and actions. These challenging group experiences will allow students to be more successful as a result of an increased confidence and self-esteem. (CH, p. 2)

In addition to an increased sense of self-worth and appreciation for other people in the group, the school's goal was that:

the children will gain appreciation and increased awareness of the natural environment. The school climate will inspire a sense of responsibility and ownership in their school and community. The staff and students at Cornwall will work toward taking pride in their community and school. (CH, p. 3)

The educational philosophy stated in the Cornwall School Handbook read:

The primary concern of Cornwall Alternative Elementary School is the students and the education of the total student by developing and challenging each child mentally, socially, physically, and emotionally in order to develop an effective citizen in our society. The teachers will strive to develop an eagerness in each child to explore, discover, and learn from his/her environment, each other, and themselves. Our program places a strong emphasis on mastering the basic skills of: reading, writing, communications, mathematics, and problem solving through an experiential approach. The basic skills will be integrated into each part of the curriculum: language arts, reading, mathematics, science, social studies, health, physical education, and the arts. Project Adventure is an experiential-based learning process in which adventure and challenge are integrated into the curriculum. Regardless of ability level, each child will have the opportunity to experience activities that will challenge, motivate, and assist in the self-actualization of the learning process of the child. The learning process within the classroom will be integrated with outdoor experiences. Through a trusting atmosphere of cooperation and sharing, individual and group achievement will be emphasized in a climate where each child is given an opportunity for success. The development of critical thinking skills will assist students in learning how to think, not what to think. (CH, pp. 3, 4)
Cornwall Alternative School, through the Project Adventure approach, attempted to attain specific physical, academic, and affective student goals. Some of these are:

1. To develop coordination, agility, fitness, and strength
2. To develop an increased joy in the physical self
3. To develop a willingness to try new, adventurous physical challenges
4. To develop an appreciation of the interdisciplinary nature of real problem solving
5. To encourage positive, enthusiastic attitudes toward school and work
6. To foster an adventurous, excited approach toward learning new things
7. To broaden the social and cultural horizons of students
8. To increase the ability to work cooperatively and effectively within a group
9. To develop group decision making skills
10. To increase student feelings of self-worth and self-esteem

(CH, pp. 5, 6)

**Brief and Debrief**

The brief and the debrief had important roles in the Cornwall School program. In physical education, Anne Duke, the physical education teacher, conducted briefs during the warm-up and initial instruction and debriefs with the class after every lesson. Anne explained her perception of the brief and debrief:

Brief is just sort of like an explanation maybe or a beginning to the day. It kind of sets the tone for what's happening. . . You can debrief as things happen during an activity, and I probably do that more than I do the end every day. Every day at the end we sit down and talk. I think sometimes the kids get too attuned to that and then they'll shut down if it becomes kind of a habitual thing. So I tend to do a lot of debriefing as things occur during the day and sometimes it's a two-hitter. "How did you feel? Why did that happen?" And it's sort of the old "who, what, why, how" feelings. Feelings are the tough ones, especially for the younger kids.

(I, 37, pp. 18, 19)

Duke felt that the debrief was invaluable as a method of reflecting on what occurred in the lesson.

If you don't look back and you don't debrief, you devalue the lesson event and the emphasis is much less. You have to allow reflection time. Just a little bit of time to share and a lot of the reflection hopefully is happening later down the hall in the class. But I think if we don't address it the kids don't put as much value on it and so it's a very important part of what happens. (I, 37, p. 19)
The Full-Value Contract

Cornwall School used a Full-Value Contract based on the process developed by Project Adventure. The purpose of the contract was to help teachers and students set personal goals, cooperate, and challenge themselves in a safe and fun learning environment. The Cornwall Contract stated:

Students will make a commitment to try, accept challenges and take risks, explore, discover, and learn, support others, accept responsibility, and have fun. The staff will establish physical and emotional safety, have high expectations, stress learner-centered classrooms, provide positive role models, use an integrated instructional approach, promote group interaction, and make the experience educational and fun... Challenge by Choice!

The Cornwall contract was displayed on a large wooden board at the entrance to the gymnasium and was posted in every classroom.

Building Community Support

Cornwall recognized the need for community support. Starting such involvement would "enhance the responsibility, ownership, and learning atmosphere created within the school and community" (CH, p. 4). Many organizations and businesses had donated resources and their employees' time to Cornwall. Students participated in over 84 trips into the community a year. Cornwall parents and community members had the opportunity to participate on the high ropes course at an adventure education center as well as use the climbing wall and zip line at Cornwall. Cornwall School PTA increased its membership by 261% since the inception of the Project Adventure program at the school in 1987.

Cornwall's relationship with the community improved in other ways, as the principal explained:

Initially [community involvement] was non-existent back in '87. We worked very hard on creating some type of partnerships with the community and I think we've done a good job with that. We have about 10-12 informal partnerships with area businesses. We have one very formal partnership that's actually a school business, adopt a school partnership through the Chamber of Commerce in Columbus so our involvement has steadily evolved and increased over the years.

(I, 72, p. 22)
Curriculum and Integration

Integration had two levels. One, the Project Adventure philosophy was to be infused into the curriculum throughout the school. Two, in the classroom and gymnasium teachers were expected to integrate different subject matter content areas. Teachers were expected to develop: interdisciplinary curricula, programs that integrate academics with physical and social skills, and curricula that effectively integrate group and individual work with both classroom and field-based work. Cornwall School developed an instructional planning tool to include the district course of study objectives to integrated thematic instructional units. These instructional units blended with adventure education to comprise daily instruction. Students at Cornwall School were expected to develop an appreciation of the interdisciplinary nature of real problem solving. "A strong basic skills program will be emphasized with problem solving activities integrated into the curriculum. Students will recognize the relationship of subject areas to one another" (CH, p. 7). At Cornwall, physical education had equal status with other subject areas.

Physical Education

The formal physical education curriculum followed the school district's graded course of study, which was the official physical education document. In addition, the Cornwall physical education program contained a climbing unit, overnight camping experiences, initiatives, accessible challenges, and ropes courses at an adventure education center. Grades K to five had accessible challenges, initiatives, and high ropes lessons (Table 8). Students were at the adventure education center for a three hour session, a morning or afternoon of school time. All students were provided with overnight camping experiences. The K through grade two classes stayed overnight at Cornwall and grades three through five had three days and two nights camping at an adventure education center. The K through two classes were introduced to basic climbing tasks while grades three to
five had high risk climbing. In addition, Cornwall had several special events, such as a
carnival day and Jump Rope for Heart day.

Typically, kindergarten through third grade students had two 30 minute physical
education classes per week. Grades four and five had one, one hour physical education
lesson per week. During the cooperative unit the high risk zipping lessons in grade three
were allocated almost double the regular class time.

Table 8

Adventure Education Activities at Cornwall

<table>
<thead>
<tr>
<th>Units</th>
<th>K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camp</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Climbing</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Initiatives</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>High ropes</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Accessible Challenges</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The physical educator

As the physical educator at Cornwall Alternative School, Anne Duke taught the
graded course of study for physical education and organized climbing, initiative, and
accessible challenge courses. She also organized and coordinated the school camping
program. One week every two months she was responsible for the school cocoon, which
involved the feeding and care for a collection of different birds, insects, and animals.

As part of her physical education program she was expected to plan and work with
teachers to integrate different subject content. Anne created a lesson plan for each lesson in
the three units observed in this study. These were short descriptions which included objectives, required equipment, previous material to review, new content, questions for students, and variations to be used at different grade levels. In addition, Anne had detailed lesson plans, one to three pages in length, that she referred to at times to remind her of concepts, skills, and games that she had used in previous years. Her yearly outline appears in Appendix G.

2. What was the operational curriculum of the physical education program?

The physical education lessons were systematically observed using the modified Task Structure System and field notes were written during the lessons. The Task Structure System provided a description of tasks that occurred during the units, while the field notes added depth of information and a context for analysis of the tasks. Each phase of the manipulatives unit, fitness unit, and cooperatives unit was characterized by different tasks that facilitated the goals of that phase and established an instructional climate to achieve the teacher's goals for that unit.

2.1 How was the content organized and presented to students?

The order in which the lessons were observed are displayed in Table 9. The focus of the analysis was on the responses by students to the three units and the instructional format/pattern that Anne Duke demonstrated in the gymnasium.

A description of the type and number of episodes, and percentage of the total lesson time is presented in Tables 10, 12, and 14. Because lessons ranged from 28 to 60 minutes in the manipulatives unit, 28 to 59:30 minutes in the fitness unit, and 27:30 to 62 minutes in the cooperative unit, percentage of total class time was presented as an indicator of how time was spent. The lessons are discussed in the order in which they were taught. Generally, a clear distinction between grade three and grade five was not apparent.
Time allocation in the lesson was dependent on the content being taught, grade level, and the stage of the unit (Table 9). Several elements of the lessons remained consistent. Every class began with students entering the gymnasium and moving to their assigned positions on the gymnasium floor where they performed a set warm-up routine. The tables do not include time students spent performing a set warm-up routine each day. Warm-up ranged from 1:24 to 2 minutes in the manipulatives units, 1:15 to 2:33 minutes in the fitness unit, and from 1:01 to 1:44 minutes in the cooperative unit.

During warm-up Anne introduced the lesson content. Most of the tasks were cooperative in nature and practiced in pairs or small groups during guided or independent practice. Anne frequently encouraged students to help each other in order to improve their skills. At the end of each lesson Anne allocated time for a debrief of the students' experiences in the gymnasium which was part of the instructional time.

Instructional formats in the manipulatives and fitness units were similar. Anne provided continuous instruction throughout the lessons related to the tasks. After initial instruction students moved into pair or group activities that were often directed by her in guided or independent practice. In the cooperative unit a large majority of the instructions related to the tasks were carried out at the beginning of the lesson, followed by the students moving into pairs or groups activities at different locations and working on these tasks for the remainder of class time.

Components of the task system

Manipulatives Unit

Lesson episodes from the manipulatives unit were management, transition, wait, instruction, and engaged time (Table 10). Management, transition, and wait time on average did not consume large amounts of lesson time. Management consumed 1.7% of total lesson time and was time taken to enter the gym before Anne commenced instruction. Transition consumed an average of 10.7% and wait time, an average of 2.8%.
Table 9
Cornwall Lessons Observed in Three Units

<table>
<thead>
<tr>
<th>Manipulatives Unit</th>
<th>Grade 3</th>
<th>Lesson</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>Hockey</td>
<td>Two</td>
<td>Basketball</td>
</tr>
<tr>
<td>Three</td>
<td>Hockey</td>
<td>Five</td>
<td>Basketball</td>
</tr>
<tr>
<td>Four</td>
<td>Hockey</td>
<td>*</td>
<td>Basketball</td>
</tr>
<tr>
<td>Six</td>
<td>Hockey</td>
<td>Eight</td>
<td>Basketball</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fitness Unit</th>
<th>Grade 3</th>
<th>Lesson</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>Jump Rope</td>
<td>Two</td>
<td>Fitness Testing</td>
</tr>
<tr>
<td>Three</td>
<td>Jump Rope</td>
<td>Five</td>
<td>Fitness Testing</td>
</tr>
<tr>
<td>Four</td>
<td>Jump Rope</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Six</td>
<td>Jump Rope</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cooperatives Unit</th>
<th>Grade 3</th>
<th>Lesson</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>Zipping</td>
<td>Two</td>
<td>Climbing</td>
</tr>
<tr>
<td>Three</td>
<td>Scooter snatch</td>
<td>Four</td>
<td>Initiative Run</td>
</tr>
<tr>
<td>Six</td>
<td>Egg Ball</td>
<td>Five</td>
<td>Frog Wars</td>
</tr>
<tr>
<td>*</td>
<td>Zipping</td>
<td>*</td>
<td>Climbing</td>
</tr>
<tr>
<td>Seven</td>
<td>Zipping</td>
<td>Eight</td>
<td></td>
</tr>
</tbody>
</table>

* Not systematically observed
Table 10
Cornwall Percentage of Lesson Time and Frequency of Lesson Episode in the Manipulatives Unit

<table>
<thead>
<tr>
<th>Lesson Number</th>
<th>Lesson Duration</th>
<th>Management %</th>
<th>Transition %</th>
<th>Wait Time %</th>
<th>Instruction %</th>
<th>Engaged Time %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>29:00</td>
<td>1.8 (1)</td>
<td>12.5 (6)</td>
<td>3.7 (3)</td>
<td>29.8 (7)</td>
<td>47.3 (9)</td>
</tr>
<tr>
<td>Three</td>
<td>29:00</td>
<td>1.1 (1)</td>
<td>13.3 (14)</td>
<td>3.1 (6)</td>
<td>27.8 (3)</td>
<td>47.9 (13)</td>
</tr>
<tr>
<td>Four</td>
<td>28:00</td>
<td>1.2 (1)</td>
<td>5.4 (4)</td>
<td>4.9 (4)</td>
<td>37.6 (6)</td>
<td>46.3 (8)</td>
</tr>
<tr>
<td>Six</td>
<td>29:30</td>
<td>2.4 (1)</td>
<td>11.9 (6)</td>
<td>1.5 (2)</td>
<td>29.2 (6)</td>
<td>50.1 (5)</td>
</tr>
<tr>
<td>Seven</td>
<td>28:30</td>
<td>1.5 (1)</td>
<td>14.6 (10)</td>
<td>2.7 (4)</td>
<td>25.0 (4)</td>
<td>51.6 (2)</td>
</tr>
<tr>
<td>Grade 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>58:00</td>
<td>1.3 (1)</td>
<td>12.8 (13)</td>
<td>1.0 (2)</td>
<td>36.7 (6)</td>
<td>44.2 (15)</td>
</tr>
<tr>
<td>Five</td>
<td>60:00</td>
<td>0.7 (1)</td>
<td>4.1 (8)</td>
<td>2.6 (6)</td>
<td>35.6 (7)</td>
<td>54.7 (7)</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>1.7 (1)</td>
<td>10.7 (8.7)</td>
<td>2.8 (3.9)</td>
<td>31.0 (5.6)</td>
<td>48.9 (8.4)</td>
</tr>
</tbody>
</table>
Instruction averaged 31.0% of the lesson time, ranging from 25.0% to 37.6% of total lesson time. Instruction decreased in the last lesson to a low of 25.0% with students involved in a familiar modified hockey game that did not require large amounts of instruction. Throughout the unit Anne utilized guided practice which involved a number of different instructional episodes. Anne provided a series of short instructions related to the tasks, followed by students moving into pair or group independent practice that was often closely directed. In lessons four, five, six, and seven a review of basic skills was followed by applying tasks, in the form of modified games. During these modified games Anne provided short instructional cues related to safety, skills, or organization of a particular task throughout the activity.

Engaged time was comprised of informing, extending, applying, and cognitive tasks and ranged from 44.2% to 54.7% of the total lesson time. The tasks included basic hockey (grade 3) and basketball (grade 5) skills, followed by modified games. The highest engaged times occurred in lessons five, six, and seven when students were involved in modified hockey and basketball games.

The type of task, number of episodes, and the percentage of total lesson time are presented in Table 11. Both grade three and grade five follow a similar instructional pattern in terms of the percentage of engaged time for informing, extending, applying, and cognitive tasks. During engaged time applying (43.3%) and cognitive (31.2%) tasks were most often utilized by Anne. These were followed by informing (18.6%) and extending tasks (6.9%). Refining tasks were not observed in this unit.

The emphasis on applying tasks varied greatly from 11.4% to 74.4% of the total engaged time. Applying tasks consumed over 20% of the total engaged time in all but one lesson. Examples of applying tasks were modified floor hockey and modified basketball games. The data represent a pattern showing that basic skills were introduced, practiced for a short duration, and followed by modified games. The percentage of lesson time spent
Table 11
Cornwall Percentage of Class time and Frequency of Task Type by Lesson for the Manipulatives Unit

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Lesson</th>
<th>Engaged Time</th>
<th>Informing</th>
<th>Extending</th>
<th>Applying</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>% F</td>
<td>% F</td>
<td>% F</td>
<td>% F</td>
<td>% F</td>
</tr>
<tr>
<td>Grade 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>47.3 (9)</td>
<td>61.5 (4)</td>
<td>*</td>
<td>11.4 (2)</td>
<td>27.1 (3)</td>
<td></td>
</tr>
<tr>
<td>Three</td>
<td>47.9 (9)</td>
<td>20.5 (3)</td>
<td>34.7 (4)</td>
<td>28.4 (1)</td>
<td>7.9 (1)</td>
<td></td>
</tr>
<tr>
<td>Four</td>
<td>46.3 (6)</td>
<td>*</td>
<td>*</td>
<td>44.3 (1)</td>
<td>55.7 (5)</td>
<td></td>
</tr>
<tr>
<td>Six</td>
<td>50.1 (5)</td>
<td>*</td>
<td>*</td>
<td>53.7 (1)</td>
<td>46.3 (4)</td>
<td></td>
</tr>
<tr>
<td>Seven</td>
<td>51.6 (2)</td>
<td>*</td>
<td>*</td>
<td>74.4 (1)</td>
<td>25.6 (1)</td>
<td></td>
</tr>
<tr>
<td>Grade 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>44.2 (15)</td>
<td>41.2 (4)</td>
<td>10.4 (5)</td>
<td>23.3 (2)</td>
<td>25.1 (5)</td>
<td></td>
</tr>
<tr>
<td>Five</td>
<td>54.7 (8)</td>
<td>7.3 (4)</td>
<td>2.9 (1)</td>
<td>67.5 (1)</td>
<td>22.3 (2)</td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>48.9 (7.7)</td>
<td>18.6 (2.3)</td>
<td>6.9 (1.4)</td>
<td>43.3 (4.2)</td>
<td>31.2 (3.3)</td>
<td></td>
</tr>
</tbody>
</table>

* Asterisk indicates no task was observed in this category
on applying tasks increased as the unit progressed. During applying tasks Anne provided positive general and corrective skill feedback, often stopping the game to provide skill or strategy feedback.

Between 7.9% and 55.7% of total engaged time was allocated for cognitive tasks, with an average of 31.2%. Cognitive tasks appeared in all lessons of the manipulatives unit. Generally strategy huddles and debriefs accounted for much of the cognitive tasks. During the huddle students typically made a tight standing circle and discussed tactics for the game and typically all students contributed to the discussion. For example, in floor hockey the students discussed position responsibilities for offensive and defensive players and then individual students volunteered to take responsibility for these positions.

Informing tasks occurred in four lessons. In these lessons Anne introduced basic hockey and basketball skills. Informing tasks provided introductory information on basic skills during the first three lessons of the unit and were absent in lessons four, six, and seven.

Extending tasks were utilized in three of the seven lessons of the manipulatives unit, one third grade and both fifth grade lessons. The time spent on extending tasks varied greatly. In lesson three the large amount of time spent on extending tasks (34.7%) involved Anne's teaching basic floor hockey skills.

**Fitness Unit**

The lesson episodes of the fitness unit were management, transition, wait, instruction, and engaged time (Table 12). Management consumed 2.0%, transition an average of 9.4%, and wait time an average of 2.4% of lesson time.

