STUDENT ATTITUDES TOWARD PHYSICAL EDUCATION AT THE INTERMEDIATE SCHOOL LEVEL

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STUDENT ATTITUDES TOWARD PHYSICAL EDUCATION AT THE INTERMEDIATE SCHOOL LEVEL

by

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A thesis submitted to the School of Graduate Studies in partial fulfillment of the requirements for the degree of Master of Education

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ABSTRACT

Student attitudes toward physical education were examined in 726 students aged 12 to 15 in grades 7, 8, and 9 in six intermediate schools in St. John's, Newfoundland. Analysis of variance was used to ascertain the differences in students' responses to a variety of program aspects including: specific interest in physical education, the connotation of physical education, teacher attributes, teaching methodologies, the status of physical education, the physical education curriculum, the benefits of participation in physical education, and adolescent disturbances. Each program aspect was examined by student age, gender and grade, teacher gender, class grouping, perceived body build, perceived level of fitness, and perceived level of sports ability.

The attitudes of female students were significantly more positive than those of male students for the younger age group, while after the age of 14 the reverse was true. There were no significant differences in students' responses by teacher gender or class groupings of coeducational and single-gender.

A multiple regression analysis indicated that the status of physical education, the connotation of physical education, and adolescent disturbances were the most important factors in relation to students' attitudes toward physical education.

The implications of the study's findings for physical education and recommendations for program changes are presented. Recommendations for future studies are also suggested.

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CHAPTER I

Introduction

The very existence of the evolving human species has been dependent upon activity. The struggle to provide food, clothing, shelter, and protection placed such physical demands upon the individual that only the fittest survived. Modern technology has greatly reduced these physical demands and today's generation must adapt to a world in which increased technology has resulted in decreased physical activity.

Many people today have accepted the fact that regular, vigorous physical activity is still necessary for the optimal development of the individual. It would appear that they are more concerned with their general health and well-being than ever before. As a result, according to Kirchner(1988)

> ...public education in all industrial societies has been performing a juggling act attempting to meet, on one hand, the demands of industry, and, on the other hand, the demands of a more informed, organized, and leisure conscious labor force. (p. 44)

In accepting the challenge and responsibility of contributing fully to the changing face of education, physical educators have been examining their personal philosophies, instructional practices, and program objectives to ensure a balanced program for the maximum number of students. An

effective program should enable the individual to make wise decisions regarding physical activity and to develop positive health habits and attitudes. Unfortunately, several studies and national forums have indicated a breakdown between the purposes of these activity programs and their outcomes (Bailey, 1973; Cunningham, 1979; Fitness Canada, 1983).

Insight into the failure of activity programs to reach desired outcomes may be found in an investigation of attitudes toward physical activity. Fox and Biddle (1989b) stated that " the solution to the problem of continued participation in youngsters rests with the development of positive attitudes to physical activity" (p.8). These authors also reported that a recent survey (1983) of Canadian parents and teachers rated the " development of a good attitude toward taking part in physical activity " as one of the most important physical education objectives.

Physical education is an integral part of the total education curriculum and uses carefully selected physical activities to promote the optimal development of the individual. Effective programs should promote healthy living and the adoption of an active lifestyle. Studies which investigate students' attitudes toward existing physical education curricula assist in the ongoing processes of program development and evaluation.

Purpose of the Study

The present study was undertaken in an effort to contribute to developments within physical education which attempt to maintain students' interest in physical activity throughout their adolescent years and beyond. The primary purpose of the study was to examine intermediate school students' attitudes toward physical education, and to ascertain if there were differences in students' attitudes toward various aspects of the physical education. More specifically, the study investigated the similarities and differences in male and female students of 12 to 15 years of age in grades 7, 8, and 9 with regards to their attitudes toward physical education. The study also attempted to identify those aspects of the physical education program which have a strong relationship with positive attitudes toward physical education and whether there were similarities or differences in these by gender, grade, and/or age.

The specific aspects of the program which were examined include the following:

(a) the connotation of physical education as being masculine or feminine in nature
(b) teacher attributes
(c) teaching methodologies
(d) the status of physical education in the school program
(e) the physical education curriculum

(f) the perceived benefits of physical education

(g) individual adolescent disturbances, and

(h) specific interest in physical education

The second focus of the study was to ascertain whether the gender of the physical education teacher and/or the class-grouping, as co-educational or single-gender, were related to students' attitudes toward physical education.