Instruction varied between 15.3% and 37.3% of the lesson time, with an average of 29.3%. Time allocated to instruction was similar throughout the fitness unit, decreasing in the last two lessons. The low instruction time in lesson five (15.3%) and lesson six (18.4%) allowed for higher engaged time.
### Table 12

**Cornwall Percentage of Lesson Time and Frequency of Lesson Episode in the Fitness Unit**

<table>
<thead>
<tr>
<th>Lesson Number</th>
<th>Lesson Duration</th>
<th>Management</th>
<th>Transition</th>
<th>Wait Time</th>
<th>Instruction</th>
<th>Engaged Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%_F</td>
<td>%_F</td>
<td>%_F</td>
<td>%_F</td>
<td>%_F</td>
<td>%_F</td>
</tr>
<tr>
<td>Grade 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>28:00</td>
<td>3.0 (1)</td>
<td>14.8 (4)</td>
<td>1.9 (3)</td>
<td>34.5 (6)</td>
<td>39.2 (5)</td>
</tr>
<tr>
<td>Three</td>
<td>28:30</td>
<td>1.9 (1)</td>
<td>8.5 (5)</td>
<td>2.5 (4)</td>
<td>37.3 (5)</td>
<td>43.1 (6)</td>
</tr>
<tr>
<td>Four</td>
<td>28:00</td>
<td>2.1 (1)</td>
<td>7.7 (4)</td>
<td>2.6 (2)</td>
<td>34.9 (8)</td>
<td>46.1 (6)</td>
</tr>
<tr>
<td>Six</td>
<td>30:00</td>
<td>2.7 (1)</td>
<td>7.3 (5)</td>
<td>3.1 (4)</td>
<td>18.4 (6)</td>
<td>61.8 (6)</td>
</tr>
<tr>
<td>Grade 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>57:00</td>
<td>1.4 (1)</td>
<td>7.8 (9)</td>
<td>1.8 (5)</td>
<td>35.1 (5)</td>
<td>51.0 (11)</td>
</tr>
<tr>
<td>Five</td>
<td>59:30</td>
<td>0.8 (1)</td>
<td>10.0 (6)</td>
<td>2.2 (1)</td>
<td>15.3 (8)</td>
<td>69.4 (10)</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>2.0 (1)</td>
<td>9.4 (5.5)</td>
<td>2.4 (3.2)</td>
<td>29.3 (7.3)</td>
<td>51.8 (6.5)</td>
</tr>
</tbody>
</table>
In this unit Anne provided a series of instructions related to the tasks, followed by students moving into pairs or groups to perform fitness tests that were closely directed by Anne. Engaged time comprised informing, extending, applying, and cognitive tasks and ranged from 39.2% to 69.4% of the total lesson time. Engaged time increased throughout the unit. Tasks included fitness testing, jump rope, and modified games to increase student heart rate.

The type of task, number of episodes, and the percentage of total lesson time are presented in Table 13. Fitness content for grade three was jump rope activities while grade five content was fitness testing based on the AAHPERD Physical Best (1989) fitness tests. In grade three Anne typically used informing (32.4%), extending (25.3%), and cognitive tasks (29.6%) with no applying or refining tasks. Informing tasks (32.4%) were utilized to provide students basic information and introductory tasks at the beginning of the lesson. In lesson one 71.7% of the engaged time was made up of informing tasks. Extending tasks varied greatly, from 26.9% in lesson 4, to 68.1% in lesson 6 of the third grade lessons. Practicing new jump rope skills created a high percentage of extending tasks in lessons three and six. In lesson six, a concluding jump rope lesson, Anne challenged students to attempt a high percentage of extending tasks. The other type of task was a debrief or cognitive task at the end of each lesson. Anne and the students discussed the jump rope challenges and the Jump Rope for Heart day organized for the end of the unit.

The two grade five fitness test lessons were coded as applying tasks taking 71.3% and 52.6% respectively. Cognitive tasks took 28.6% and 47.4% of the total engaged time. More time was allocated for cognitive tasks for grade five students and included problem solving tasks, personal goal setting, and discussions about fitness. In lesson five, where cognitive tasks made up 47.4% of engaged time, Anne took time to discuss fitness levels, encouraged students to choose appropriate personal fitness goals, and allocated time for students to calculate their target heart rate zone. In the last 10 minutes of the lesson the
<table>
<thead>
<tr>
<th>Lesson</th>
<th>Total Engaged Time</th>
<th>Informing</th>
<th>Extending</th>
<th>Applying</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% F</td>
<td>% F</td>
<td>% F</td>
<td>% F</td>
<td>% F</td>
</tr>
<tr>
<td>Grade 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>39.2 (5)</td>
<td>71.7 (4)</td>
<td>*</td>
<td>*</td>
<td>28.3 (1)</td>
</tr>
<tr>
<td>Three</td>
<td>43.1 (6)</td>
<td>15.8 (1)</td>
<td>56.6 (4)</td>
<td>*</td>
<td>27.6 (1)</td>
</tr>
<tr>
<td>Four</td>
<td>46.1 (6)</td>
<td>42.5 (3)</td>
<td>26.9 (2)</td>
<td>*</td>
<td>30.6 (1)</td>
</tr>
<tr>
<td>Six</td>
<td>61.8 (9)</td>
<td>16.8 (3)</td>
<td>68.1 (5)</td>
<td>*</td>
<td>15.1 (1)</td>
</tr>
<tr>
<td>Grade 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>51.0 (10)</td>
<td>*</td>
<td>*</td>
<td>71.3 (4)</td>
<td>28.6 (6)</td>
</tr>
<tr>
<td>Five</td>
<td>69.4 (6)</td>
<td>*</td>
<td>*</td>
<td>52.6 (2)</td>
<td>47.4 (4)</td>
</tr>
<tr>
<td>Average</td>
<td>51.8 (11)</td>
<td>32.4 (1.8)</td>
<td>25.3 (1.8)</td>
<td>20.7 (2.2)</td>
<td>29.6 (2.8)</td>
</tr>
</tbody>
</table>

* Asterisk indicates no task was observed in this category.
classroom teacher was present to assist students calculating their target heart rates. There were only two lessons in fitness for grade five because it was not a typical unit; the classroom teacher had requested that her students could do fitness testing in physical education.

**Cooperatives Unit**

The lesson time for the cooperatives unit ranged from 27:30 to 62:00. Management consumed 1.3%, transition an average of 9.8%, and wait time an average of 5.2% of total lesson time (Table 14).

Instruction ranged from 8.2% to 32.8% of total lesson time with an average of 18.7%. The time allocated to instructional tasks was low in lesson one (8.5%) and lesson two (8.2%) because students followed routines established for climbing and zipping in previous years. Typically at the beginning of these lessons students had one period of continuous instruction related to various tasks and safety features of the lesson. Following initial instruction, students moved into groups and started cooperative activities or put on their climbing equipment (harness and helmet) for zipping or climbing. The equipment was checked by Anne or the classroom teacher before students participated in a climbing or zipping activity.

Engaged time was made up of cooperative tasks, safety tasks, and cognitive tasks, ranging from 37.6% to 70.5%. In every lesson except one, engaged time was above 60%. In lesson three (37.6%), engaged time was low as students played a cooperative game where there were large amounts of transition and instruction time.

The task type, percentage of lesson time, and the number of instructional episodes in the cooperative unit by grade level appear in Table 15. Cooperative tasks ranged from 51.9% to 79.1% of engaged time. Since Anne accepted a wide variety of student
<table>
<thead>
<tr>
<th>Lesson Number</th>
<th>Lesson Duration</th>
<th>Lesson Episode</th>
<th>Engaged Time</th>
<th>Instruction</th>
<th>Wait Time</th>
<th>Management Transition</th>
<th>% F</th>
<th>% F</th>
<th>% F</th>
<th>% F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>54:00</td>
<td>8.5 (8)</td>
<td>69.6 (11)</td>
<td>8.5 (4)</td>
<td>32.8 (4)</td>
<td>62.2 (8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three</td>
<td>29:00</td>
<td>19.5 (7)</td>
<td>37.6 (5)</td>
<td>19.5 (4)</td>
<td>6.4 (6)</td>
<td>62.2 (8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Six</td>
<td>27:30</td>
<td>8.5 (4)</td>
<td>62.2 (8)</td>
<td>27.1 (1)</td>
<td>2.1 (3)</td>
<td>62.2 (8)</td>
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<tr>
<td>Grade 5</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>58:00</td>
<td>7.2 (8)</td>
<td>70.5 (10)</td>
<td>7.2 (8)</td>
<td>9.8 (9)</td>
<td>62.4 (7.6)</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Four</td>
<td>62:00</td>
<td>8.2 (5)</td>
<td>71.5 (5)</td>
<td>12.5 (5)</td>
<td>3.9 (6)</td>
<td>62.4 (7.6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Five</td>
<td>58:30</td>
<td>8.2 (5)</td>
<td>63.1 (7)</td>
<td>8.2 (5)</td>
<td>1.2 (1)</td>
<td>62.4 (7.6)</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Average</td>
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<td></td>
<td></td>
<td></td>
<td>18.7 (4)</td>
<td>5.2 (6)</td>
<td>9.8 (6.8)</td>
<td>62.4 (7.6)</td>
</tr>
<tr>
<td>Lesson</td>
<td>Total Engaged Time</td>
<td>Cooperative</td>
<td>Safety</td>
<td>Cognitive</td>
<td></td>
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<tr>
<td>Grade 3</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>69.6 (11)</td>
<td>53.4 (4)</td>
<td>19.7 (4)</td>
<td>26.7 (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three</td>
<td>37.6 (3)</td>
<td>77.9 (2)</td>
<td>*</td>
<td>22.1 (1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Six</td>
<td>62.2 (8)</td>
<td>79.1 (5)</td>
<td>*</td>
<td>20.9 (3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Grade 5 |                  |             |        |           |
| Two     | 70.5 (10)         | 51.9 (4)    | 33.6 (5) | 14.5 (1) |
| Four    | 71.5 (5)          | 66.7 (3)    | 5.5 (1)  | 27.8 (1) |
| Five    | 63.1 (7)          | 61.2 (3)    | *      | 38.8 (4) |

Average: 62.4 (7.3)  65.0 (3.5)  9.8 (1.7)  25.1 (2.2)

* Asterisk indicates no task was observed in this category
responses the students were able to choose their own ways to achieve the task. Each task was a challenge that had no specified form or route to achieve the set goal. Cooperative tasks included climbing a wall, belaying, or working with partners or group to achieve a cooperative task. A description of the tasks appears in Appendix H.

Cooperative tasks required students to be physically engaged to accomplish the activity. Project Adventure concepts were more evident in the cooperative unit than in the manipulatives and fitness units. Each task involved a combination of risk, trust, challenge, problem solving, cooperation, and/or communication.

Safety tasks made up a large percentage of lesson time in the first lessons on climbing (grade five) and zipping (grade three) and a minimal amount of time in the initiative lesson. Safety tasks were not required in the cooperative games lesson.

Cognitive tasks ranged from 14.5% to 38.8% of engaged time and comprised an average of 25.1% of the total engaged time. Unlike cooperative tasks, cognitive tasks did not require students to be physically active. High percentages of cognitive task time occurred in lessons one (26.7%), five (38.8%), and six (20.9%) with the teacher requiring students to problem solve or strategize. In the other lessons the cognitive tasks were the debriefs. In lesson four (27.8%) a long debrief involved Anne and the students discussing the initiative activities they had just participated in and related trying/challenging in the gymnasium to trying/challenging in the classroom. She drew on students' experiences to increase their knowledge and understanding of what had transpired during the lesson.

**Briefs and Debriefs**

Debriefs occurred after every lesson and during some lessons. The function of the debriefs during the lessons was similar to that at the end of the lessons: discussions of skills and strategies for game play, questions about how students felt about incidents during the lesson, issues of safety, and prompts to make "good" choices during the lessons. During the debriefs Anne often praised students' efforts. The time devoted to
debriefs ranged from 2:18 to 7:19 minutes in the manipulatives unit, 2:07 to 3:57 minutes in the fitness unit, and 2:25 to 14:19 minutes in the cooperatives unit.

The topics discussed in the debrief varied; some related to content, others to behavior, and others focused on Project Adventure concepts. In the manipulatives unit the most frequently discussed topics were basketball and hockey skills, strategies, and game rules. Competition was addressed in the debriefs. She explained that competition should be replaced by personal challenge. Anne asked the students "who feels good?" and "who feels bad?" She associated feeling good with cooperation and feeling bad with competition. Anne supported the concept that every student in the class can "win" (feel good) if they challenge themselves to try their best even if their team did not literally win. This notion of trying one's best at one's own level was discussed in debriefs in all the units.

In the fitness unit debriefs focused on trying or challenging oneself and cooperation. Personal challenges that students chose for themselves were discussed frequently. Students were asked questions like: "How do you reach your personal goals?" and "How do you learn new skills?" They invariably answered that they could reach their personal goals and learn new skills, if they tried and helped one another.

In the cooperatives unit students were encouraged to share their feelings about their experiences. In these debriefs the five Project Adventure concepts of cooperation, risk, trust, challenge, and problem solving, and safety issues were frequently discussed. In lesson two Anne explained to students that she was not happy with the behavior of a group that had a near miss. A near miss occurred when a group allowed their rope to go slack when a student reached the top of the climbing wall. After the near miss Anne stated that certain students in the lesson had been attentive, motivating, and supportive and asked how other students could be more responsible and safe to avoid near misses in the future. Anne asked
students to reflect on this issue and write in their personal journals about this experience in physical education.

In lesson five of the cooperatives unit after playing "Frog Wars," the students were asked by Anne: "How did the choices that you made in the lesson effect your day?" The students said that the beginning of the lesson was more enjoyable because people were throwing yarn balls firmly but gently and students were playing by the rules. In the second part of the lesson students commented that they and others were throwing the balls too hard at times and that they were "cheating" by not following the rules closely. The students described the problems: "we were too serious," "sometimes not in control," "too competitive and not so much fun," and possible solutions to those problems: "make better choices," "not say 'I'm going to get you'," "not throw the balls hard," and "help each other" (CFN, p. 38).

2.2 What were the students' motor responses during the physical education content?

Student responses to tasks were analyzed in terms of task congruence, opportunities to respond, and topographical appropriateness or inappropriateness. The manipulatives unit and fitness unit are described first, followed by the cooperative unit. In the manipulatives and fitness units students' congruence to the task, opportunities to respond, and appropriateness of the response to instructional tasks are presented in Table 16 and Table 17 (manipulatives unit).

Task congruence ranged from 78% to 100% in the manipulatives unit, with four of seven lessons at 100% (Table 16). Lessons below 100% presented tasks related to basketball and hockey skills in which target students modified the tasks up or down. However, in subsequent lessons target students were on the stated task 100% of the time.
Table 16

Student Congruence, Opportunities to Respond, and Appropriate Response to Instructional Tasks in the Manipulatives Unit

<table>
<thead>
<tr>
<th>Lesson Number</th>
<th>Total Engaged Time</th>
<th>Congruence</th>
<th>OTRs * A/I</th>
<th>OTRs /Min</th>
<th>Appropriate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor Hockey</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>13:45</td>
<td>80</td>
<td>15/5</td>
<td>1.3</td>
<td>75</td>
</tr>
<tr>
<td>Three</td>
<td>13:54</td>
<td>90</td>
<td>10/1</td>
<td>1.3</td>
<td>90</td>
</tr>
<tr>
<td>Four</td>
<td>12:59</td>
<td>100</td>
<td>12/0</td>
<td>1.1</td>
<td>100</td>
</tr>
<tr>
<td>Six</td>
<td>14:46</td>
<td>100</td>
<td>11/0</td>
<td>0.8</td>
<td>100</td>
</tr>
<tr>
<td>Seven</td>
<td>14:42</td>
<td>100</td>
<td>31/0</td>
<td>2.1</td>
<td>100</td>
</tr>
<tr>
<td>Grade 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fitness Testing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>25:42</td>
<td>78</td>
<td>48/12</td>
<td>4.3</td>
<td>83</td>
</tr>
<tr>
<td>Five</td>
<td>32:52</td>
<td>100</td>
<td>17/0</td>
<td>1.6</td>
<td>100</td>
</tr>
</tbody>
</table>

* OTRs were coded appropriate or inappropriate.

The level of difficulty required in completing these tasks was low enough for all students to be successful. Anne accepted a wide variety of student responses in lessons three to seven which were modified games, thus the high percentage of congruency.

In all lessons the rate of OTRs was low, ranging from 0.8 per minute in lesson 6 to 4.3 per minute in lesson two (Table 16). In addition to OTRs, students dribbled basketballs for approximately four minutes at the beginning of lesson two. During dribbling, every student had a ball and the task response rate was high. In contrast, when the students were involved in a modified game with one or two balls or pucks among half the class or the entire class group, OTRs were less frequent.
Opportunities to respond involved a quality analysis and were recorded as either appropriate or inappropriate. Anne wanted the students to experience success in the tasks they participated in, and appropriate responses ranged from 75% to 100%. Only three lessons had appropriate responses recorded below 100%. Generally Anne exposed students to the basic skills and then moved them quickly into modified game situations.

**Fitness Unit**

In the fitness unit congruence ranged from 72% to 89% for grade three jump rope lessons and was 100% for grade five (Table, 17). In the two fifth grade fitness testing lessons students did not modify the tasks. In the fitness lessons for grade five the rate of OTRs was low, ranging from 0.8 to 2.4 per minute of engaged time, because of the fitness testing content. In lesson five target students had 48 OTRs in 41:16 minutes. The students participated in a nine minute run in which every lap of the gymnasium was recorded as one OTR. In the first part of the lesson the target student ran non-stop for 48 laps and her partner ran 44 laps, which she recorded in the second part of the lesson. In addition to this task, the students were directed by Anne to help motivate their partners with prompts and hussels while they were running. Students were observed encouraging their classmates (CFN, p. 15).

In addition, opportunities to respond involved a quality analysis and were recorded as either appropriate or inappropriate. Appropriate responses ranged from 72% to 81% with the grade three students. In these lessons students were challenged by jump rope activities which they were not always able to perform appropriately. The grade five students recorded 100% appropriate responses during fitness testing.

**Cooperative Unit**

In the cooperative unit the activities were designed to allow students to choose from a wide selection of tasks. Due to the nature of the tasks, where a student might spend the
### Table 17

**Student Opportunities to Respond, Congruence, and Appropriate Response to Instructional Tasks in the Fitness Unit**

<table>
<thead>
<tr>
<th>Lesson Number</th>
<th>Total Engaged Time</th>
<th>Congruence %</th>
<th>OTRs * A/I #</th>
<th>OTRs /Min #</th>
<th>Appropriate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3 Jump Rope</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>10:58</td>
<td>72</td>
<td>18/7</td>
<td>2.3</td>
<td>72</td>
</tr>
<tr>
<td>Three</td>
<td>12:17</td>
<td>89</td>
<td>21/6</td>
<td>2.2</td>
<td>78</td>
</tr>
<tr>
<td>Four</td>
<td>12:56</td>
<td>74</td>
<td>25/6</td>
<td>2.4</td>
<td>81</td>
</tr>
<tr>
<td>Six</td>
<td>18:32</td>
<td>74</td>
<td>32/10</td>
<td>2.7</td>
<td>76</td>
</tr>
<tr>
<td>Grade 5 Testing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>29:04</td>
<td>100</td>
<td>22/0</td>
<td>0.8</td>
<td>100</td>
</tr>
<tr>
<td>Five</td>
<td>41:16</td>
<td>100</td>
<td>48/0</td>
<td>2.4</td>
<td>100</td>
</tr>
</tbody>
</table>

* OTRs were coded appropriate or inappropriate.

The majority of the lesson either climbing the wall, playing a cooperative game, or cooperating by helping a group member on an initiative activity, opportunity to respond data were less useful. Since Anne accepted a wide variety of student responses, no task modification could be discriminated and students were on-stated task and 100% congruent. Anne encouraged students to challenge themselves at their own level and therefore no topographically correct form was specified and therefore student responses were recorded as appropriate. If inappropriate behavior occurred, it was likely to be unsafe behavior and was desisted quickly by Anne. A near miss in lesson two provided an example of an inappropriate behavior. The fact that there were so few inappropriate responses, a function of the severe physical injury consequences for failing to perform the task correctly,
demonstrates an example of a difference between manipulative and fitness and cooperative tasks.

2.3 What was the instructional climate and how was it developed?

Observations from the Task Structure System and field notes were used to answer this question. Anne developed a positive instructional climate. She held the students accountable for trying hard and working together by constant monitoring, interacting, praising, providing different forms of feedback, post-task feedback, and public recognition for students' achievements. Anne continuously monitored and interacted with students in many different ways. As was noted in the field notes:

She does not stand still and observe, but interacts continually and moves to different students. The teacher provides positive comments to many students: "that's great" and "you guys are awesome" (CFN, p. 2). If the students are not encouraging each other as much as teacher would like, she rotates, provides perimeter supervision and tries to motivate the students to try and to encourage each other. (CFN, p. 25)

Anne expected students to be ready to participate in an enthusiastic manner. At times, she had to motivate them to get involved in the lesson, for example she said, "We're not ready to go. Try to forget things that happened in the bus or playground- concentrate on the choices that you are going to make. What are we trying to do today?" (CFN, p. 28). Anne expected students to respect each other, continually reminding them that, "it is disrespectful to talk when someone else is talking. I would not talk while Jeff was talking" (CFN, p. 16). The ambiance of the gymnasium was positive, energetic, and motivating for the students. Target students were often observed giving put-ups to support and encourage each other. Examples of put-ups could be giving someone a pat on the back or telling them that they did a good job.

The instructional climate was created by interactions among teachers and students. This positive climate prevailed in the manipulatives, fitness, and cooperatives unit. In all units Anne wanted to "catch" students behaving appropriately. She frequently reinforced
their appropriate behavior, saying such things as, "take a look at Cheryl. She is doing exactly what she should- hands low on stick" (CFN, p. 17). Students encouraged each other to achieve their goals:

When a low skilled student catches the rubber chicken, Hillary claps and cheers. In group juggling it was OK if the person beside you caught the chicken. Although the teacher did encourage the students to support and help each other, she wanted them to catch it if it was thrown to them. (CFN, p. 38).

Towards the end of the observations the researcher noted in field notes that the classroom climate was:

A warm learning environment where students are given some of the responsibility to organize their position and develop their own strategies. They were on-stated, and there were few verbal desists. (CFN, p. 42). [Teacher] asked at the end if they had fun and there was a unanimous shout [affirmative] from the class. A positive learning environment where the higher skilled students did not dominate. (CFN, p. 33)

In the manipulatives and fitness units there were more specific guidelines for the implementation and completion of tasks than in the cooperatives unit. However, in the manipulatives unit Anne always provoked a choice, for example, different ways to hold a hockey stick. She frequently provided feedback related to the effort and/or performance of the students, saying such things as, "nice spotting, nice way to have your hands up" (CFN, p. 36). She frequently took time to recognize students who achieved their goals and made public the results of their performance informing their classroom teacher or the school principal during or after the lesson. Students who climbed to the wall platform were allowed to sign their name on the wall. Grade three students signed a poster if they were able to zip, while fifth grade students signed a poster for attempting to and/or catching the trapeze bar. At the end of the year all grade three students had tried the zip at least once and 10 grade five students caught the trapeze out of the 16 who attempted the jump. Students who attempted or completed these tasks were recognized with a certificate at the end of year assembly.
Low management time indicated that Anne had few discipline problems or off-task behaviors in the gymnasium. The few discipline episodes that occurred were short and did not disrupt the flow of the lesson. Anne had set rules, routines, and expectations and consistently reinforced them to provide a predictable learning environment for the students. What Anne expected was also reinforced by classroom teachers and the principal. She expected students to listen and did not allow students to talk or manipulate objects (balls or jump ropes) while she was providing instruction. Similarly she would listen to students with the same respect. Anne controlled student behavior with short verbal desists (approximately 2 second intervals) and/or time-outs. She wanted students to take responsibility for their own behavior. At times Anne asked students to put themselves in time-out if they needed to. In lesson 5 of the manipulatives unit a student did send himself to time-out. She wanted students to learn to make the right choices and solve their own problems, which was an important part of her discipline strategy.

Summary

The results of Anne's gymnasium ecology suggested that she was an efficient manager and organizer of her physical education environment. The content was presented within a positive gymnasium climate where the students were generally actively engaged. There were low management, transition, and wait times. In addition, there was a low frequency of off-tasks behaviors.

Instruction time accounted for an average of 31.0% of lesson time in the manipulatives unit, 43.3% in the fitness unit, and 18.7% in the cooperatives unit. Target students were involved in engaged time an average of 48.9% in manipulatives unit, 51.8% in the fitness unit, and 62.4% in the cooperatives unit.

In conclusion, Anne was effective in the way she organized and presented physical education content to her students. However, students' responses to the physical education
content in the manipulatives unit were low in terms of OTRs, a weakness in her teaching. The infrequency of extending tasks and the absence of refining tasks suggests that this was not a skill based program. In most tasks Anne accepted a wide variety of student responses, providing choice in activity that allowed the students to have success in term of tasks' congruence. This meant that students were generally on the stated task, infrequently modified the task up or down, and were infrequently off-task. In addition, students' responses to tasks were generally appropriate. Anne had developed a positive and motivating instructional climate in which the students enjoyed the lessons, were interested in the content, and wanted to participate in their physical education classes. The teacher's and students' perceptions of these classes and their physical education program is discussed in question three.

3. What were the teacher's and students' views of physical education?

3.1 What were the teacher's espoused educational values and beliefs?

Cornwall School was Anne Duke's first full-time teaching job and she was in her fourth year. Before teaching at Cornwall, she had substitute taught for two-and-a-half years and had been the youth director for The Diabetic Association's weekend and camping program for three years. Anne held a Bachelor's Degree in physical education and had begun post-graduate study. Anne had been trained in adventures in the classroom and adventure-based counseling at Project Adventure in Massachusetts. She was certified as a "high ropes," "initiatives," and "accessible challenge" instructor and was a trainer of instructors at an adventure education center. Anne had presented in-service workshops for middle and high school teachers promoting the introduction of adventure education into the school curriculum.
Anne held values and beliefs that were central to who she was as a teacher and what she did in the gymnasium. Her educational values and beliefs were aligned with the Project Adventure curriculum model. The underlying goal of her program was building students' self-esteem. Student success at their own ability level was important to building feelings of self-worth. This overall goal influenced the specific goals of her program, the instructional formats she utilized, and the way content was designed and implemented. Other goals which helped develop self-esteem were building cognitive skills, having students take responsibility, creating fun in learning, building social skills, and developing a healthy attitude toward competition. Anne was not alone in trying to accomplish these goals, since many of them were integrated across curriculum areas at Cornwall School. In order to achieve her goals, she utilized a student-centered teaching style and cooperative tasks.

The Project Adventure Model

The Project Adventure curriculum model provided a framework for Anne's educational values and beliefs. Cornwall School's curriculum was based upon the Project Adventure curriculum model of cooperative activities, the brief and debrief, and the five concepts of trust, risk, cooperation, challenge, and problem solving. Anne said, "basically we use the component words as a guide... That's what the curriculum is based around, those words" (I, 37, p.13). In addition to the five Project Adventure concepts, Anne wanted to add communication as a component for the whole school. She believed communication was an important underlying element of her work with students.

We talk about how you talk to people. In the gym you see the kids huddle. Now part of huddling is listening, and part of listening is communicating. [When I first got to Cornwall, students] didn't even know what the word meant. They just assumed because people were making noise that they were communicating. They were hearing each other. We talk about communicating as not only using words and saying things, but also listening. How do you do those things? When we have a circle - we do circles all the time in the gym and in the classrooms- you sit and face each other. You look at the person. If you don't want to share you can pass. So there's a process to it. It's just a matter of formality that we haven't added the word communication. (I, 37, p. 18)
Other central concepts of the Project Adventure curriculum were the brief and debrief. The brief was a discussion before class to give the students a "cognitive warm-up," and the debrief was reflecting on and talking about the experience after it occurred.

Goals for the program

Anne believed that building students' self-esteem was the overall goal of her program. She thought it was important for students of all ability levels to experience success at their own level in order to feel good about themselves. She structured activities so that students would develop positive attitudes about themselves, others around them, physical activity, and school in general. She believed if students developed a positive sense of self-worth, they would feel good about coming to school and participating fully.

Anne believed that if students acquired certain attitudes, behaviors, and knowledge, this could facilitate the goal of building self-esteem. For example, if students learned a new skill, they would feel good about their accomplishments and therefore feel better about themselves. Unlike most traditional physical educators, the skills she focused on were not always physical. It was a goal of her program for students to improve their motor skills, but it was a secondary goal. At times after lessons she would say "the most positive parts were seeing that the kids' skills were getting better" (I, 46, p. 37). Her primary goals after self-esteem were building cognitive skills, having students take responsibility, creating fun in learning, building social skills, and developing a healthy attitude toward competition.

Self-Esteem

Anne defined self-esteem as:

An improved feeling of yourself. A feeling of self-worth. When we process with the kids, they say, "Nothing is wonderful." We ask "Can you think of anything you did good today?" Generally they say "no." And they need to see that "Yeah, I'm important and something I did today was worthwhile and being here is important." And when we sit in a circle and we do process or we debrief and someone says it really meant something. "It really helped me when Johnny said..." and you can see Johnny's face just light up and you know that kid is going to remember that for three weeks. And that's what it's about and I don't think they get that in
traditional [physical education]. I don't think that's a built-in component. (I, 37, p. 8)

Anne explained the value of building self-esteem.

I think when Project Adventure was first done, absolutely the bottom line was through improved self-esteem everything else will happen. The social aspects will increase, the grades, the academic aspects will increase. The bottom line is they really felt that self-esteem was the difference. (I, 37, p. 8)

To Anne, improving students' motor skills was a secondary part of the process of building self-esteem.

We feel through the skill and through the activity itself they're going to gain confidence and self-esteem and social skills and somewhere along the line they [say] "I can." [They start to develop an] inner personal self-worth. (I, 37, p. 1)

Anne believed her program had a concept focus, not a content focus: "[Physical education] is a means to an end. It's not the end" (I, 36, p.3). She viewed physical education as a means to enhance students' social, cognitive, affective, and physical development, and to build their self-esteem.

[Our Program] is less skill-focused, at least in terms of skill improvement. Ours is more a knowledge of the activity and using the activity as a process. The activity in and of itself isn't the primary goal. I think that might be the traditional focus [where] the activity itself is what's important. To us the volleyball is just a means to getting through maybe the social skills or affective things we want to get to. The skill is just a part of building the self-esteem. The play is part of building self-esteem . . . If they ever learn to play the game and become pro volleyballers is the least of our interests, where I think in the traditional sense that skill focus is the important part. (I, 37, p. 1)

The focus of Anne's program was on providing opportunities for students of all skill levels to succeed and to have positive experiences. Anne believed that a program with an emphasis on skills mastery would not be conducive to building self-esteem, even though she believed students did learn motor skills and sports knowledge through her program.

Always remember that your bottom line was not teaching necessarily the skills of basketball. It was to give them opportunities to succeed or achieve in a positive environment and how are we going to create a positive successful environment? Well, obviously you don't put that much emphasis on the skills. You give them opportunities to respond but you
don't necessarily put the emphasis on "we're going to do ten lay ups today until we get it right"... [Instead, I would ask myself] how can we add this and make it fun? And just silly, wacky games with basketball and then each time you incorporate a rule to basketball that made it more basketball-like. And pretty soon they were playing. They understood out of bounds, double dribble. They understood all these things. (I, 37, p. 9)

Anne believed if students had a positive attitude about themselves and about physical activity, they would remain active later in life.

We may not be improving their personal fitness [a great deal], but at least their enjoyment of activity is increased, their self-esteem is increased. Those types of things I think we make a difference on and then consequently they're going to be involved in a sport longer or at least activity. (I, 37, p. 7)

Cognitive Skills

Anne did not believe that the acquisition of cognitive skills was a classroom-only endeavor. She wanted students to gain new knowledge about sports, health, and physical activity. Cognitive activities did not replace physical activities, but Anne designed many tasks to require students to use reasoning skills to accomplish their personal goals and program goals. For instance, on the climbing wall students needed to plan ahead to think of the best route to take. During games such as floor hockey, reasoning skills were required in the huddle, as students gathered in their teams to plan, strategize, communicate, and problem solve.

Anne often emphasized the huddle more than the physical activity. "[There is] value in the huddle. We huddle a lot. Sometimes that's the most important part, more than the activity. In that particular lesson that might be what was valued the most" (I, 37, p. 4). Anne was pleased when students initiated their own huddles during the cooperative games unit. "That was the first class that had a huddle and a plan. They didn't execute it, but they really felt that this was a team thing. That was really interesting." (I, 67, p. 149). Anne often focused on the level of students' thinking, communication, and cooperation rather than the actual physical game play.
The way they communicated and the types of things they were talking about, strategy-wise. It was beyond a "I'm going to do that." They were always talking in terms of "we're going to, we need to," which is a higher level of thinking. That went very well. Their actual execution of the play always wasn't perfect, but just thinking in terms of "we" was a major plus I thought. (I, 51, p. 61)

Anne allocated time for students to work on strategy, attempting to help students understand the game, the strategy, and how to implement it.

The strategy and teamwork are very important... [In class] we talked about offense and defensive things you can do. They get really complicated with their strategies and the team work and they'll even get disappointed or angry with a student who is not carrying out their role. It's really kind of neat. This class obviously didn't have the time to do it, but that's usually how it evolves and that's always the emphasis, the strategy and teamwork, that is, not winning. (I, 63, p. 128)

During a fitness lesson Anne wanted her students to understand the components of fitness and be able to set personal fitness goals, so she gave them almost half of the class time to work on those cognitive tasks. Even though she valued cognitive skills, she struggled with the notion of giving students the time for these tasks. "That was hard for me as a PE teacher to give up activity time that we're so engrained with, and sit down with cognitive time" (I, 43, p. 24).

**Student Responsibility**

Another important goal for Anne was for students to take responsibility. Helping students develop a sense of responsibility was a school goal at Cornwall. Anne wanted students to take responsibility for others and to take responsibility for their own learning. She wanted students to take responsibility for and care for each other during their experience in physical education.

We talk a lot about taking responsibility for each other. We've seen that in some of our [lessons] and we're doing that right now for our field trips. Caring about others. Actually not just saying it or being in a classroom group but actually physically and emotionally being there and that's a part of the socialization. That's a big part of what we're doing. (I, 37, p. 12)
She described a variety of ways in which students took responsibility for each other.

I try to [teach the students responsibility]. Like today with the spotting in the gym when we belay. Our poster. It is belayer's responsibility [to read the belay poster]. We do peer teaching. You're responsible for making sure your partner is ready when they go down the zip. There is responsibility. And our game scooter shuffleboard you have a partner and some teammates you're playing with - actually it's sort of against, but not really because they're playing the game without a score. And they're responsible for maintaining the game at a continuing level.
(I, 37, pp. 31, 32)

Another strategy to develop responsibility was matching older students with younger ones.

This occurred throughout the school day in various classrooms, including physical education.

What we've done is we've put more and more responsibility with the fifth graders throughout our whole building. When we started this it was a goal, a thought, that we wanted the fifth graders to be able to come in and help them [the third grade students] dress [get harnessed] and the kids would see this is something I need to be responsible for in the future, knowing how to get dressed. They've been a real positive part of the experience and when the younger students were afraid sometimes, we'll have a fifth grader talk with them about it. Kind of on the kid level. (I, 61, p. 113)

In addition to taking responsibility for others, Anne wanted students to take responsibility for their own learning. One of her goals was for students to make decisions about their physical education experiences.

I let them change a rule or add a rule or add something and they come up with their own idea of another way to get them out of jail. And the more we continue to play this, that would be the next step. Instead of me changing the lesson, I'd let them change it to make it something they've come up with. (I, 51, p. 61)

Anne encouraged students to take responsibility by making some of their own decisions.

They can make decisions about their personal goals. No matter what type of goal it is. They can decide if they want to make a change. Some of the kids were setting goals on their own before they even got to the activity and that's something we do a lot. (I, 44, p.26)

Student choice was an underlying value that Anne implemented with her students to enhance their responsibility.
We talk about wise and unwise choices. The kids making choices. And it's in a social aspect. Again the game or the activities are just the means and the kids always have choices. . . The kind of cognitive choices that we try to work on the process. Step-by-step these are how we solve problems. (I, 37, pp. 4, 5)

According to Anne students did not always make wise choices. When poor choices were made by the students they discussed it in a debrief usually following the lesson.

The choices they made [like throwing the ball hard at] some of the kids. The choices they made by letting their attitude, tone of voice, decisions affect others. All of those things I think in the second half of the lesson didn't go well. It was the same things that went fairly well in the beginning half of the lesson. (I, 67, p. 150)

Even though she wanted students to take responsibility, at times Anne found it difficult to relinquish her power in order to shift responsibility for learning to her students. She stated that it did not just happen; it had to be planned.

It's something that's very difficult. It's giving away the leadership or the direction of the class to the students. Making them responsible for the learning. To me it's important to do whenever possible, because truly the way they want to run it is what should be important. Shifting responsibility. You actually plan for that. You have to almost plan for that to happen. (I, 37, p. 31)

Anne's belief in the importance of teaching student responsibility was supported by classroom teachers. "It's always a concept that everything we do and even into the classrooms- the teachers always come out with making wise choices. In the classroom they have stations called wise choices" (I, 37, p. 6).

Creating Fun in Learning

Anne stated that student enjoyment was an important goal of her program.

[A good program is] one that excites the kids. The teacher's role is to excite the kids about the learning process, to instill in the kids that they want to improve themselves and do better. The thing I think of is creating exciting environments so that the kids want to be there. (I, 36, p. 4)
Anne believed if students thought the activities were "fun," they would be more likely to want to participate energetically in their experiences and to continue to participate in the future. She believed it was necessary to have a fun program so that students would develop a positive attitude toward physical activity. The focus of the operational curriculum and how content was organized was guided by this principle. Anne adapted the school district's course of study to reflect her emphasis.

Obviously fun is important to us. My graded course of study has "Joe can hit the volleyball ten times with a forehand pass over the net." It's very traditional and obviously for me, "did I teach the forehand pass today? Yes." I don't take it quite to the extent of the criterion level. I will adapt it and of course I add a lot of different things to add some creativity and fun to what's going on. To get some more cooperative play involved in what's happening. (I, 37, p. 27)

Anne encouraged a fun atmosphere, but pointed out that activities did have a purpose.

If you looked in [on a class] some people would observe that as chaos. It's fun, the kids are doing things and it's free a lot of the time . . . It's a fun environment, but they do have a purpose. There are goals at each one, we call them challenges. The principal comments often how high my standards are for the kids and what I expect them to achieve, but it needs to be that way in that fun environment. (I, 36, p. 10)

For Anne, the cooperative game of frog wars embodied many of the elements central to her sense of a successful lesson. (Frog wars see Appendix 8)

They seemed to enjoy it. That was probably the most positive thing. It was successful in terms of they were doing a good job problem solving, communicating, working together and because of that, they really seemed to enjoy the activity and those were the positive parts for me. Because they could communicate and they could do those things they got a different level of enjoyment out of it than if they were struggling just to talk to each other or stand beside each other. Then of course it wouldn't have been there, but since they were able to get to the next step the positive part was they actually had fun doing it. (I, 56, p. 80)

**Building Social Skills**

Anne believed it was important for students to learn proper social skills and felt these skills could improve students' self-esteem and were necessary later in life. Anne structured activities to include social interaction. She explained how building social skills
related to self-esteem. "The social part is a real important part because without it how can you build your self-esteem if you can't treat people around you nicely? It's kind of a reflection on how you're feeling" (I, 37, p. 11). She encouraged students to say positive things and have positive social interactions with each other. "We asked how many people's buddies gave them a put up today and all of them raised their hands and we went around and they shared exactly what their buddy had done" (I, 37, p. 13).

An important part of developing social skills was the debrief. During the debrief, Anne encouraged students to share their thoughts and feelings with each other, even if it might have been emotionally risky.

They were sharing feelings as well as thoughts on things. I'm getting little questions - "I'm not being listened to" - that's a hard statement to make in a class especially. Sometimes in this type of situation it's hard [for a student] to make a statement because you might get shot down. They kind of spoke up and took a little bit of risk. (I, 56, p. 81)

Anne held students accountable for their social behavior.