A third focus of the study was to ascertain whether there were differences in students' self-perceptions of body build, fitness level, and/or sports ability and their attitudes toward physical education.

Research Questions

The study addressed the following research questions:

(1) Are there differences in the attitudes of male and female students in grades 7, 8, and 9 and between the ages of 12 to 15 toward physical education?

(2) Are there differences in students' attitudes toward physical education in relation to the degree to which they view physical education as having a masculine or feminine connotation?

(3) Are there differences in students' attitudes toward physical education in relation to the degree to which they view the attributes of the physical educator as favorable or unfavorable?

(4) Are there differences in students' attitudes toward physical education in relation to their expressed satisfaction or dissatisfaction with the physical educators' teaching methodologies?

(5) Are there differences in students' attitudes toward physical education in relation to their view of the status of physical education in comparison to other subjects?

(6) Are there differences in students' attitudes toward physical education in relation to their expressed satisfaction or dissatisfaction with the physical education curriculum?

(7) Are there differences in students' attitudes toward physical education in relation to the degree to which they recognize the benefits of participating in physical education?

(8) Are there differences in students' attitudes toward physical education in relation to the degree to which they experience disturbances caused by their adolescent maturation and development?

(9) Are there differences in students' attitudes toward physical education in relation to participation in co-educational versus single-gender physical education classes?

(10) Are there differences in students' attitudes toward physical education in relation to being taught by a teacher of the same gender versus being taught by a teacher of the opposite gender?

(11) Are there differences in students' attitudes toward physical education in relation to self-perceptions of their body build?

(12) Are there differences in students' attitudes toward physical education in relation to self-perceptions of their level of fitness?

(13) Are there differences in students' attitudes toward physical education in relation to their self-perception of their ability in sports?

Rationale for the Study

Automation and technology have freed many people from the exhausting physical labor required of earlier generations. Regular vigorous activity, however, is still essential for sound physical and mental health. The increase in leisure time, which has been made available to the average person, has created a need for the development of lifetime recreational skills. According to Corbin, Dowell, Lindsey, and Tolson (1976), the physically educated person must be able to make intelligent decisions concerning health, physical fitness, and

recreational pursuits. In addition, each person must recognize the role of exercise and physical activity in daily life.

Fox (1988/89) stated that we can not assume that merely drilling children with motor skills and fitness will promote the adoption of an active lifestyle. Improvements in children's physiological status have limited value unless they occur together with improvements in their psychological orientation to physical activity. We must adopt a psychological perspective in planning and acknowledge that "... our students develop perceptive minds and subsequently make decisions about life events which, given the freedom of choice, eventually direct much of their behavior "(p.16). To initiate effective curriculum planning, physical educators must first identify the psychosocial factors which influence the students' decision-making processes. If the individual's perception of the process of physical activity is negative, then the desired product or outcome of health-related education, which focuses upon continued participation in physical activity, may also be negative.

Adolescence is usually viewed as the period of transition from childhood to adulthood. It is a complex period of development which is characterized not only by rapid physical, physiological, cognitive, and affective growth, but also by the emergence of a sense of personal identity and by the development of attitudes, values, and patterns of living

(Conger, 1973). An effective physical education program must contribute to the development of positive attitudes to physical activity or it will stand in the way of goals which have to do with health and a meaningful use of leisure time (Van Wersch, Trew, and Turner, 1992).

Several studies have indicated a decrease in fitness levels and an increase in adolescent health problems (Bailey, 1973; Bailey, Mirwald, Faulkner, Fairburn, & Owen, 1982; Cunningham, 1979). In response to these findings, governments have undertaken many initiatives to increase the physical activity and physical fitness levels of this target group (British Sports Council, 1989; Fitness Canada, 1988a). Unfortunately, as Luke and Sinclair (1991) point out, research findings indicate that activity levels of adolescents decrease with age and they choose to opt out of physical education programs once the subject becomes an elective.