I want to maintain accountability. I do keep a chart on all the classes and I do keep track of who is here. Who is not. Who is prepared; who is not. Who had good days, bad days and it's not ever skill-wise. I don't keep track of skill that way. It's social behavior parts. The kids always get satisfactory or outstanding. The only way you get unsatisfactory is to not participate. (I, 37, p. 26)

She thoroughly enjoyed observing students exhibit positive social skills.

What's most important to us is the huddle and watching them talk there and that was just a blast for me. That was the best part. They actually are listening to each other and caring - when they hear an idea - not in a judgmental way. They'll dismiss it, but they do it in a very kind way. They're not going "that's a stupid idea." [They say,] "that was nice. Hey, that's good." (I, 39, p.40)

**Developing a Healthy Attitude Toward Competition**

The last goal of Anne's program was for students to develop a healthy attitude toward competition. She believed that a competitive program would not help develop students' self-esteem, because students would often feel bad about losing a game or being less skilled than others. She encouraged them to compete against themselves and their
previous performance, rather than competing against other people. Anne reduced the competitive content of the course of study by utilizing such strategies as not keeping score, altering the rules of games, and frequently changing the teams. She believed students could gain from the experience of losing if it was discussed in the debrief and related back to their lives. Anne also felt competition detracted from fun. She believed students did not enjoy the focus on competition and winning that she perceived many physical education programs promoted. She stated, "I don't think they enjoy the traditional aspect where the skill is what's focused on. Winning is what's focused on. The better kids are looked up to" (I, 37, p. 6).

Anne encouraged students to challenge themselves, not compete against others, so that students of all skill levels would have positive feelings about their experience.

We play to have fun and compete with ourselves, an inner competition. We don't keep score. We only play to have fun; we don't need to compete with others to make me feel good and put them down. We want them to feel good about what they're doing. Competition is about challenging yourself or your group. We encourage the students to play with someone, not against them. (I, 37, p. 15)

She wanted students to avoid negative competitive comments. Anne believed her ideas about competition had transferred to the students who influenced each other with positive peer pressure.

Somewhere they're getting it. Most of the kids just kind of look at them [a student who is being competitive] and they're like "what are you doing? What do you mean we're tied?" And then it comes from the kids and not me a lot of times... The message is to that kid "we're not playing to keep score here or win this game. We're playing it because it's a fun game to play." (I, 63, p. 128)

She encouraged students not to compare performances with each other.

They all had a score when they were done. They all had a number lapse. I didn't see the kids going around asking "what did you get?" And then immediately saying "well I got this." Kind of one upping. That didn't occur. They did ask a few times what they got, but I never heard the follow up statement of "well I got this." They did ask. It was more like "Gee how did you do? Oh you finished [second]. Great." More of a camaraderie. Not as competitive. So that was nice. (I, 43, p. 23)
Anne saw a competitive atmosphere as emotionally threatening to students. She wanted to create an atmosphere where students would feel safe while learning a new physical activity.

[I wanted students to practice] those things that they learned in a previous lesson but putting them in an environment where it was safer. They could play the game and have fun and learn the rules about the games but again in a safe environment where they're not going to feel that - the pressure is not there. If you've seen any playground basketball games you'll know what I mean. (I, 52, p. 63)

Integration with other curriculum areas

Anne believed it important not to work on these goals in isolation; the whole school had a Project Adventure focus. Many of the goals and concepts would be the same no matter which classroom one entered. For instance, Anne said that many classroom teachers focused on such things as taking responsibility, cooperation, and building social skills. In order to be effective, she thought it was important to integrate the Project Adventure concepts across all curriculum areas. At times, she and a classroom teacher would also concentrate on integrating subject matter, either from the physical education program into the classroom or vice versa.

Anne explained that Project Adventure concepts were integrated more often than subject matter.

The Project Adventure concepts obviously have to be integrated across the board. But in terms of just PE, how important is it that PE is integrated into the classroom? I think again that gives creditability to the PE program. We do some very specific integrated units like with the health and the fitness. Probably integrate studies in terms of reading, writing, arithmetic that teachers do in terms of actual cognitive learning. The Project Adventure parts are seen as more important. (I, 37, p. 26)

During a unit on the human body for fifth grade students, Anne connected her goals to the classroom teacher's, "to get a little deeper cognitive understanding of heart rate and what that was about. And to follow up some things the classroom teachers were doing" (I, 43, p. 23). During this fitness unit, Anne relied on the classroom teacher to use physical education content in the classroom.
Hopefully back in their room they can pick their actual [target] number and really set a goal. That's the next step. After we finish the test they are going to set goals and they're going to talk about what it's going to take for them to reach the goals and then we'll retest in terms of that so there's kind of a follow-up. We're not going to always do this in class . . . The teachers asked, "can we do something other than what they're doing in their classrooms?" (I, 44, p. 26)

Teaching Style

Anne's goals influenced the instructional format she used. She believed the most effective way to achieve her goals was to utilize a student-centered teaching style and cooperative activities.

Student Centered Teaching Style

Because Anne wanted to build self-esteem, it was important to her to have students succeed at their current level, whatever it was. Therefore, she felt it important to start at the level of the students, focusing on their interests and abilities. Anne believed that in a traditional physical education program, students were closely directed by teachers and were dependent on their instruction. For her, the student should be center stage, with the teacher in the role of facilitator, not a director of activity. Anne described her physical education program as: "an environment that centers around the child, focuses on the child, listens to a child's needs" (I, 36, p. 2).

Anne believed that challenge at the individual level helped students build self-esteem. She established tasks that were challenging, but achievable, and students were encouraged to set goals at their level of capability. Anne wanted students to understand that the concept of risk is personal and each student has a different level of acceptable risk. What is risky to one person might seem easy to another.

We talked about being afraid. Some of the kids who were afraid to zip are the first ones who are going to get up and do a math problem in front of the class and some of the ones who just jump right down would never volunteer to go up and do a math problem. So we process it in terms that the kids would understand. In terms of things that are going on [with academic subjects] in the classroom. (I, 89, p. 6)
Anne believed it was important to make sure every student felt valued and successful during their activities. "To me it's an important part- they need to feel wanted, successful, no matter what level they're successful in . . . It is important to keep them on even ground" (I, 36, p. 7).

Because Anne valued a student-centered approach to learning, she became less directive and stepped back more often to see what developed. Anne described her role in the teaching process as a facilitator. "In general my role is to be on the outside looking in" (I, 56, p. 82 ). When Anne first came to Cornwall, she had to adjust since her teacher preparation program had not trained her in this style of teaching.

When I first started I really struggled with the way I had been taught in my college classes and I had to tell myself, "it's okay to relax." You have to let go of control sometimes and let the kids run things. And it wasn't hard for me to do, but getting comfortable with it and when someone would come in and you would be kind of standing off to the side watching, "well what is she doing?" They're doing it. When I do stations sometimes I don't have to do a thing. If what I've taught the kids has been right to that point, they don't run around. They're playing nice and they're doing their thing and I'm just standing there. The control of the classroom is really the children's. (I, 37, p. 4)

Anne believed that her role was to guide the activities and let the students actually control them.

[In the lesson it is] definitely their chance to make choices. It's a facilitated approach. . .There are times that you need to be a little more direct. Most of the time if it was my option it's going to be more of a facilitator where I step down and the children are more [at the] center. We want the students to teach themselves how to run it, to teach each other how to do it. (I, 37, p. 10)

In one of the cooperative activities of group juggling it was clear that the students were operating the activity with minimal guidance from Anne:

I kind of step out and stop manipulating and let them work out group problems. From there on once [the class] got to four objects they pretty much ran the game. In the end they took out objects they wanted to and set the goals they wanted. (I, 63, p. 125)
She felt that her role was to guide the students and that eventually they would be able to make the right choices and direct their own learning. "It's designed to be totally child centered and to be run by the children, but [sometimes] it doesn't happen for whatever reason . . . I think whenever it does happen, whenever it can be child centered, it's desirable" (I, 37, p. 31). Anne cautioned that "you have to be happy or satisfied with whatever they come up with" (I, 63, p. 126).

Cooperative Activities

Anne's teaching style also relied heavily on cooperative activities since she believed there were the best strategy to achieve such goals as students' taking responsibility for other students, building social skills, and not being overly competitive. Anne asked students to work in pairs or small teams more often than individually or in two large teams. She altered traditional games, such as basketball, to become more cooperative in nature. A goal for games often included "being good partners" (I, 66, p. 144). To Anne, cooperating meant various behaviors; students could be helping, spotting, motivating, encouraging, or cheering for each other.

For Anne, sometimes the most important cooperation appeared at the beginning of a challenge, when, for instance, a student was getting ready to do the zip line. She believed it was helpful when others said encouraging things to a student before a risky activity.

Some of the best support I noticed was the kids on the ground were enthusiastic. The kids [on the zip] had other people talk to them. Some of the real support comes then. Not when they're actually up and they're all clapping. It happens when they're coming up or when they're getting dressed [putting on a harness]. Some of that comes from the fifth grade helpers too. (I, 61, p. 112)

Anne noticed students supporting and encouraging each other in a climbing lesson.

One kid was terrified to come down. He was the first kid down from the ground helping the next kid. He was pulling that rope, [saying] "I did it, you can do it." Things like that. Using some of the words he'd heard the teacher use. "It's okay to be afraid. I was." [After those words of encouragement], Tony wasn't afraid to try. (I, 90, p. 7)
When students paired up for a nine minute run Anne thought that they motivated each other.

They really got into cheering and helping and kind of keeping their partners - we're kind of guessing here - maybe the less skilled physically of the kids really motivated. That was fun to watch. They were very into keeping their partner going. (I, 43, p. 24)

Anne saw cooperation as a focus of the whole school program.

I think we put much more emphasis on [learning to get along.]
. . . It's a philosophy everywhere [in this school] and they're all taught the same way to share. They're taught to share everywhere, not just in the gym. They're taught to cooperate everywhere. (I, 37, p. 23)

Summary

Anne believed that schools should develop the whole person, including attitudes, emotions, and social skills, as well as intellectual and physical skills. She did not believe that physical education should be isolated from the rest of the school, having its own agenda. Anne appreciated that the whole program at Cornwall concentrated on the Project Adventure concepts of trust, risk, challenge, cooperation, and problem solving. She believed influencing students' attitudes about themselves was the most important factor. The main goal of her physical education program was to develop students' self-esteem. She believed if students developed a positive sense of self-worth, they would feel good about participating in physical education and school in general. To help influence this attitude, her other goals were building cognitive skills, having students take responsibility, creating fun in learning, building social skills, and developing a healthy attitude toward competition. In order to achieve all of these goals, she utilized a student-centered teaching style and cooperative tasks.
3.2 What were the students' perceptions of their physical education program?

Students from one third grade and one fifth grade class were observed and interviewed following the physical education lessons. Questions probed their views about physical education and what the experience was like for them. An inductive analysis of the transcripts of these interviews provided three themes that captured students' views: goals for physical education, enabling conditions for success in physical education, and long term benefits of physical education. Students highlighted cooperating, challenging themselves, taking risks, having fun, and learning new motor skills as the goals of their physical education experiences. Students also indicated that communicating, trusting each other, not becoming competitive, and problem solving could enable their success in physical education lessons. Students believed the positive long-term outcomes of their program were increased self-esteem and better knowledge about their bodies, health, physical fitness, and sports.

Goals for the physical education program

Cooperating

To students, cooperation meant spotting climbers, encouraging and helping others, avoiding fights, working together on problems, and communicating effectively. One student, Bill, provided examples of the ways students cooperated during a climbing lesson. "Everybody works together to - some people spot you and some people help you to get up the wall and there's people cheering you on" (I, 68, p. 1). Dan's definition of cooperation related to avoiding fights, working together, and finding solutions to problems. "Cooperation's definition isn't involved with fighting or arguing about anything. It's just they're all working together and finding a solution for the problems" (I, 68, p. 1). Lia gave her definition of cooperation. "It means that we work together. We're a big team. We're almost like a family" (I, 68, p. 4).
For many students cooperation was a goal in itself. High-skilled students like Dan learned to cooperate.

[My goals were] just to be a Michael Jordan and slam dunk and stuff, but that's not what I could do, at least not yet, so I just tried my best... My goal was to try my best to get the ball to everyone and not be such a ball hog or something... I learned from the lesson that you've got to work together. You can't hurt other people. You've got to pass the ball around and not be such a super hero, superman. (I, 49, pp. 48, 52)

Bob provided an example of high-skilled students not cooperating in a game. "A couple of the people play for baseball teams and they throw balls as hard as they can and hit you in the head and stuff" (I, 64, p. 138).

For many students cooperation was also a means for attaining other goals. They believed cooperation made the program more fun and allowed them to accomplish more difficult tasks than they could on their own. As Paul said, "if you don't work together you can't accomplish nothing" (I, 67, p. 155). Brenda agreed, stating, "you can't do it on your own. It's not like every person for themselves, because you won't really get any goals" (I, 50, p. 59). At times students would spontaneously form partnerships during activities so they could accomplish more difficult tasks. Bob said "we can cooperate pretty good together 'cause if we cooperate together we might be able to do a little more harder things that need cooperation" (I, 64, p. 138).

Students explained that cooperation was important since it could prevent certain negative situations. Maria said, "people don't get in trouble," while Bob said, "they wouldn't get in fights... Nobody's feelings would get hurt" (I, 64, p. 143). Conversely, students believed that cooperating allowed certain positive things to occur; for instance, it made class more fun. Dan said, "the most positive thing that I enjoyed most is working together... We were doing a whole bunch of things together" (I, 49, p. 50). Jessica reflected many students' feelings that cooperation was important because compromise and negotiation allowed the lesson to progress without disagreements.
I learned to cooperate and in that final time you really had to cooperate with your partner . . . Because there were times you wanted to go this way and they wanted to go that way and you had to pick which way you're going to go. (I, 63, p. 136)

Challenge

One of the students' goals was to challenge themselves. They reflected the concept of challenge from the Project Adventure curriculum in trying their best or pushing themselves. Students such as Jennifer often commented, "my goals were to do my best and try my hardest" (I, 42, p. 17). The trying ethic was evident in students' discussions of both initiative lessons and more traditional modified games lessons. Mark said:

Most people were trying their best for their team and I believe that they really did try and I saw a lot of people trying their best. They were trying to block, to get the puck out of the way from the castle. (I, 50, p. 58)

In an initiatives lesson, Ci Ci took ownership for her personal goal. She wanted to try hard for herself and to set her goal at her own level. "My goal for the lesson was to try to do my best and do what I could do. Not try to do what somebody else wanted me to do" (I, 54, p. 72).

Usually, students believed challenging themselves meant physically exerting themselves or attempting new activities. However, certain behavioral goals could also be seen as challenges, as Lia pointed out.

Well, it's challenges to be able to do today without biting off each other's heads and getting through the day without arguing or anything and meeting our goals and cooperating with each other and being a team really. (I, 68, p. 1)

Students believed that challenging themselves helped them learn new skills. In the fitness unit Larry increased the difficulty of the jump rope task. "Like the harder ones I would make 'em more difficult to do, so I would learn a lot more besides the jumping with the ropes" (I, 40, p. 10).
Another benefit of challenging themselves was the possibility that a seemingly unattainable goal could become a reality. At the end of one lesson Dean was pleasantly surprised to realize that his group had been able to work together and solve the problem. He believed that even though a task seemed difficult it was important to try.

I thought it was going to be impossible. I learned that sometimes if you don't believe something - like if you think it is impossible it may be. If you think you can't do something, if you try harder you may be able to do it. (I, 54, p. 75)

Students believed challenging themselves was fun. Zipping had been Bill's favorite activity, but later he preferred the added challenge and active participation of repelling.

[Repelling is more fun] because it's more of a challenge because the zip you just jump off and that's that. Everything does it all by itself, but when you jump off the repelling then you have to use your brake hand all by yourself and stick out your feet so that you don't hit the wall. (I, 58, p. 97)

In addition to allowing certain benefits, such as learning new skills or having fun, students seemed to feel that trying had a value of its own. Students wanted to stretch themselves, even if they were not successful at the actual tasks. If they gave what they perceived to be their best effort, they felt satisfied, regardless of the outcome. Dan reflected their view, saying "try your best and then she [Anne] would say 'losers are winners and winners are losers,' because if you try things then you're a winner and that's what matters" (I, 68, p. 7). Bill failed to succeed with pull-ups in the fitness lesson, but he felt that he tried his best and he recognized that there was always next time. "When I got over to the pull ups I didn't even do one. Then, I felt pretty bad, but I thought that since I tried that was all I could do. I just have to try better next time" (I, 39, p. 5). Maria summed up the students' perception of trying. "If you try then you would succeed no matter what. Because you tried" (I, 68, p. 5).
Taking Risks

In addition to challenging themselves, students thought it important that they learn to take risks or try activities which they viewed as risky. To students, a risky activity was one about which they felt afraid. This goal emerged most in discussions following climbing lessons. Many third grade students, for instance, were initially afraid to do the zip line. Students often believed they had learned to overcome their fears and felt a great sense of accomplishment after completing, or even attempting, these risky activities. Ryan said, "I learned not to be afraid of heights and to take a risk" (I, 57, p. 92). Jessica also learned to overcome her fears: "[I learned] to take a risk. . . You're first scared about stuff that's challenging for you and you say 'I don't want to do this because it's too hard.' But, I wanted to try it and I did" (I, 57, p. 92). Joyce's fear of the zip line was reduced by the encouragement of her peers. "When I went down I was a little bit scared but people kept on cheering for me" (I, 59, p. 107).

Dan summed up the students' philosophy of taking a risk.

If somebody gives somebody a risk to take, they take it and that's like being the Project Adventure way because you never wimp out or anything. Just like don't accept it because you're afraid that you might fail. It's just about taking the risk and trying your best. If you try your best then you're a Project Adventure kid. (I, 68, p.5)

Having fun

Students believed that having fun was a goal of the physical education program and was one of their teacher's goals. Bill said, "I think her goal is just to have fun and be safe and to teach us how to take our heart rates when we're active" (I, 39, p. 4). Students often spoke about which activities they believed were fun. Many students enjoyed their experience on the zip line, such as Sara, who described zipping: "It was just like when you're falling back it's just like when the mat is back there. It is just like the mat is getting bigger and bigger and when I'm going up it's like it gets so high. It's just fun" (I, 39, p.
4). Dan learned to have fun and not detract from other students' fun. "I learned about just purely having fun and not hurting anybody's feelings by saying 'Oh you're no good'" (I, 68, p. 4).

**Learning new motor skills**

Developing motor skills was another goal articulated by students. They wanted to learn new sports and the skills required to play them and believed that this was a goal of their teacher as well. At times students mentioned that acquiring new motor skills or improving fitness had been what they enjoyed most about a lesson. Students mentioned wanting to learn such skills as dribbling a basketball, throwing a football, and passing a hockey puck.

Students were able to speak about the sports skills they wanted to develop. Nat said, "[I want] to learn how to pass the hockey thing, the puck, and how to dribble and to get ready for the next thing that we don't know how to do in hockey" (I, 42, p. 33).

Students such as Bill often set personal fitness goals for themselves before they attempted activities.

[The thing I enjoyed most] was the sit-ups... I was trying so hard and when I made 27 then I felt pretty good... Because I feel I met my goal because I thought that I couldn't do more than five, but I actually got more. (I, 39, p. 6)

Students also set motor skill goals during the cooperative unit. Lia said "my goals were to go down the zip line quickly and be able to repel a couple of times" (I, 58, p. 94).

Students believed their teacher wanted them to learn how to execute skills correctly and play games by the rules. Diane said, "Miss Duke's goal was to teach us how to play basketball in a more orderly way and play, knowing how to do our throws correctly so we can play the real way" (I, 47, p. 41).

Students' satisfaction with the content of lessons was influenced by their individual skills and background. Some highly skilled students seemed less happy with
Anne's emphasis during traditional sports units. During basketball lessons, high skilled students like Dan wanted to move on to more difficult tasks. "I would spend more time with shots and jump shots" (I, 49, p. 52). On the other hand, some low skilled students like Roy believed they needed more time to practice basketball skills.

I'd spend a little time on one thing instead of doing something new... Say we're just learning how to dribble and we're getting pretty good at it. I wouldn't go off and start bouncing it through legs and stuff... Sometimes people need time to practice... Some people are like bouncing with both hands on the ball and they need a little time. (I, 49, p. 52)

Students believed that Anne taught them basic motor skills, not complex sports skills. Bill, a low-skilled student, was happy about that situation, as he saw it as less threatening.

She teaches you all the basic skills of the game and she teaches you, like in basketball, she teaches you how to dribble and she teaches you how to pass and shoot, but she doesn't teach you all the fast breaks and all of that. But she just teaches you the basics. (I, 68, p. 5)

Dan was less sure about this approach. "You've got to be real patient when she teaches you basic skills, because if you're close to Michael Jordan when you're in basketball, but she's teaching you how to dribble, you're real impatient" (I, 68, p. 5). Such comments of dissatisfaction occurred less frequently in initiatives and climbing lessons.

Enabling Conditions

Students noted that certain behaviors could help them achieve success in physical education. These enabling conditions were communicating, trusting, not becoming competitive, and problem solving.

Communicating

Students noted communication as an enabling condition for successful participation and cooperation. To students, communicating effectively meant listening to other students and avoiding name-calling. Tes provided an example of effective communication.

We talked to each other without calling each other names and nobody got put out of the game... I think that in this lesson everybody listened. They
had a good conversation instead of calling people names. I think they
worked together. (I, 49, pp. 49, 53)

To Dan, effective communication also meant talking kindly to each other.

I think their goals were to communicate properly . . . Like if somebody's
feelings were hurt - say like I hurt somebody's feelings, I would go over
and say "sorry" and then I'd make it up to them somehow. Plus we didn't
cuss at each other like some kids do. (I, 49, p. 49)

Trusting

Trust was a factor that sometimes enabled students to achieve success. It was an
issue most often manifested during risky or cooperative activities. Mark defined trust as
"you've got to believe in somebody and they've got to believe in you . . . I have to believe
that they know what they're doing" (I, 63, p. 136). Chas explained that sometimes people
need to earn trust.

The way we were to trust people was when it was [going to be] your turn to
push they all said "I don't think I'll trust you pushing me" or something like
that. And then when you really are pushing them, they'll say "now I trust
you." (I, 63, p. 137)

Sarah used the game of frisbee tag to explain that students needed to trust each
other to play fairly and not hurt anyone.

If you don't like somebody you either have a chance to hit 'em hard, or
below the waist, hit 'em soft and play fair. Most people played fair. I think
the main idea is the classroom [members] believed in each other and they
trusted each other. It isn't like "well I don't like any of them." . . . [The
goals of the lesson were] to trust each other and to cooperate.
(I, 61, pp. 117, 118)

In a group juggling activity, students needed to cooperate and trust each other in
order to be successful. Bill noted that he trusted his classmates not to be angry if he made a
mistake.

I think that I learned to trust the people in the class and myself and I learned
that if I missed the ball and I messed up, that everyone won't hate me just
because, "hey, he dropped the ball. I'm going to kill him." . . . At first I
thought there was [pressure on me], but then I dropped it a couple of times
[and saw that there wasn't]. (I, 61, pp. 120, 121)
Not Becoming Competitive

Competitive activities were not a focus of the Cornwall physical education curriculum. Games of basketball and hockey were modified to be less competitive. Generally students did not support a competitive sports environment and felt that excessive competition could detract from fun and make others feel bad. Students believed they should avoid competitive behavior, which they believed encouraged fighting, emphasizing winning, making comments which hurt other people, ridiculing others when they made mistakes, and taking it personally if they lost. Dan explained how a competitive environment can reduce enjoyment of class.

I don't like the fighting and the kicking and shoving and stuff. And just like "we won and you guys didn't." Keeping the score actually. I just want them to have fun. It's not a competition. It's just about having fun.
(I, 68, p. 2)

Bob explained that a less competitive atmosphere was more enjoyable because students were less likely to be ridiculed if they made a mistake.

You'll just have fun and like if you make a mistake and something, you can just laugh. And when people laugh, you can know that they are laughing at what you did and not at you and stuff like that. You can start laughing too.
(I, 64, p. 143)

Jen expressed the view that competition should be thought of as a personal challenge. "I think people shouldn't compete with their partners. They should compete with themselves" (I, 42, p. 18). Bill held the majority view that in physical education class students had been taught to be non-competitive and they preferred this form of play to competition.

You learn to be less competitive and that games are supposed to be fun and if you try that there are no losers . . . If you try you're pretty much a winner 'cause if you try to win and you've tried as hard as you could you've won, but officially by game rules that's being competitive and we have to try to quit being so competitive. (I, 68, p. 3)
Other students agreed that while winning was not important, being fair was. Maria said, "the only thing I know is to play fair and not every time you have to win" (I, 61, p. 122).

To reduce the likelihood of competition, Anne changed teams every lesson. The students shared their own game strategies with their teammates and at times with members of other teams. They did not feel a competitive need to protect their strategies. Maria explained, "we could tell each other our plans. They can use them next time and we can use theirs" (I, 68, p. 6).

Most students preferred a non-competitive environment. However, there were occasions when some students cared about winning. Maria said, "[today] some people wanted to win more than just be fair" (I, 61, p. 119). Eddie wanted to win, but wanted to avoid hurtful competitive behavior. "My goal was trying to get along with people and try not to hurt anybody while we were also trying to win" (I, 39, p. 4).

Students believed that when they became competitive, it was because of an unwise choice they had made. Bob explained, "it was our fault that we got too competitive. It wasn't [Ms. Duke's] fault. She didn't make us get competitive. We chose to get competitive. She told us that we could either have fun or you could not have a good time" (I, 64, p. 141).

Certain activities lent themselves to more or less competitive and aggressive behavior. In one lesson, the time was split between two cooperative games. In the first activity the whole class worked together to juggle different objects. The second game was a tag in which students were to hit opponents below the waist with frisbees. Students could see different behavior manifested in the two games. Bill believed the second game was more competitive.

In the second activity everybody was like "hey, I remember when you did this. You hit me above the waist."... The first game wasn't win or lose. It was just like a have-fun activity and the second one was - some people really like a win and lose [situation.] Afterwards, they were sitting there, "Oh man we won. You lost, ha, ha."... [In the second game, people said] "I don't like you so I'm going to throw this frisbee hard."... I think that
some people were so much obsessed with winning that they tried to hurt people. They tried to win more than be fair. (I 61, p.119)

Problem Solving

Students believed problem solving helped them reach their goals. Problem solving was manifested in two ways. First, certain motor activities, such as initiatives, required reasoning and problem solving in order to complete them. The second type of problem solving was students resolving their own interpersonal conflicts instead of allowing them to escalate into fights.

The teacher presented tasks that required students to solve a series of cooperative motor problems. If all activities were successfully completed, they beat a fictional "Wizard."

Jo: [The teacher] read the cards to us so we could find out new ideas for what we were doing. ...We had to figure out [the answers] ourselves ...

Faith: We really figured out the problems ourselves. The only thing she could tell us was at the end because we had to beat Mr. Wizard on our own terms ... We beat the Wizard by working together and communicating ...

Hillary: Her goals were to help us and to see like what we could do and to see if we could problem solve and stuff ... She was real happy with us at the end of the thing. She saw how good [we were] at problem solving. How everybody beat Mr. Wizard. (I, 54, p. 74)

Students knew the teacher expected them to take responsibility and try to solve some problems by themselves. Bob commented that:

People had to solve problems without going and telling the teacher. Like if you got hit with a ball if you know you got hit then you have to go back and be cooperative or if you didn't then you kept on going. (I, 64, p. 138)

Roy explained how the class discussed interpersonal problems they were having.

If we had a problem we'd stop and she'd blow the whistle. We'd talk about it to see how we could improve on it and that would stop the problem. If it happened again we'd just keep on doing it until we'd understand. (I, 49, p. 50)
Long-Term Outcomes

There were certain elements of the physical education program which students viewed as positive long-term outcomes of the program such as increased self-esteem and better knowledge about their bodies, health, physical fitness, and sports.

Increased Knowledge

Even though students may have initially expected only to improve their physical skills, they realized that they had also learned things in physical education, such as gaining knowledge about their bodies, health, and physical fitness. Lia explained how heart rate is related to fitness. "What I learned about was that the slower your heart rate is going the better your shape, the shape that you're in, because if you're not in very good shape your heart beats real fast to pump the blood out into your body" (I, 39, p. 8). Kris said, "[Ms. Duke wanted] to help us learn about the heart and our health and just like to give us stuff to help us think."

Many activities in physical education class involved cognitive skills, such as reasoning and problem solving. Lia explained that "we found a solution that we could do to get the thing around, all those objects around without dropping them" (I, 61, p. 115).

Students acquired knowledge and a new understanding of sports. During huddles they learned how to plan strategies to achieve specific goals in these games and which strategies were most successful. Students huddled during the hockey game to develop a team strategy. Brenda explained one huddle, saying "we had to pick the strategy. We had to all agree on it . . . We talked about who would be up front and like go out and distract the offense and like get ready" (I, 50, p. 58). Chas, a third grade student, displayed his understanding of the strategy behind the game of "eggball."

We had a goal of trying to pass it to our team and get to an easier position . . . Maybe like if you're the rover then you could go anywhere, but like sometimes you can't just go ahead and take it from somebody. Because somebody has it you can't just go up there and take it. Like you have to wait till they pass it and then you can go after it. (I, 53, p. 71)
Students were able to reason about strategies, weighing the possible risks with the possible outcomes. Bill explained:

I think you learn that if you help people then you will be helped. That's sort of like if you take a risk - like in frisbee tag if you take a risk to go and save a lot of your people and only risk one person, that would be a good strategy. (I, 68, p. 6)

**Increased Self-Esteem**

Students recognized that an outcome of this challenging, fun, non-competitive, cooperative environment was enhanced self-esteem. Students saw that an increased self-esteem had benefits and they could identify ways to improve it. Students mentioned things like "I learned about not feeling bad about yourself" (I, 68, p. 6). Maria explained the benefits of a healthy self-esteem. "If you think badly about yourself, you feel more down. But if you feel good about yourself then you feel happy and you get more happier as you go along" (I, 68, p. 6). Students believed that a positive self-esteem could help them learn more effectively. Bill, a fifth grade student, explained the role of the school:

Self-esteem is like what you feel about yourself and the school sort of helps you understand what things mean to you. It helps you along with your life. If you thought that you were an accident or that nobody likes you, then you'll do bad at whatever you're trying to do. But if you think "hey, I'm good at this school, or hey, I can do this," then you'll do good. (I, 68, p. 7)

Mark, a low-skilled student, commented "I learned how to be a good sport, because all the other times I really didn't know how to do that until Miss Duke started helping me and giving me faith in myself" (I, 50, p. 57). Students believed teachers cared about their self-esteem. Sarah said the teachers "want you to feel good about what you did" (I, 39, p. 6).

Bill suggested one way to develop others' self-esteem was to say positive things to them. "[I would] start telling them the good things they did, but then maybe later I'd tell them some of the bad things that they could improve on" (I, 58, p. 104). Bill believed another strategy to improve self-esteem was developing the ability to reason about
challenges and risk activities. "Some challenges are hard and some of them are easy. So you kind of learn what you should do and what you should not do and build up self-esteem" (I, 68, p. 6).

Summary

Students at Cornwall School were able to reflect on their experiences in physical education class and discuss them. They seemed enthusiastic about the program and appeared to enjoy their time in physical education. Students' personal goals for the program were to cooperate with others, challenge themselves, take risks, have fun, and learn motor skills. They believed certain behaviors could enable their success with these goals. These enabling conditions were communicating effectively, trusting each other, not becoming competitive, and problem solving. Students believed two long-term outcomes of the program were increased self-esteem and a better knowledge about their bodies, health, and physical fitness.

4. What supported the implementation of the program?

Teachers and administrators believed one thing essential to the effectiveness of Cornwall School was the staff's unified educational philosophy based on the Project Adventure concepts. They believed they were dedicated and committed to the same ideals since they chose to work at the school and had been personally selected for the school by the principal. Once on the staff, the shared decision-making, team planning, cooperation among staff, and positive relationship with the principal enhanced their sense of program ownership. The staff had common goals across all content areas, including physical education. There appeared to be a strong connection between the goals of the classroom teachers and those of the physical education teacher. There was an emphasis on cooperation among the staff and between the staff and students at Cornwall. The
classroom teachers and administrators interviewed viewed physical education as vital to the school program. Five factors seemed to contribute to the implementation of the program: a shared vision, positive staff relations, integration, team planning, and the teachers' and administrators' view of physical education.

Shared Vision and Staff Commitment

Because the staff shared a common educational philosophy they felt that this commonality made their jobs easier. Kate Moab, a fourth grade teacher, said, "I believe that if I were to pick one thing [that contributes to the effectiveness of the program], it would be the commitment of the staff" (I, 70, p. 15). Kate explained the qualities of a Cornwall teacher.

I definitely believe it takes a special kind of person to be here. I think you need to be a person open to ideas and a person that's not into your own focus. You need to be able to share. You need to be able to work together with other people. You teach that [to the students]. That's what you teach and you need to believe in that. (I, 70, p. 11)

Jenny Jack, the first grade teacher, believed it was important that Cornwall teachers be dedicated to a common educational philosophy.

You need to buy into it. You need to have a staff that believes in it and for it truly to be effective everyone has to be coming at it the same way. And I suppose there are many other effective elementary schools, but again I think that they must have a unified philosophy. (I, 71, p. 8)

According to Bev Murphy this specific philosophy needed to be a Project Adventure "attitude."

You have to have a Project Adventure attitude. It has to be a part of you or else it's not going to come off. You have to really believe in it. That you're into cooperation and problem solving and not fighting and that kind of thing. It's really more of an attitude and atmosphere and knowing that everybody else thinks the same way and that you can get support from someone else is important and I think that helps me do my job well. (I, 69, p. 6)

The principal, Michael Wood commented "It's my belief that all these teachers are here by choice. They can leave this building and go to another public school in this district and not lose their job. In my experience, that hasn't happened" (I, 72, p. 39). He
believed that the ability to select a staff that shared a common educational philosophy was essential to an effective school.

I never used to believe this, but the longer that I'm at Cornwall or the longer that I'm in education my belief is [having an effective school] comes down to personnel. You can say what you want. You can have the greatest curriculum in the world. You can do this, you can do that, but if you don't have the right person in there then it won't be as successful as somebody else. I think an effective program, first of all you have to have the right person and that's determined by what your mission and your goals and philosophy are. I think most traditional schools don't have a clue. They just hire somebody that has either good grades in college or they've been recommended. I think you need to find someone that matches your particular philosophy, goals, and mission of your particular school. (I, 72, p. 20)

The principal believed that it was his role to continually nurture teachers' initial dedication to Project Adventure goals and shared focus.

If you hire the right people, if they're here for a common purpose and common goal then automatically they have some ownership, but continuing that ownership can sometimes be difficult because people can fall out of step with the Project Adventure program and don't want to go to camp any more. They don't want to be a ropes course instructor. They don't want to do outdoor education any more, so it's a continual reminding them of why we're here... We're here for the Project Adventure program. They're complaining because they have to go get re-certified at an adventure education center. They're complaining because camp is up. You need to sit down and evaluate why you're here. And if you're feeling uncomfortable with that then we need to make decisions to find you something else. I think it's a maintenance program on my part of always bringing them in focus with why they're at this school. (I, 72, pp. 10, 11)

To help maintain the original goals, the teachers had a committee that guided the school community. This cooperative effort among teachers was called the Instructional Support Team and included the principal and other interested teachers who were concerned with and continually reflected on the role of Project Adventure in their school. The principal commented:

We meet once a month with a group of senior teachers to look at that program. To determine if we're still on track with our mission, goals, and philosophy and if not, we make recommendations to the total staff concerning changes that we deem to be necessary. (I, 72, p. 9)
Staff Relations

The teachers interviewed at Cornwall Elementary School believed their jobs were made easier by positive staff relations. They seemed to have positive attitudes about their jobs and were supportive of each other. The teachers assisted in making decisions, had a good relationship with the principal, cooperated with each other, and had procedures to help deal with staff conflicts. The principal explained why they operated that way.

It's much more work to have the teachers assist in that shared decision making process than it is for me to sit down and say "this is the way it is." But that's not the Project Adventure philosophy. The Project Adventure philosophy is cooperative learning with shared decision making and if we don't model that, then we're being hypocritical teaching that to the kids when we don't model it for them. The teachers bear as much responsibility and make as many decisions here as anybody else, and basically majority rules. We vote on virtually everything that happens. I can't think of anything in this school right now that's mandated by me that the teachers haven't bought into or haven't agreed to do, so that's part of that process of shared decision making. (I, 72, p. 11)

The teachers believed they had a positive and professional relationship with the principal. Susan Stroud, the fifth grade teacher, spoke for others when she said:

I look at my relationship with Michael as a healthy, working, responsible relationship. He supports me with what - if I were to have a conflict with a student he would support me. He would support me in the eyes of parents if they were questioning what I was doing. Also he would support me with a problem, if there occurred a problem with downtown. And I try to support him and his ideas and what he would like to do. (I, 68, p. 7)

There were tensions among the staff sometimes. However, the teachers and administrators tried to resolve conflicts among staff by using the Full-Value Contract. The principal described this process:

I think there's conflicts and tension in the program, but I think they're staff-created. I don't think the program creates the conflicts and tensions. It's a very competitive building and I guess it's that by nature. A lot of people are very young here. They want to make sure that they're doing everything they can do to be their very best at school. They're very hard working, so there are conflicts and tensions. A lot of it has to do with the time commitment that they're putting in . . . There's a certain amount of professional jealousy that goes on in the building. As far as being resolved we do something in the building called the Full-Value Contract. We started
that two years ago where we made a commitment that if there is a problem or conflict, something that needs resolution, that you confront that person that you're having that conflict with and that person has an obligation to listen, accept that criticism, accept that conflict and then let it go after that and we try to foster that Full Value Contract as much as possible. Sometimes that doesn't work and at that point then I'll bring the parties together and try to resolve it with me being the mediator between those two parties. Basically we expect the teachers to resolve it among themselves and if they can't do it, then I'll try to resolve it for them. (I, 72, p. 7)

Susan Stroud provided an example of the contract's use with another classroom teacher:

There are conflicts. You can't have this amount of people and not have conflict. I had a conflict with another staff member this year. We tried one-on-one. Nothing was resolved so we included Michael. The three of us sat down and at that point in time we used Full-Value Contract on each other. Something that's not easy to do. It's not easy to tell a person, "I am very, very mad at you and this is why," and then to let this go. It's not a human trait to let go of those feelings. But we did and I can say that I can go to this person and we can now work together . . . But, it wasn't easy. (I, 68, p. 7)

Curricular Integration

The teachers included the Project Adventure concepts in their curricula, integrating them across content areas. Such integration took time to develop, as Jenny Jack explained:

I think we all started [six years ago] with it as more of a "this is going to be adventure time. This is going to be this activity or the ropes course." I didn't really see how I could carry it over into the classroom. I kept them very separate. We'll do these new games or do this activity. And I thought that was adventure education, but I don't believe in that any more. (I, 71, p. 7)

Jenny believed she had the same general goals as many of the other teachers, including the physical educator.

The physical education teacher and I use the same [concept] words. We're after the same sort of end result. Where children are feeling good about themselves, and have learned about others. So I guess I see our goals as being very much the same ultimately. To help children deal with their life and to carry over into adulthood. I think we share the same goals. (I, 71, p. 14)
The classroom teachers attempted to integrate concepts and experiences from physical education into their classes. Susan used experiences from physical education to assist her in teaching mathematics.