The attitudes of adolescents toward physical education are likely to influence their decisions to participate in school physical education programs and their decisions to maintain an active lifestyle even after leaving school. It is therefore necessary to recognize the kinds of situations which motivate students to be active participants, as well as those situations which motivate them to opt out of participating (Fox, 1988/89). Freischlag (1973), as cited in Townes(1979), has stated that

> Shaping positive attitudes and habit patterns toward physical activity is crucial because of their close relationship with the motivational set of the learner. Positive impact results from physical education classes when interest is aroused, attention sustained, and learning judged worthwhile. Attitudes usually determine the consequences of physical education. (p.17)

In response to national initiatives to encourage continued participation in physical activity and the adoption of an active lifestyle, the Physical Education Advisory Committee of the Newfoundland and Labrador Department of Education (1986) administered a survey to determine the status of physical education programs in the province. The findings reflect those of other studies that showed a decline in activity levels as a function of age. When we consider that the prevention and treatment of health risk factors through participation in adequate physical activity is viewed as an important means of achieving a healthier lifestyle, it becomes clear that educators need to identify those factors which encourage youth to maintain an active lifestyle.

Edgington (1968) stated that negative attitudes are obstacles to learning and that the removal or change in these attitudes could bring about an increase in learning. While attitudes may change, they are resistant to change once they are entrenched in our psychological orientations toward

physical activity. It is important, therefore, to determine students' attitudes early in their school careers so that learning experiences which may facilitate the development of positive attitudes toward continued participation in physical activity can be developed and implemented where current strategies do not appear effective.

Attitude is a complex construct which is not easily defined. A review of the literature on student attitudes toward sport and physical activity indicates that it includes the components of beliefs, values, and intents (Fox and Biddle, 1989b; Kenyon, 1968; Godin and Sheppard, 1986) and that accurate measurement necessitates a clearly defined attitude object (Schutz, Smoll, and Wood, 1981).

Through direct participation in physical education classes, children develop perceptions of personal ability and perceptions of the activity as to whether or not it was fun, of value, boring or unpleasant. The researcher contends that examining the perceptions which students hold regarding the various aspects comprising their physical education experiences is synonymous with examining student attitudes toward physical education. Hence, the rationale for this study.

Significance of the Study

The current physical education curriculum guide for the province of Newfoundland and Labrador was developed almost twenty years ago and efforts are currently underway to develop a new guide. The Department of Education has struck a committee whose purpose is to reexamine the aims, goals, and objectives for physical education at all school levels. The study of student attitudes may provide insights on current physical education programs at the intermediate school level which may be of value to this committee.

The economic climate in Newfoundland in recent years has resulted in budgetary reductions for all school boards. At the school level, this has meant a reduction in the available teaching staff and a realignment of program options. One action which has been instituted within many school boards in response to these cutbacks is the introduction of co-educational physical education. Physical educators need to be aware of their students' reactions to co-educational grouping, especially at the intermediate school level where adolescent changes have a strong influence on self-perceptions. The present study could provide insights in this area which physical educators could access in their attempts to make physical education a positive experience for all students.

Delimitations

The delimitations of the study were as follows:

(1) The sample will be delimited to those students in grades 7, 8, and 9, between the ages of 12 to 15, and attending intermediate school(s) in St. John's in the 1993-1994 school year.

(2) The study is delimited to an examination of students' attitudes toward several aspects of the physical education program and include (1) the connotation of physical education as masculine or feminine, (2) status, (3)curriculum, (4) teacher attributes, (5) teaching methodologies, (6) benefits, and (7) adolescent disturbances,

Limitations

(1) Due to ethical considerations involving the participation of minors in research, only those students who returned the signed parental/guardian consent forms were included in the survey.

Definition of Terms

For the purpose of this study, the following definitions shall apply:

Attitudes: The beliefs, values, and intents which an individual holds toward specific objects.

Adolescent: Student between the ages of 12 and 15 and in grades seven, eight, or nine.

Participation: Active involvement in the physical activities comprising scheduled physical education classes. There is no distinction as to the intensity, frequency, or duration of involvement.

Physical Activities: The sports, games, and exercises which comprise the physical education curriculum.

Sports: The activities in the physical education curriculum which have a competitive context.

Exercises: The activities in the physical education curriculum which have a non-competitive context.

Organization of the Study

Chapter I includes the purpose of the study and the specific research questions upon which the study is built. This is followed by statements on the general rationale for and the significance of the study.

The review of the literature in Chapter II begins with a conceptual model of the psychological dimension of physical

education and on the development of the students' psychological orientations to participation in physical activity as it is experienced in their physical education classes. The review of literature is then subdivided in relation to the specific research questions addressed in the study and reflects specific factors which have been found to influence students' attitudes toward physical education.

The design of the study, addressed in Chapter III, includes a description of the processes followed in the development of the survey instrument and a description of the pilot study conducted to pretest the instrument. This is followed by descriptions of the study sample, the procedures followed in the administration of the survey, and the analyses performed upon the data that was gathered. The chapter concludes with a brief summary.

A comprehensive examination and explanation of the results of the various statistical analyses which were carried out on the data obtained through the survey comprise Chapter IV.

Chapter V presents the implications, conclusions, and recommendations arising from the study.

Chapter II

Review of Literature

Introduction

The review of literature begins with a conceptual model of the psychological dimension to physical education. The model outlines how the students' experiences with physical activity in physical education classes influence the development of their psychological orientations to physical activity. It is their psychological orientation which then influences the students' decisions regarding participation in physical activity.

The review of literature is then subdivided to address the seven primary aspects within the physical education program which were the focus of this study and which have been found to influence students' decisions regarding participation in physical education.

The Psychological Dimension To Physical Education

In examining the psychological dimension to physical education, Fox (1988/1989) begins by stating that

> ... as adults, we recall our past physical education experiences with widely differing responses. For some of us, memories are filled with a sense of enjoyment, achievement, and pride, but for many others, it brings

> back feelings of humiliation, unpleasantness, and suffering. ... It is their perceptions of the experience which makes it potentially uplifting on the one hand, or psychologically stressful on the other. (p15)

Developments within the field of physical education appear to be taking a more humanistic approach. Over the past decade, an expanding body of knowledge has been generated on the psychological dimensions of continuing participation in physical activity. A series of articles by Fox and Biddle explored such concepts as attitudes, values, self-motivation, and self-esteem which impact upon the motivational responses of our students in the physical education setting (Fox, 1989; Fox and Biddle, 1989a; Fox and Biddle, 1989b; Biddle and Fox, 1989; Fox, 1988; Fox and Biddle, 1989c). These authors feel that if physical educators can gain a clearer understanding of the types of situations which either encourage or discourage children to participate in physical education, they can develop their teaching styles and their curricula in a manner that makes an active lifestyle appealing to all children.

Fox (1988/1989) has presented a conceptual model for understanding the psychological dimension in physical education. As the individual directly responsible for the development and presentation of the curriculum, the physical educator is presented in this model as the key agent in establishing the character of the physical activity experience

for children. Through direct participation in physical education classes, children will develop perceptions regarding personal ability and perceptions of the activity as to whether or not it was fun, of value, boring, or unpleasant. It is these perceptions, probably more so than reality, which ultimately determine the success of physical education programs.

Children's experiences with the activity in physical education programs contribute to the development of their psychological orientation to physical activity. Over time, children begin to compare abilities, assign personal ratings, examine the benefits and costs of their actions, and make behavioral choices. Some children continue to enjoy physical activity, as it is experienced in their physical education classes, throughout their school life. Others, especially girls as they face adolescence, find that the disadvantages of participating in physical education outweigh the advantages (Earl and Stennett, 1983; O'Reilly, 1988).

Fox (1988/1989) hypothesizes that when children leave school, their psychological orientation to physical activity will fall into one of three categories. The "approachers" will perceive positive rewards to active participation in sport and/or exercise and will actively seek out physical activity experiences. The "avoiders" perceive negative consequences to participation in sport and/or exercise and are

unlikely to continue active participation. The "neutrals" will have ambivalent feelings toward sport and/or exercise and their level of participation will be dependent more on social and environmental factors than it will be on personal convictions. These categories express the influence of the psychological orientation to physical activity on the future activity patterns of youth.

This model is built upon the foundation that providing the physical educator with greater amounts of information on the psychological perspective of children towards physical activity may improve the quality of the physical education experience for more children. These children will enjoy physical education, recognize its value, remain active participants, and adopt activity as a lifestyle habit.

It becomes clear that physical educators must gather greater amounts of information on children's perceptions of physical activity as it is experienced in their physical education programs. They must also attempt to gain a greater understanding of why children feel the way they do about these programs. While related research and theory from mainstream and educational psychology may provide physical educators with some insight on the psychological dimension to physical education, a key component must be research which revolves around the evaluation of existing programs.