A lot of children felt very frustrated when we were on the high ropes and that is a frustrating experience and so when we went to double digit division I relate that. "You remember the frustration you felt on the high ropes? I know you feel the same frustration right now that you can't do it. But you can and we'll get through this together." And so that's how I use adventure education in the classroom. (I, 68, p. 1)

Kate Moab believed Project Adventure concepts, such as cooperation, spread from physical education to the whole school.

I believe that [physical education] has a strong impact because things start in physical education. For example, it's a non-competitive environment. How we work in an environment or how we get along with people that maybe we're having a difficult time with and that we all have this task to finish and accomplish together. (I, 70, p. 16)

Planning

Every month the teachers at Cornwall sit down with other teachers at their grade level and plan upcoming units together. The physical education teacher is available at that time to coordinate her plans with classroom teachers'. The principal explained how the physical education teacher was involved in team planning.

We do grade level planning through integrated studies. [The physical education teacher] is available to sit down with grade levels and coordinate her program with them. In some cases it's very heavily coordinated, in some cases it's not as coordinated. It depends on what the themes are, so she's available during grade level planning as well. (I, 72, p. 16)

Kate expressed her enthusiasm about team planning.

I think [team planning] is wonderful because you just can't do it all. I love the ideas that my team comes up with. I love working with other people. I love being able to do just one third of it. It's just an enormous task I believe to try to educate children the way that we educate children here and I think if you take it on by yourself, you're just an island. So I very much support the team approach and I love the ideas that I get from other people. I love that at Cornwall it's okay to steal ideas. It's wonderful to be able to do that and it's not like that everywhere. (I, 70, p. 11)
Jenny commented that team planning is critical to the process.  

I think [team planning] is the strength of this program. When we sit down together we all come to it with different experiences. Different backgrounds. What we can do together as a team is much more than what we can do as individuals... So I totally believe in it. I think that it's the best way to go for the staff and the children and it's the only way to go and in other situations, my other experiences before this I was in experiences where people were very isolated and I think you get very stagnant.  

(1, 71, p. 9)

View of Physical Education

The administrators and classroom teachers held a positive view of physical education, which supported and enhanced the implementation of the physical education program. They believed the physical education program had a cooperative, trusting environment and involved students. The principal's and classroom teachers' views of physical education were based on frequent observations of the physical education teacher in the gymnasium. The principal was highly supportive saying:

I think the physical education program is vital. If we lost that program then we would likely lose our whole program emphasis of Project Adventure. If you lost the particular person that's doing it currently [Ms. Duke] and we could not find someone that was an equal replacement or better, I think we would lose that emphasis. (1, 72, p. 15)

Kate Moab explained why she valued the physical education program.

I would describe our physical education here as a non-competitive kind of environment where children are active in a physical way, working towards goals where they work together and cooperate together. And also an environment where trust is built in and I don't think that's always true in every physical education class... It's not sports oriented. It's not if you're not the jock you're not going to succeed. If you are not physically adept, which a lot of people are not, you're going to have a really good time and you're going to be able to enjoy yourself. You're going to get a physical workout. Your heart rate is going to be racing because you're going to be involved and that's another thing - the involvement; it's 100%. Every child is always involved all the time and when I think of physical education classes I've had, that certainly was not the way that things ran... I think the cooperative part of it [is important], the working together, and the goals. The trust that's built in, because it's not an environment where somebody is going to bite your head off if you don't do something right or you're not the one that makes the goal, or saves the goal. I think that's really important that you can feel trust in that environment.  

(1, 70, p. 17)
Susan believed that involving every student in physical activity was one quality that made Anne an effective teacher.

Anne involves everyone. She just doesn't take the best two people and say "okay, now I'm going to show you two how to do it. And then the rest of you watch." She actually got everyone up and they all had that experience to do it and I found going through physical education it was always the athletic boys, the athletic girls that they took time for. I don't see Anne doing that. I see her taking time for everyone and I think that makes a difference. (I, 68, p. 13)

Classroom teachers saw Anne's use of Project Adventure concepts as important.

Susan Stroud commented:

[Physical education] obviously teaches certain physical skills, but also I believe here at Cornwall it is to promote our philosophy of cooperating and working together and taking risks and challenging yourself to do better. I wish that all children could experience that type of physical education. (I, 68, p. 12)

Teachers believed physical education was central to achieving the school's Project Adventure goals. Jenny said:

I think the impact is very great from this program because somebody who can't do well maybe mathematically can run or climb the rope and hit the top and so I think that it really plays hand-in-hand in the adventure curriculum, because they succeed in different places. So I guess I think it's pretty vital. (I, 71, p. 12)

The classroom teachers were not expected to stay in the gymnasium during regular physical education classes, only during high risk activities (zipping, climbing). However, the principal and classroom teachers were often in the gymnasium during physical education lessons. As Susan noted:

Staying in physical education helps me to have insights to Anne's approach on things and that's very helpful to be able to listen to Anne and maybe get an insight that I had never seen before from her approach. Also the way children react to her. Maybe a problem that I have with a child is a personality problem. They react to Anne in a different way. (I, 68, p. 14)
Teachers did not generally want to be in the gymnasium for the entire physical education lesson. Bev spoke for others when she said:

I think Anne always encourages us to come down and see what they're doing. I try and go a few minutes early before I pick them up so I can just kind of see what they're doing if I don't have a chance to go to the class ... [I] probably [should not attend] all of them. I wouldn't want [my students] to think that I had to be with them all the time and I think they take on a different attitude maybe when I'm in there watching. They might not be the way they normally are if I'm in there watching. (I, 69, p. 14)

Susan believed that it would be valuable to be in the gym for every physical education lesson, but believed she needed her time for planning.

I think it's a great concept [to be in the gym during physical education classes] because then I would have more experiences to draw from for the kids. But that's a great loss of planning time as I have for the down side. (I, 68, p. 15)

Limitations

In addition to more money and facilities that could enhance their program, teachers and administrators identified several limiting factors that were unique to their situation. Procedures for student assignment to their school were a limiting factor. The principal said:

I would like to see us become 100% alternative [lottery]. Right now 2/3 of our kids are assigned here and 1/3 of our students are here through the lottery process. I think to be a true alternative school and to be a school of choice, all students should choose to come here and I'd like for us to become 100% lottery. It makes it hard for us to run extra programs. Camping programs, field trips, and high ropes course. We have parents say "I don't like my kid doing that." It's hard to combat that, but they live across the street and they're assigned to come here. (I, 72, p. 14)

Most teachers felt that this lack of parental involvement was a limiting factor for the school. Kate said "the weak link I think in our program is parent involvement. If there's one thing I could change and one thing I would work on, it would be parent involvement" (I, 70, p. 15). On the other hand, the principal felt that there was strong parental support
relatively speaking. He contrasted the current situation to 1987, when he arrived as principal.

When I first came here in '87 I had one PTA officer. That was the president and that was it. The parent involvement was virtually non-existent in the PTA. There weren't any parents. They weren't in the building. They didn't want to be involved. Right now we have approximately 240 members of PTA that have actually paid dues or are members of PTA, plus all the other parents that are out there that don't want to become a member or pay the dues but are still actively involved. Our parent involvement in the school is very high right now. It always can be higher, but we're at a point now where we're feeling comfortable with the parent organizations and the involvement. (I, 72, p. 23)

The principal saw the students' backgrounds as an added challenge to educating them.

Because of the children we are dealing with in the large urban school and we are dealing with a number of our children coming to school at-risk - over 68% of them are what the Federal government calls disadvantaged. On free and reduced lunch. We have a mobility rate of somewhere around 35% which means 35% of the population turns over at least one time a year. Most of our parents are single parents. There's a high percentage that aren't working so we're [dealing with] a very at-risk group of kids. Just to get them to school and make them feel good about the school process I think is a major accomplishment in this type of system. Once they're here using a program that reaches them and is exciting to them and not only reaches them and is exciting, but they can also learn a tremendous amount in that program, to me is what education is all about, especially in an urban city school. (I, 72, p. 26)

Summary:

Teachers and administrators at Cornwall Alternative School seemed enthusiastic about their jobs and the school. They believed their shared vision was essential to the effectiveness of the program. In addition, they appreciated the positive staff relations, shared decision-making, and team planning which supported subject matter integration across all content areas including physical education. The administrators and classroom teachers viewed physical education as vital to the school program and believed the physical educator was especially effective at infusing the Project Adventure ideals into her program.
CHAPTER V

DISCUSSION, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This chapter includes a discussion of the findings of Cornwall and Drexel Alternative Schools. This is followed by several conclusions, a set of implications for the field, and recommendations for future research.

Teachers' Espoused and Enacted Values and Beliefs

Curriculum

Goals of the Physical Education Program

Both Margaret Ranger and Anne Duke viewed the physically educated student as one who values physical activity, takes responsibility for his/her own level of fitness, possesses the knowledge and abilities to engage in a variety of physical activities, enjoys and feels good about his/her participation in physical activities, and wants to be involved in physical activities and stay involved throughout his/her life. In addition, both believed students would view cooperation and self-improvement as more important than winning. This was similar to the traditional view of physical education (Jewett and Bain, 1985; NASPE, 1992), in that they valued regular participation in physical activity, knowledge of the benefits of physical activity, and physical activity as part of a healthy lifestyle. However, Anne and Margaret had a narrower focus that put more emphasis on the affective and cognitive domains of learning. Their programs focused less on skill improvement and more on knowledge of and attitude toward physical activity.

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Anne and Margaret believed that the goal of a quality physical education program was to produce the attitudes and abilities described in the preceding definition of a physically educated student. Both teachers' educational values and beliefs involved not only influencing students' physical attributes, but also their emotional, social, and cognitive development. This belief was in line with the Project Adventure emphasis of educating the "whole child." Anne and Margaret wanted to have a positive impact on students' long-term attitudes and feelings about themselves, other students, and life-time physical activity. They would agree with Rink's (1993) suggested affective goal for physical education that "physical educators should help students to be thinking, caring, and sharing individuals" (p. 6). They both had high expectations for students and believed in challenging each student mentally and physically through experiential learning.

Given their commitment to Project Adventure schools, it was not surprising that Anne's and Margaret's espoused values were similar. Most of their goals were the same, with small degrees of emphasis differentiating them. Both wanted students to take responsibility for their own learning, their behavior, and each other. This goal was similar to Hellison's (1985, 1990) student self-responsibility model, which "teaches self and social responsibility through a process of awareness, experience and decision making, and self-reflection" (Hellison, 1990, p. 38).

Anne and Margaret also wanted students to enjoy their experiences in physical education; Anne suggested that a good program "is one that excites the kids. The teacher's role is to excite the kids about the learning process, to instill in the kids that they want to improve themselves and do better" (I, 36, p. 4). Anne and Margaret assumed if students enjoyed an activity they would participate in it later in life. In addition, Anne said "it's a fun environment, but they do have a purpose. There are goals at each [station], we call them challenges. The principal comments often how high my standards are for the kids
and what I expect them to achieve, but it needs to be that way in that fun environment" (I, 36, p. 10).

Another goal for Margaret and Anne was for students to build social skills and have positive social interactions. Similarly, Jewett and Bain (1985) suggested that physical educators are concerned with personal and social growth and the development of intrapersonal and interpersonal skills. In addition, these teachers wanted students to think of competition as motivation to improve one's past performance rather than beating another person. Anne and Margaret believed that cooperating, communicating, and taking responsibility, behaviors they desired, were skills that must be taught. Supporting this notion, Deline (1991) suggested that students may need to learn how to communicate and both teachers emphasized this in their work with students.

Anne and Margaret also emphasized developing cognitive skills. They did this through the debriefs, through teaching knowledge and understanding about sports, health, and physical activity, and through using activities requiring reasoning skills. Evans (1990) commented that many forms of curriculum innovation or the "new physical education" emphasized the intellectual and cognitive elements of physical activity. Anne stressed cognitive tasks, but did struggle with this notion at times. During one lesson students were given a large amount of time to discuss and develop personal fitness goals, and she said "that was hard for me as a PE teacher to give up activity time we're so engrained with, and sit down with cognitive time" (I, 43, p. 24).

Anne and Margaret believed that being successful with individual goals could contribute to their highest goal, building students' self-esteem. The value of building students' self-esteem has been supported elsewhere in the literature (Canfield, 1990; Straub, 1993). Anne and Margaret believed if students developed a positive sense of self-worth in their physical education lessons, they would feel good about participating in physical education and school. They believed that this would have an impact on their
desire to participate in lifetime physical activity, their ability to deal with other people, and their lives in general. To assist with building self-esteem, success at each students' level of ability was an underlying goal of their programs.

Anne's and Margaret's goals were closely aligned with the Project Adventure model with their use of the concepts of trust, cooperation, risk, challenge, and problem solving; the brief and debrief; and the contract. In addition, they created a positive learning environment with active supervision. Priest (1990) suggested if physical educators are concerned with personal and social growth as raising self-esteem, taking appropriate risks, communicating, empathizing, and expressing appropriate feelings, they should consider using adventure education because these attributes can be acquired through this approach. The curriculum at Drexel and Cornwall was well-suited to their focus on affective skills, as Knapp (1989) suggested that outdoor education can contribute to growth in the affective domain of learning. He defined the affective domain as including "student interests, appreciations, attitudes, values, and intrapersonal adjustment skills" (Knapp, 1989, p. 41). These affective goals are not limited to adventure education. As Placek (1992) noted, "themes such as becoming independent, accepting and expressing ideas, and accepting responsibilities and acting cooperatively are certainly appropriate for middle school physical education" (p. 337).

There were slight differences between Anne's and Margaret's goals. Both teachers employed similar goals, with different degrees of emphasis. Margaret was concerned with students' developing basic motor skills, but not complex sports skills. Anne did not emphasize motor skills as much. Margaret also put more emphasis on promoting a healthy lifestyle, lifetime physical activity, and responsibility for one's own health. She said "probably the most important stuff would be the long term stuff: health, the things you need to know about your body so you can maintain a good physical and social life" (I, 29, p. 10). Margaret did not believe her class time, one hour a week, was enough to increase
students' current fitness levels, so she stressed developing the proper attitudes to do it on their own.

On the other hand, Anne placed more emphasis on self-esteem. She believed physical education was "a means to an end" (I, 36, p.1) for enhancing students' self-esteem. Anne felt that improving physical skills was not the primary goal; it was a method of increasing feelings of self-worth. "We feel through the skill and through the activity itself they're going to gain confidence and self-esteem and social skills and somewhere along the line they [say] 'I can''" (I, 37, p. 1).

Content and Enacted Curriculum

Margaret and Anne believed a Project Adventure focus was the most effective means of achieving the preceding knowledge, attitudes, and abilities. At both schools the written/formal curricular and organizational characteristics were similar. The curriculum emphasized the five concepts of cooperation, risk, trust, challenge, and problem-solving.

Anne's and Margaret's yearly plans were based on the school district's graded course of study and had several adventure education units planned for during and in addition to regular instructional periods of the day. Providing after school and weekend experiences was deemed critical to a fully effective program. This finding is similar to that of Jones, Tannehill, O'Sullivan, and Stroop (1989) who found that elementary teachers used special activities outside the in-school instructional program to augment the regular physical education program.

At Cornwall the units of instruction were short for manipulatives, fitness, and cooperative units. For example, third grade students received five lessons on floor hockey. In the fifth grade yearly plan basketball was planned for five lessons but only three basketball lessons were taught, partially due to scheduling problems (including a snow day). At Drexel a similar pattern of short units was evident with manipulatives. Fifth grade students had three of the four lessons planned for basketball. However, the climbing
unit was longer with six lessons for each grade level allocated for climbing activities which were observed.

The short units of instruction at both schools (particularly in the manipulatives unit) suggested that students received limited experience in traditional sports and few opportunities to improve their skills. Instead they received exposure to a wider variety of activities including cooperative, initiative, and adventure education activities. This is typical of the multi-activity based programs that dominate North American physical education (Metzler, 1992; Siedentop, 1992). However, Anne's and Margaret's practice was congruent with their goals because they did not emphasize perfecting sports skills and wanted to make room in the curriculum for more cooperative activities.

Observational data from the task structure observational system, field notes, and interviews from a variety of sources (principals, classroom teachers, students) supported the notion that Margaret and Anne generally enacted their espoused values and beliefs. These data supported the findings of Tsangaridou (1993), Mitchell and Marland (1989), and Marland and Osbourne (1990) who found teachers' theories of action to be generally congruent with their theories-in-use (Argyris & Schon, 1974). However, there were instances of espoused values and beliefs that were incongruent (for example, Margaret's lack of debrief). This was a similar finding to Veal (1992) in that most of the teachers' espoused values and beliefs were congruent with their instructional practice, but some areas were not. Veal (1992) found that the teachers' espoused values about participation, effort, and fitness testing were congruent with their enacted practices. However, their espoused theories concerning skill testing and formative record keeping were incongruent with their professional practice. The current data contradicted Kolb's (1992) finding that an adventure program's espoused goal was incongruent with the enacted instructional program.
Margaret's and Anne's espoused goal of building self-esteem was operationalized in the way their content was organized and presented to allow students to have success in the tasks they attempted. Most students had high levels of success with the assigned tasks. In addition, the development of self-esteem was assisted by the positive climate created in the gymnasium. Students believed that their physical education programs had helped them increase their levels of self-esteem. In describing what they had learned in physical education, students mentioned things like "I learned about not feeling bad about yourself" (I, 68, p. 6). Another student, Mark, said "Miss Duke started helping me and giving me faith in myself" (I, 50, p. 57).

Anne's and Margaret's other goals were also enacted. The development of social skills was observed through cooperative tasks, debriefs, peer tutoring, and the resolution of conflicts. Students were also observed taking responsibility for the organization of tasks and for their own behavior. In addition, they took responsibility by assisting each other to develop motor skills and strategies. Students also frequently reported they had fun in their physical education classes.

Competition is a complex issue that Anne and Margaret tried to address in their physical education classes. Their focus was on distinguishing between competition against another person that could create a win and lose situation and their notion of competition as a personal challenge. They did not want students to feel discouraged if they lost and to feel superior if they won. Both teachers organized and presented tasks for students to develop what they saw as an appropriate attitude toward competition, and students for the most part seemed to have bought into their teachers' views on competition. Students reported that they should avoid negative competitive behavior in their physical education programs. At Cornwall competition was discussed frequently by the students in post-lesson interviews, suggesting that it was a topic often covered in debriefs. Anne wanted students to challenge
themselves to compete with their previous performance rather than being concerned about beating another team. Don, a fifth grade student at Cornwall, stated

I never heard [Miss Duke] say "all right, team 1 you're going against team 2. I'll be keeping score." She never said that. She just said "team 1 you'll be playing against team 2. Try your best." And then she'd say "losers are winners and winners are losers" because if you try things then you're a winner and that's what matters. (I, 66, p. 7)

At Drexel, Margaret sometimes allowed students to compete in teams against each other because she thought that competition was a part of life and students needed to develop an appropriate attitude toward it. Drexel students mentioned that it was important to leave competition in the gymnasium and not allow it to develop into negative feelings back in the classroom.

Instruction

Instructional Tasks

The results at Cornwall and Drexel suggested that Margaret and Anne were efficient managers and organizers of their physical education environments. Their content was presented within a positive and exciting gymnasium climate where students were active and motivated to achieve tasks. They were efficient managers and there was little off-task behavior by students. Margaret and Anne had set rules, routines, and expectations and consistently reinforced them to provide a predictable learning environment for the students.

At Drexel, the instruction time in the climbing unit was low and practice time was high compared to the findings of Eldar, Siedentop, and Jones (1989) and Rauschenbach (1992). In the manipulatives unit instruction time was higher and practice time was lower. At Cornwall, instruction time in the manipulatives and fitness units was higher than the lessons observed by Eldar, Siedentop, and Jones (1989) and Rauschenbach (1992); however, instruction time in the cooperative unit was lower than these two studies. Engaged time was well within the boundaries of those reported for effective teachers in research on teaching in physical education (Eldar, Siedentop, and Jones 1989;
Rauschenbach, 1992). These results, combined with short management times, suggested that students were actively engaged for a large percentage of lesson time.

At both schools during the manipulatives and fitness units practice time was comprised of a majority of informing and applying tasks, some extending tasks, and infrequent refining tasks. Researchers (French et al., 1991; Rink et al., 1992) have suggested that refining and extending tasks facilitate motor skill acquisition. It would appear that students would learn more motor skills if Anne and Margaret used more extending and refining tasks. The infrequency of extending and refining tasks suggested that these programs did not focus on skill development, which Anne and Margaret considered to be a secondary goal. Anne's and Margaret's instruction was consistent with their espoused goal of introducing basic skills and then quickly moving to applying skills in a modified game situation.

Low opportunities to respond (OTR's) in the manipulatives units was due to the high percentage of modified games. Rink (1993) and Siedentop (1991) have suggested that in order to enhance motor skill development, the number of OTR's provided to students must be maximized. This finding implies a weakness in Anne's and Margaret's instruction in terms of skill development. In the cooperative/climbing lessons task congruence was 100% because both teachers accepted a wide variety of student responses and provided choice in activity. The weakness in their instruction was the lack of focus on skill development, which was evidenced by the short length of instructional units, low opportunities to respond, and few refining and extending tasks. The teachers believed that skill development was a secondary goal of their programs.

In all units, students were generally on stated task, infrequently modified the task up or down, and were infrequently off-task. In addition, students' responses to tasks in all units were generally appropriate and successful. Anne and Margaret held students accountable for trying hard and working together by monitoring, interacting, praising, and
providing different forms of feedback, post-task feedback, and public recognition for students' achievements (Lund, 1990).

As part of practice time, both teachers were observed utilizing cognitive tasks. In the beginning of the manipulatives unit Margaret used an investigatory activity in which students were asked to determine which objects would bounce, roll, or fly. She used cognitive tasks related to problem solving in 7 of 10 manipulative lessons. The high percentage of cognitive tasks in the first three lessons corresponded to low percentages of informing tasks. In these lessons Margaret was encouraging the students to think instead of giving them information. In his model of critical thinking, McBride (1992) suggested:

Only during inquiry can critical thinking skills be activated through such cognitive functions as comparing, contrasting, drawing inferences, and testing hypotheses . . . The teacher must relinquish some of the responsibility for analyzing, evaluating, diagnosing, and providing direct feedback to the students . . . The learner needs to assume responsibility for thinking for himself or herself. In effect the teacher weans the students from the traditional stimulus-response model, where learning chiefly occurs by drill and repetition, to a situation where the students actively pursue solutions and engage in critical thinking. (p. 117)

Anne also used cognitive tasks. One form of cognitive task was the debrief she used during and at the end of every lesson. As an example of the importance Anne placed on cognitive tasks, during a fitness lesson she used more than half of the lesson time for students to do math calculations and develop their personal fitness goals. During manipulatives games Anne emphasized students gathering in huddles to plan, strategize, communicate, and problem solve.

**Teaching Style**

Margaret and Anne believed the most effective way to achieve their goals was to use a student-centered teaching style. Because they thought it was important to build self-esteem they believed it was valuable to have students succeed at their level of ability whatever it may be. Both teachers encouraged students to set personal goals with the teacher in the role of facilitator, not a director of activity. As Margaret commented, both
teachers believed that "we are more personal with our kids, we are willing to listen to the kids, we are willing to involve kids in their own learning" (I, 27, p. 8).

Anne admitted that when she first started teaching at Cornwall, teaching in the program was a struggle because her university courses had not trained her for this kind of teaching. However, the field notes reported that Anne was now comfortable with a less directive teaching. She often acted as a facilitator and utilized students' ideas.

Margaret, a veteran teacher, attempted to provide tasks that were more student-centered than she had used in the past. A dilemma for her was whether to give students more freedom and enhance their creativity and self-direction or to gain more control and keep them on task. The field notes suggested that generally Margaret ran a student centered classroom, but at times it was problematic for her. For example, she generally made decisions concerning grouping in the climbing lessons before consulting students. During the climbing activities, Margaret acted as a facilitator, but was more directive during the manipulatives unit. For instance, unlike Anne she did not emphasize problem solving tasks when teaching traditional basketball and volleyball skills.

Margaret and Anne believed that cooperative tasks were a beneficial method of instruction. They expected students to physically and emotionally support other students by spotting, cheering for, or encouraging each other. They stated that peer tutoring and having students work in groups helped students develop cognitive, social, and emotional, skills. Margaret said "the team work and cooperative ideas, this helps develop their cognitive and social skills. The kids help kids. The kids make it work. There is a wide range of abilities but the cooperative activities help" (I, 29, p. 12). In addition, Anne and Margaret encouraged students to help each other to develop physical skills. Dunn and Wilson (1991) have promoted cooperative learning, suggesting the physical educator's role is to develop the cognitive, social, and psychomotor capabilities of students in their classes.
Anne and Margaret appeared to enact their espoused goal of using cooperative activities. Their goals were to develop cooperative strategies and to use cooperative tasks to achieve their goals. Students were observed working in pairs or small groups more often than individually or in two large teams. Many tasks, such as climbing, that would be impossible to accomplish without group cooperation, were assigned. Students were observed working in groups to problem solve motor tasks such as initiatives activities. Fifth grade students helped younger students put on safety equipment during climbing lessons.

Briefs and debriefs

Briefing and debriefing were utilized by both teachers, but in different ways. Margaret wrote a weekly brief and asked the classroom teacher to read it to students prior to physical education class. These briefs were related to a skill, safety, and/or behavioral emphasis for that week and acted as an anticipatory set before the physical education lessons. Margaret conducted only six debriefs in the 22 lessons observed even though she often discussed its importance. During the second member check Margaret's low incidence of debriefs was addressed. She felt that she should spend more time debriefing, but believed that she was limited by time and preferred to continue the physical activity instead of stopping early at the end of the lesson to debrief.

Anne carried out short briefs at the beginning of each lesson while students were warming up; longer briefs occurred at the beginning of some fifth grade lessons. Anne carried out debriefs in each of the lessons observed, which was congruent with her espoused belief in the importance of the debrief. Debriefs allowed for discussion of various elements of the lesson and was an opportunity for open reflection on positive elements of the lesson or problems, their causes, and solutions. Students were encouraged to communicate and openly share their thoughts and feelings. This was similar to Dewey's (1916) idea of enhancing experience as learning by helping people reflect on the way
actions are connected to the resulting consequences. Arnold (1991) wrote that "unless teaching is carried out in an enlightened manner so that pupils develop an understanding of what it is that they are doing and why they are doing it, the result could be one of mindless physical conditioning" (p. 71).

Planning

There were slight differences in planning at Cornwall and Drexel. Margaret developed more detailed lesson plans than Anne. During the second member check, Anne discussed her brief lesson plans. She suggested if she planned too much, as she believed she had done in her first years of teaching, her teaching would be less student-centered and therefore less experiential for the students. Anne did plan the structure and sequence of activities in each lesson, but would welcome student input, such as modifying a game as the lesson progressed. She said "the way [students] want to run it is what should be important. Shifting responsibility. You actually plan for that. You have to plan for that to happen" (I, 37, p. 31).

Integration

Margaret and Anne believed the Project Adventure philosophy ensured physical education as an important part of the total education of the student, which made it an integral part of the school enterprise. Margaret and Anne also believed that the integration between other subject matters and physical education increased its connection to and status within the rest of the school. To accomplish integration this Anne and Margaret attended planning meetings with the grade level planning teams and were able to integrate different subject matters into their physical education programs. For example, Margaret was observed integrating mathematics into her manipulatives unit, while Anne integrated mathematics into her fitness unit. Margaret said "I think some people think [physical education] is not as important. I try to make it as important by trying to incorporate stuff, math and social studies and stuff in the class so that the teachers can see that it can work
here too" (I, 30, p. 31). Jo, a fifth grade student, commented "sometimes just out of the blue [Ms. Ranger] figures out how to work math . . . She works everything into [physical education], she works in math and spelling" (I, 28, p.8). Classroom teachers also integrated physical education into different content areas.

**Equity**

Equity emerged as an underlying theme at both schools. Anne and Margaret used pedagogical strategies to promote gender, racial, and skill-level equity in their gymnasiums. Both teachers had equitable social arrangements in their classes. Anne said, "to me it's an important part - they need to feel wanted, successful, no matter what level they're successful in . . . It is important to keep them on even ground" (I, 36, p. 7). Vertinsky (1992) stated that many physical education teachers do not possess the skills or knowledge to act equitably toward both genders. In lessons observed boys and girls were provided with equal opportunities and girls were often observed taking leadership roles. The classes also seemed to have racial equality, an issue especially relevant in magnet schools where one of the purposes is successful desegregation (Blank, 1989). Students of different races appeared to mix and cooperate in activities observed.

There appeared to be equity among students of different skill levels in the Cornwall and Drexel programs. These were not environments where high-skilled students dominated and low-skilled students were marginalized. Elitism in traditional basketball and volleyball did not occur (CFN, p. 41; DFN, p. 36). At Drexel and Cornwall class leaders were not those with the highest physical ability. Students of all skill levels were encouraged to set personal goals at their own level of ability and to challenge themselves. At Drexel, Margaret believed that every student needed to experience success, students of higher skill levels should help others, students should support each other, and in competitive situations, students on winning teams should not make losing teams feel bad. At Cornwall, Anne believed all students must experience success, competitive situations
could be discouraging for low-skilled students, fun rather than skill mastery should be emphasized, building the self-esteem of all students was essential, and students of higher skill levels should not dominate. During a debrief at Cornwall, one student, Maria, commented that two low skilled students had learned basic basketball skills and had enjoyed the experience despite their initial negative attitudes; she also noticed high skilled students had enjoyed the lesson. She said "Jay and Jo can now play basketball" (CFN p. 42). Field notes reported that low skilled students were not ignored at Drexel and Cornwall. An example from Cornwall is Mark, a low skilled third grade student. At the beginning of the jump rope lessons he was not able to jump more than one time. After guidance from the teacher and other students, in the third lesson he volunteered to demonstrate in front of the class that he had learned to jump rope.

The equitable situations at Drexel and Cornwall differ from the findings of recent research. In a study of eleven high school physical education teachers, Siedentop and O'Sullivan (1992) found that low-skilled students were marginalized. Portman (1992) found that low-skilled sixth grade students were rarely successful in any part of their physical education classes, received little assistance in developing skills, were left alone during skill practice, and received critical comments in all competitive situations. She said "unless something major happens in the way we understand and teach physical education, we, as a profession, are creating students who are unlikely to engage in team or individual activities again, and who make unlikely candidates for sustaining healthy lifestyles" (Portman, 1992, p. 8). Anne and Margaret wanted to avoid these feelings of discouragement by providing early successful experiences to students of all ability levels.

Student Perceptions

Students at Cornwall and Drexel Schools appeared to be able to reflect on their experiences in physical education class and seemed comfortable discussing their thoughts
and opinions. They set personal goals in physical education and were able to articulate what they were. They seemed enthusiastic about the classes and appeared to enjoy their time in physical education.

The students' goals and perceptions of the program were very similar to their teachers' goals. Students' goals, which were the same for both schools, were to cooperate with others, challenge themselves, take risks, have fun, and learn motor skills. These goals were similar to the Full-Value Contract that was posted throughout the school and was designed to help students and teachers live up to Project Adventure ideals. It stated "students will make a commitment to try, accept challenges and take risks, explore, discover, and learn, support others, accept responsibility, and have fun." Students believed certain behaviors could enable their success with these goals. Students at both schools believed trusting each other, not becoming competitive, and problem solving were behaviors that could contribute to their success.

Students at both schools frequently discussed cooperation and believed it made the program more fun and allowed them to accomplish more difficult tasks than they could on their own. Brenda stated, "you can't do it on your own. It's not like every person for themselves, because you won't really get any goals" (I, 50, p. 59). Students also mentioned that related behaviors like trusting others and communicating could help them achieve goals in physical education.

Students at Cornwall believed they gained knowledge about health, physical fitness, sports, and game strategies. They viewed self-esteem as feeling good about what they did and believed the school and their physical education program helped increase their confidence and helped them learn to feel good about themselves.

Cornwall students focused on the need to avoid competitive behavior and to view competition as a personal challenge to improve on past performances. However, some highly skilled students wanted more competition. Most students repeatedly stated that they
did not like competitive behavior, but could give examples of other students becoming competitive during games. After one activity which was supposed to be a cooperative game, one student, Bill, said:

Some people really like a win and lose [situation.] Afterwards, they were sitting there, "Oh man we won. You lost, ha, ha." . . . I think that some people were so much obsessed with winning that they tried to hurt people. They tried to win more than be fair.  (I, 61, p.119)

It appeared that what Anne had taught Cornwall students had decreased their competitive behavior, but not completely eliminated it.

At Drexel students stated that following directions could contribute to their success in physical education. In addition, they saw the methods of student grouping as problematic. Students were sometimes unhappy about working in assigned groups, but others recognized the negative consequences of students only working with their friends. Following directions and student grouping, two differences discussed by the students at Drexel, suggest that at times Margaret was directive in her teaching. This was incongruent with her espoused goal of using a student centered approach. Drexel students did not discuss competition as much as did Cornwall students. When they did, they focused more on the need to keep competition in the gymnasium and to be a good sport whether they won or lost rather than on avoiding competition which was the focus at Cornwall.

In post-lesson interviews students at both schools discussed developing motor skills more than either teacher did. Drexel students did not discuss motor skills more than Cornwall students despite Margaret's emphasizing it more than Anne. At times students at both schools mentioned that acquiring new motor skills or improving fitness had been what they enjoyed most about a lesson. (At other times they mentioned cooperating or taking a risk had been what they enjoyed most.) Students believed their physical education teachers wanted them to learn how to execute certain skills. Students' satisfaction with physical education during traditional sports lessons (e.g. basketball) depended to some degree on
their physical abilities. A few high-skilled students mentioned that they wanted to learn more advanced skills, while low-skilled students seemed content with learning basic skills. Even though students knew that competition was not promoted in their class, sometimes they did care about winning. Mary said "My goal today was to try to win" (I, 19, p.74). At times highly skilled students were impatient with the cooperative nature of the tasks and low level of competition.

Support for the Program

The physical education curricular innovations at Drexel and Cornwall Schools were unique examples of how school cultures can be developed and maintained essentially by the principals and teachers. The principals and teachers created their own educational environment based on the Project Adventure philosophy. The teachers and administrators promoted a holistic approach to learning, which meant they tried to purposefully influence the physical, intellectual, emotional, and social development of their students similar to Raywid's (1984) characterization of magnet schools. She said magnet school programs are consciously designed for social growth and such personal development as decision-making ability, moral maturity, and self-knowledge.

The schools' internal support in the form of a shared vision, positive interactions, commitment, and hard work of the principals and teachers was the critical component in implementing and maintaining their programs. This study found that five factors supported the implementation of the physical education programs at Cornwall and Drexel: external support, a shared vision, positive view of physical education, staff relations, and curricular integration.

External Factors

Support came from the school district, Project Adventure, parents, and the community. The school district allowed these alternative schools to do several things
differently. First, personnel selection was decided by the principal and teachers instead of the central district office. All teachers elected to work at the alternative schools and "bought into" the concepts of Project Adventure. Both principals felt that their power to hire a group of teachers that were committed to this philosophy had been essential. Principal Devon said "I think first and foremost is hiring a set of teachers that are committed or willing to be committed to this philosophy" (I, 31, p. 4). Second, the school district was flexible and supportive in allowing some modifications to the graded course of study by Drexel and Cornwall. Blank (1984) reported one characteristic of high quality magnet schools was "some degree of 'special treatment' (or flexibility) with regard to district rules, conventions, or procedures" (p. 271). However, both teachers were required by the school district to teach traditional sports skills like softball, basketball, and volleyball. Third, financial support was available for professional development and students transportation to an adventure education center. These schools were similar to other magnet schools in that they were expensive to establish, but after the initial outlay of money the costs returned to normal (Chabator, 1989; Blank, 1984). At Drexel and Cornwall the principals and teachers maintained an effective programs within budget by maximizing their resources. Fourth, both schools made huge efforts to inlist the aid of parents and the community to increase the PTA and provide monetary support for school events and adventure experiences like camping.

Internal Factors

Shared philosophy or vision

The teachers and administrators at Drexel and Cornwall Schools believed they had a shared philosophy or vision for the education of their students. Locke (1992) and Fullan and Miles (1992) suggested that a shared vision is essential to the success of reform. Blank (1984) also reported that a characteristic of high quality magnet schools was that they had "a curriculum, teaching methods, and staff capabilities that are highly coherent,
resulting in a strong program identity" (p.271). In addition, Locke (1992) commented that teachers need to remain committed to innovation despite the problems that may occur. Both principals were pivotal instructional leaders who nurtured the staff's continued dedication.

The principals, classroom teachers, and physical education teachers focused on the process of teaching and experiential learning. The staff utilized Project Adventure strategies, where the experienced curriculum included the concepts of risk, cooperation, trust, challenge, and problem solving. Student outcomes were valued, but were not the driving force behind the curriculum. Anne and Margaret realized that their physical education programs utilized some unusual activities, such as climbing and initiatives but most important to them was how rather than what content was taught. Their programs were cooperative in nature, used student-centered learning, and utilized more cognitive and problem-solving activities than traditional physical education programs. Students were encouraged to set personal goals, take responsibility for their learning and their behavior, support others, try hard even if they were not successful, and discuss their experiences in debriefs.

**Integration**

The integration evident at Cornwall and Drexel was similar to that proposed by Placek (1992) who recommended a high degree of integration in schools if physical education is to be taken seriously. Classroom teachers at both schools attempted to integrate elements of physical education into their academic content. The classroom teachers saw the physical education teachers as leaders in promoting Project Adventure concepts including cooperation and problem solving and attempted to bring behaviors initiated in physical education to the classroom. Drexel third grade teacher Nancy Brewer said:

The integration of phys ed in the classroom has become very important. My understanding of the integration between academics and physical education is not only to give students who maybe don't excel as well in the classroom
a chance to have their spotlight in the phys ed class, but also to take what
they've learned and apply some of those things back into the classroom.
For example, problem solving. If they're really good at problem solving in
phys ed, what could they bring back to the classroom that might help them a
little bit more? (I, 32, p. 1)

Monthly planning meetings facilitated curricular integration. Every two months the
school curriculum was focused on a different theme and required the physical education
teachers to have discussed up coming lessons with both primary and intermediate planning
groups. Margaret and Anne were full-time teachers at their schools in contrast to many
physical education teachers in their district who taught at two or three schools and they
were fully involved in the life of the school and the curricular planning process.

**Centrality of physical education**

Recent literature has reported the marginalization of physical education in schools
(Locke, 1992; Rink, 1992; Siedentop & O'Sullivan, 1992; Schempp, Sparkes, & Templin,
1993), but there was no evidence to suggest marginalization of physical education in either
of the schools in this study. Principal Wood and Principal Devon believed physical
education was a vital part of their school programs. Not only did Principal Devon see
physical education as "equal to academics" (I, 31, p. 13), but she believed it was central to
the survival of a school with a Project Adventure focus. The principal at Cornwall believed
that if they: "lost that program [physical education] then we would likely lose our whole
program emphasis of Project Adventure" (I, 72, p. 15). Such a position of centrality for
physical education in American schools is highly unusual.

To improve the image of physical education, Locke (1986) challenged physical
educators to take "full membership" in their schools and communities through participating
in meetings, contributing to committees, and having "steady visibility as school citizens"
(p. 62). Anne and Margaret took full membership in their school communities, were
recognized as outstanding teachers in their own right, and as classroom teacher Cecilia Law noted, had elevated the place of physical education in the school.

I would say if anything it probably would be more elevated [status] because the amount of things, just sheer amount, the volume that she does as well as the excellence is really admired. She has a really elevated position I think and is so willing to go the extra mile, which she does a lot. (I, 34, p. 18)

At Drexel an example of the value placed on physical education was the presence of the classroom teachers at most physical education lessons. This unusual requirement allowed for a strong connection between the classroom and the gymnasium content.

At Cornwall classroom teachers were required to attend physical education lessons only when their classes were participating in high-risk activities. However, they often took time to observe classes, participate in debrief sessions, and felt connected to the physical education program through their frequent presence in the gymnasium. Anne preferred this arrangement of teachers voluntarily participating in lessons. Most classroom teachers said they did not want to be required to attend all physical education classes because they would lose planning time and they wanted their students to be independent of them at times.

Staff Relations

The teachers at Cornwall and Drexel Elementary Schools believed their jobs were made easier by positive staff relations and a professional relationship with their principal. Both principals were strong instructional leaders who were respected by their staff, a central characteristic in the effective schools literature and a key factor in substantive school reform (Blank, 1984; Fullan & Miles, 1992; Locke, 1992).

The culture and structure of both schools empowered teachers to make all substantive decisions about running the schools. The teachers shared in the decision-making process, enhancing their ownership of the program. Principal Devon was confident in her staff. "If we brainstorm long enough and hard enough we can overcome
just about anything. We've really become self-sufficient" (I, 31, p. 10). Principal Wood explained why the school used shared decision-making.

It's much more work to have the teachers assist in that shared decision making process than it is for me to sit down and say "this is the way it is." But that's not the Project Adventure philosophy. The Project Adventure philosophy is cooperative learning with shared decision making and if we don't model that, then we're being hypocritical teaching that to the kids when we don't model it for them. The teachers bear as much responsibility and make as many decisions here as anybody else. (I, 72, p. 11)

This collaboration supported Fullan and Miles (1992) who suggested that local decision-making by everyday teachers and principals was the only way that change occurs. Shared decision making is a key premise in what has been promoted as site-based management which has been suggested as an important means of restructuring schools (Taylor & Levine, 1991).

The structure and organization at both schools reflected that of the classrooms. That is, the schools practiced what they preached; Principal Wood said anything else would be hypocritical. Students were given responsibility in the classrooms and teachers were given responsibility in school decisions. Students and teachers were always encouraged to cooperate. However, Principal Wood suggested that teachers did compete with each other for the finite set of school resources. On both levels people were expected to try to resolve conflicts among themselves before going to a higher authority. Throughout the schools it was the same power arrangement; decisions did not move from the top down, teachers and students were empowered and they were provided with several opportunities to have control over their lives. These schools demonstrate what Bain (1988) proposed as the goal of education "to encourage critical reflection and self awareness, thus empowering teachers and students to create a better, more just and compassionate society" (p. 103).
Limitations

There appeared to be one external (parental involvement) and one internal (time) limiting factor. The limitation most frequently mentioned by teachers and administrators at both Cornwall and Drexel was that there was not enough time to accomplish the goals of their program. A second limitation was the lack of parental involvement on school efforts. Since only a portion of the students were at the schools by choice, some parents were not fully supportive of the schools' focus and would not allow their children to go on camping or adventure experiences. The teachers and principals also believed it was challenging to work with a population of students who generally came from disadvantaged urban families. PTA involvement had significantly improved through direct efforts by the principals and teachers.

Conclusions

Anne and Margaret believed in educating the whole child - physically, emotionally, socially, and cognitively. They focused on the affective and cognitive domains of learning rather than on skill development. Both teachers were observed utilizing cognitive tasks, which required students to investigate, problem solve, plan, strategize, and discuss physical education content. Their common goals were building self-esteem, creating fun in learning, having students take responsibility, building social skills, developing cognitive skills, and developing a healthy attitude toward competition. Margaret also emphasized promoting a healthy lifestyle and developing basic motor skills while Anne placed more emphasis on self-esteem. Observational data from the task structure observational system, field notes, and interviews from a variety of sources (principals, classroom teachers, students) supported the notion that Margaret and Anne generally enacted their espoused values and beliefs.
Both teachers were efficient managers and organizers of their environments. The results suggested that students were actively engaged for a large percentage of lesson time. However, during the short manipulatives and fitness units students were exposed to a majority of informing and applying tasks, some extending tasks, and infrequent refining tasks, and had low opportunities to respond. Students would learn more motor skills if Anne and Margaret used more extending and refining tasks and provided students with more opportunities to respond. However, Anne and Margaret considered skill development to be a secondary goal.

Students at Cornwall and Drexel were able to reflect on their experiences in physical education and discuss their goals. The students' goals and perceptions of both programs were very similar to the teachers' goals and to each other's goals. Students for the most part had subscribed to the values of their physical education teachers. These goals were to cooperate, challenge themselves, take risks, have fun, and learn motor skills. They believed trusting each other, not becoming competitive, and problem solving were behaviors which could contribute to their success in physical education. At Cornwall students also emphasized communicating effectively, and believed that this program increased their knowledge and self-esteem, which were Anne's goals. Cornwall students discussed competition more, focusing on avoiding competitive behavior. At Drexel students stated that following directions was necessary for success in physical education and they believed student grouping was problematic. Students at both schools discussed developing motor skills more than Anne and Margaret did.

The implementation of the physical education curricular innovation at Cornwall and Drexel was supported in several ways. The programs received external support from the school district, Project Adventure, parents, and the community. Internally teachers and administrators had a shared vision with a commitment to the Project Adventure philosophy. Both principals were strong instructional leaders. The staff also had positive relationships,
evident through their cooperation, team planning, and shared decision-making. These shared goals encouraged integration across the curriculum. Teachers and administrators had a positive view of their physical education programs, respected the physical education teachers, and viewed physical education as central to the school focus. At Drexel the classroom teachers were required to attend physical education classes while at Cornwall they attended lessons that involved high risk activities. There appeared to be many effective aspects of the programs at Cornwall and Drexel. Both Anne and Margaret took full membership in their school communities through participating in meetings, contributing to committees, and being visible as hard working teachers at their schools.

Implications of the Research

This study renders an initial description and interpretation of two alternative physical education programs. It is hoped that this study of Project Adventure schools will provide some innovative strategies for teaching physical education. Given the growing marginalization of physical education, reform and restructuring seem inevitable if the area is to survive and grow. As physical educators we must seek out innovative programs to determine their strengths and weaknesses. Five implications for fostering and developing innovation in physical education are provided.

1. The teachers and principals believed integration between academic and physical education teachers helped reduce the marginalization of physical education. At the elementary and middle school level classroom teachers can be encouraged by physical educators to brief their classes before students go to physical education, join in the debrief at the end of the physical education lesson, and/or conduct their own debrief when students return to the classroom. Physical educators should consider including classroom teachers and their content into their programs. All teachers, both classroom and physical education,
can brief and debrief regularly to guide student understanding of the content and connection to issues within or outside of physical education.

2. At Drexel the presence of classroom teachers in physical education was critical for strong connections with other elementary content areas. Their presence during physical education helped classroom teachers learn and appreciate what happened in the lessons. Their knowledge of the programs contributed to classroom teachers' and administrators' high regard for the central role physical education can play in the total education of the child. This occurred even at Cornwall where the classroom teachers attended parts of lessons voluntarily and were required to be present only during high risk adventure activities.

3. The principals at Cornwall and Drexel were key figures. It appears that strong instructional leadership is a key factor for innovation to be established and maintained (Blank, 1989; Fullan & Miles, 1992; Locke, 1992). In regular school programs (not only alternative ones) principals must be educated about the benefits of physical education. The responsibility for this education lies with physical education teachers who should promote their subject area (Locke, 1986) and with guidance from universities.

4. The university needs to play a proactive and collaborative role in the restructuring of schools. To initiate and sustain quality physical education programs staff development is imperative. It is interesting to note that a non-profit agency and not a college of education was the place where the staff at Cornwall and Drexel received their training to implement and sustain their program. Recent efforts at collaboration by Professional Development Schools may be a way to bridge the gap between what teachers need and what universities offer as inservice.

5. Project Adventure is not recommended for every teacher. Anne and Margaret took time, different experiences, commitment, and systematic efforts to develop their Project Adventure programs. Work with this strategy requires a sincere commitment to the ideals
of Project Adventure. If a teacher were not organized and a good manager, the gymnasium could be chaotic and unsafe. However, certain strategies could be useful for physical education teachers. For example, the methods of brief and debrief, setting personal goals, and the Project Adventure concepts of risk, cooperation, trust, challenge, and problem solving and the emphasis on the cognitive and affective domains of learning should be developed. In addition, teachers may want to rethink the attitudes toward competition they are promoting. Anne's notion of competition as a personal challenge or Margaret's different emphasis on teaching students to act appropriately during competitive situations could be incorporated by more physical education programs to reduce negative competition, inequality, and/or negative attitudes of students.

**Recommendations for Future Research**

1. The value of the task structure observational system to analyze non-traditional physical education lessons (e.g. climbing or cooperative units) warrants further inquiry. The task structure observational system was useful for providing time data related to management and organization, instruction, and practice time in this type of lesson. The difficulty appeared with the type of task categories (e.g. refining and extending) which are descriptors of traditional sport skills, but did not accurately describe climbing or cooperative activities. The notion of whether a task was appropriate or inappropriate is based on the probability of a successful outcome. This definition does not include tasks where there is no specified correct form (e.g. for climbing a wall there were a number of acceptable solutions) or necessary outcome (e.g. receiving recognition whether a student caught the trapeze or merely attempted the task). Further inquiry should look to develop new categories and/or a new system that captures tasks when the focus of the lessons are affective or cognitive and not psychomotor goals.
2. Smith (1991) has highlighted the need for student voices in research on teaching in physical education and this new area of inquiry is expanding (Carlson, In Press; Graham; In Press; Griffith & Martinek, 1994; Portman, 1992). Further inclusion of students' voices is advocated to provide multiple perspectives on what occurs in the classroom/gymnasium and a clearer understanding of the students experienced curriculum.  

3. Recent literature is replete with calls for restructuring of physical education (Griffith & Martinek, 1994; Kirk & Tinning, 1990; Locke, 1992; Portman, 1992; Schempp, Templin, & Sparkes, 1993; Siedentop & O'Sullivan, 1992). It may well be, as Siedentop (1987) has suggested, that physical education is an "endangered species." This study has provided valuable information about what has helped sustain substantive curricular innovation in physical education. What is required is not one model of curricular innovation but systematic inquiry of several quality programs so as to better understand what might be needed to initiate and sustain quality physical education programs in today's schools.
APPENDIX A
To: Parents of students at Drexel Alternative
Date: January 4, 1992

Dear parents,
As part of the requirements of a doctoral dissertation, we are exploring and describing the physical education program at Drexel Alternative. Enclosed is a description of our intentions for this investigation recently approved by the assistant superintendent of the Columbus Public Schools.

We ask for permission to interview your child in physical education classes believing that it is not an unusual intrusion in your child's education. Participation is voluntary and at any stage your child may withdraw from participation in this study.

Thank you for your consideration to this matter. Your efforts to expedite this intended research is greatly appreciated.

Sincerely,

Dr. Mary O'Sullivan
Associate Professor

Ben Dyson
Doctoral Candidate

I acknowledge that I fully understand and agree with the content of this letter. I sign it freely and voluntarily.

Date: ________________  Signed: ________________
Parent or Legal Guardian

________________________
Child's name
The elements of the Project Adventure curriculum are described as:

1. A sense of adventure, unpredictability, drama, and suspense.

2. A consistently high, but accomplishable, level of expectation. Students need to be convinced that teachers care that the goal is reached.

3. A successful orientation in which growth is supported and encouraged, and in which the positive is emphasized. Encouragement is one crucial ingredient in resolving the conflict between high expectations and the need for a successful experience.

4. An atmosphere of mutual support in which cooperation, encouragement, and interpersonal concerns are consistently present.

5. A sense of enjoyment, fun, and the opportunity to laugh at a situation, each other, and oneself.

6. An approach to learning which makes use of problem solving, which allows for a variety of personal contributions and which presents problems that can't ordinarily be solved individually. The rewards are set up for group effort rather than individual success or competition.

7. The merging of intellectual, social, physical, and emotional learning development.

8. The combination of moments of active involvement with moments of personal and group reflection and evaluation. An awareness that teachable and learnable moments are unpredictable but necessary ingredients in the curriculum.

9. A definite organization and structure which define the limits of the experience and stresses expectations, but within which the participants have freedom to make decisions, choices, and even mistakes.

10. An economic and structural reasonableness which allows the curriculum to effectively compete for dollars and resources within an educational economy that is limited in its resources. Neither too long, nor too exotic, nor too expensive. (Project Adventure, p. 6, 1991)
APPENDIX C
The School District Guideline

The school district guideline for appropriate allocation of content to weeks of the school year.

<table>
<thead>
<tr>
<th>Grades</th>
<th>K-1</th>
<th>2-3</th>
<th>4-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Movement</td>
<td>7</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Cooperative *</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Manipulatives</td>
<td>12</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Stunts and Tumbling</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Rhythms and Dance</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Physical **</td>
<td>4</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Fitness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playground ***</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Basketball</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Soccer</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Softball</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Track and Field</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Volleyball</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

* Cooperative activities should be integrated throughout the school year

** These units do not have to be taught in succession. Divide the lessons up to use throughout the year

*** One week in fall, one week in spring

**** Every lesson will begin with a warm-up activity and brief and end with a debrief. Ideas to be used could be a review of previous lesson while stretching out or incorporating basic movement skills during warm-ups.

(School district's graded course of study 1990-91, p. 1)
APPENDIX D
Examples of the School District Graded Course of Study Objectives for grade levels 3 and 5 for both schools.

Grade 3

In basic movement there are 2 objectives
1.01 Jumps and does a three-quarter turn in the air, landing on two feet
1.02 Performs movements to the right and the left with agility

Cooperative activities have 9 objectives
2.01 Volunteers positive statements to others
2.06 Accepts help and support from others during risk taking activities

Manipulative skills have 17 objectives
3.01 Creates a jump rope routine using previously learned skills
3.03 Passes a basketball using a chest pass

Physical Fitness has 3 objectives
4.01 Describes how to determine heart rate during exercise and at rest (i.e. number of beats per minute)

Rhythms and Dance has 2 objectives
5.01 Follows another individual's movement explorations

Stunts and Tumbling has 5 objectives
6.01 Does four tumbling and inverted balances, standard backward roll, beginning cartwheel, and headstand

Grade 5

Basketball has 11 objectives
1.01 Passes a basketball using a chest pass to a teammate in a lead-up game to basketball
1.10 Defines double dribble

Cooperative activities has 5 objectives
1.02 Relates cooperative games experiences to other life situations (e.g., "She or he could use problem-solving procedures on the play-ground, in the classroom, or at home)."

Physical fitness has 6 objectives
1.01 Explains how the principals of F.I.T.T. apply to physical activity (e.g. Frequency = I'll ride my bike three times a week, Intensity = I'll achieve a target heart rate, Time = I'll ride my bike for 20 minutes, and Type = I'll receive aerobic benefits)

Rhythms and Dance has 1 objective
4.01 Participates in three social dances from different geocultural groupings (geocultural groupings include: African-American, American Indian, Appalachian, Asian, European, and Hispanic)

Soccer has 6 objectives
5.01 Passes a soccer ball while running parallel with a partner
Softball has 4 objectives
6.01 Using an overarm throw in a lead-up game of softball

Stunts and tumbling has 3 objectives
7.01 Does 2 tumbling inverted balances

Track and field has 3 objectives
8.01 Starts a sprint using a sprint start

Volleyball has 5 objectives
9.01 Sets the volleyball or beachball with the fingertip set
APPENDIX E
Physical Education Yearly Plan at Drexel for Grades Three, Four, and Five.

Aug. - Sept.  Playground Games
            Soccer

Oct.  Orienteering
      Initiatives
      Fitness

Nov.  Floor Hockey

Dec.  Rhythms & Dance

Jan.  Cooperative activities
      Climbing

Feb.  Wall - zip

March Manifulatives- basketball
      - volleyball

April  

May  Fitness testing
     Manipulative- rope jump
     - softball

Adventure education center

Fall  Initiatives

Spring  Ropes for grade 5- two experiences
APPENDIX F
Cargo net climb - climb a large cargo net and jump off from second to the top rung of outside of net onto a crash mat

Stilts - balance and walk on stilts

Fidget ladder climb - balance climb on shaking horizontal rope ladder

"Tarzan" rope swing - kick suspended balloon as an added challenge

Zip line - in a harness attached to a wire flying from one end of the gymnasium and back.

Rope ladder climb - climb to ceiling of gymnasium

Climbing ropes with prussik - one prussik loop supports upper body and two loops for foot stirrups. Alternate shifting weight and moving knots up or down the rope.

Traverse wall - climbing along the wall with a spotter

Rings - Hanging from arms attempt to swing from ring to ring.

Beanstalk - climbing up a wall to attempt to walk upright along a suspended balance beam.

Mountain wall - climbing the wall of the gymnasium to a platform suspended 20 feet from the floor. Goal is to reach the platform and sign your name.

Rappelling - body weigh is supported by a harness. One hand is used to control the rate of descent and the legs walk down the wall.

Trapeze grab - in a harness climb up the wall to a platform where students jump and attempt to grab a suspended trapeze.

Ultimate challenge - in a harness climb around the entire perimeter of the gymnasium.
Physical Education Yearly Plan at Cornwall for Grades Three, Four, and Five.

Sept.
- Project Adventure
  - the Contract
- Playground Games
  - four square, hop scotch, tether ball

Oct.
- Playground Games
  - kick ball
- Adventure Education center
- High Ropes and Initiatives
- Lead up games
- Cooperative games

Nov.
- Cooperative games
  - Volleyball- bump- set
    - review serve- chair volleyball
    - bench volleyball
    - 3-way

Dec.
- Climbing wall

Jan.
- Stunts and tumbling
  - shapes and roles
  - balance combinations
  - stations
  - stunt

Feb.
- Personal Fitness
  - testing / jump rope
- Manipulatives
  - hockey / basketball

Mar.
- Cooperatives
  - wall / zip
  - initiatives
  - cooperatives

April
- New Games
  - Adventure education center

May
- Softball
  - modified games
  - adventure education center

Adventure education center

Fall
- Initiatives

Spring
- Ropes for grade 5- two experiences
APPENDIX H
Cornwall Initiatives Activities

**Traffic Jam**: Place one stump for each participant plus one in line formation. Each player stands on a stump and faces the middle where the extra stump has been left. Players must switch positions, moving to an empty stump in front of them.

**Trolley**: Groups of four or more move from one spot to another on 4 x 4 trolleys. If a member touches the ground with a body part, the entire group must start again. Members may physically support one another.

**Magic Circle**: A puzzle in which students are linked to a partner with short ropes. The goal is to untangle the ropes.

**Cooperative Games**:

**Scooter Snatch**: Students work in partners on one or more scooters, attempting to "snatch" scooters from other students.

**Egg Ball**: Two teams play a game which is a combination of tag and football. The goal is to move to the opponent's goal line without being tagged and throw a ball back to a teammate behind one's own goal line. If tagged, a teammate must rescue you.

**Frog Wars**: One team attempts to move up the gymnasium by repeatedly jumping on their hot spots. The other team is trying to hit the jumpers with soft carpet balls. Once jumpers reach the end, they become a "super frog" and can protect their teammates from the balls. The goal is to have the whole team reach the end of the gymnasium.

**Frisbee Tag**: Two teams attempt to strike opponents below the waist with frisbees while avoiding getting hit. If hit, students must sit down until a teammate frees them. Students could protect teammates from frisbees by blocking. The goal of the game is to have all members of the opposing team sitting.
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