Studies on student attitudes toward physical education as an activity course are not a new phenomenon. Many of the early studies focused upon college students (Bullock and Alden, 1933; Smith, 1933, Moore, 1941; Wear, 1951), while others focused upon high school students (Carr, 1945; Lapp, 1933; Edgington, 1968). Although these studies examined student populations which differed from that of the present study, they do provide insight into the study of student attitudes and to the development of instruments through which these attitudes may be measured.

A review of literature on student attitudes toward physical education did not unearth any studies which focused specifically upon the intermediate school student. Previous studies which included these students either tended to examine attitudes toward physical activity in general (Godin and Sheppard, 1984,1986) or focused on athletes involved in competitive sports (Schutz, Smoll, and Wood, 1981).

A comprehensive investigation of student attitudes to physical education must include an analysis of the many factors which may impact upon the psychological orientations of students towards physical activity. A study by Van Wersch, Trew, and Turner (1992) suggested that these factors may be viewed from various levels including the school, society, and the individual. More specifically, these factors have included (a) the connotation of physical education as being masculine

or feminine in nature, (b) teacher attributes, (c) teaching methodologies, (d) the status of physical education, (e) the physical education curriculum, (f) the perceived benefits of participating in physical education, and (g) individual adolescent characteristics or disturbances.

Connotation of Physical Education

> This priority of bodily training is common to both sexes but it is directed to a different object. In the case of boys the object is to develop strength, in the case of girls to bring about their charms... Women need enough strength to act gracefully, men enough skill to act easily. (Rousseau, quoted in Scraton 1992:26)

Success in sports participation has traditionally been associated with such characteristics as strength, aggression, achievement, toughness, and assertiveness. These are the same characteristics which society predominantly associates with the male sex role (Die and Holt, 1989).

Examining gender issues and girls' physical education in England from a historical point of view, Scraton (1992) states that "gender ideologies of middle-class femininity, motherhood, and sexuality" (p.26) are the foundation upon which the physical education system for girls was built. While the girls' physical education programs may have imitated

those of the boys, it was assumed that the girls needed to be given different experiences. As a result, the activities selected for the girls' physical education curriculum were based upon " an acceptance of biological inferiority and difference, and on the need to guarantee women's future mothering role. " (Scraton, 1992:39).

Leaman (1983), as cited in Evans (1984), argues that the problems that female students have in relating to physical activity in the secondary school physical education programs may, in part, be due to the contradictory images between the conventional conceptions of femininity, as modelled by family, the media, peers, and society in general, and the images girls normally associate with involvement in sport; those being images of "muscle, sweat, and showers" (p.13). With sport having a masculine and achievement-oriented connotation (Anthrop and Allison, 1983; Scraton, 1992; Snyder and Spreitzer, 1976), participation in the physical education activities may create conflict and confusion for the female adolescents. Physical education may appear in direct conflict with their socially inculcated role of femininity.

Harris (1979) stated that while individuals are born male or female, they learn to be masculine and feminine. This learned behavior is reflective of the culture in which one lives. Sport, in turn, reflects the appropriate mores, attitudes, values, and behaviors that are acceptable to the

culture in which it is found. Harris further stated that the findings of studies which examined declining female participation levels in competitive athletics suggest that ceasing participation has its roots in the conflict inherent in traditional conceptions of femininity and being an athlete.

This finding supports that of Anthrop and Allison (1983). The researchers found that females perceived that they worked as hard as and were as dedicated as their male counterparts, yet they received little reward or recognition for their behavior. The negative expectations and sanctions of significant others were found to be the major sources of conflict for female athletes. While internal conflict was low and females adjusted to their role as athlete with no problems, outside forces were found to influence the female attitudes toward the appropriateness or inappropriateness of sport participation. While these studies focused upon the female athlete, the question arises as to whether these same forces have an effect on the participation levels of females in all types and levels of physical activity. Specifically, studies should be undertaken to examine the influence of significant others on female participation levels in physical activity in general, and in physical education programs in particular.

Evans (1984) suggests that the activities encompassing the girls' curriculum carry less prestige than those of the

males and are less readily pursued in adult life. He further suggests that the way in which the curriculum is organized and differentiated for girls and boys, the grouping principles which are applied for teaching purposes, and the attitudes which are expressed in the course of teaching may all have a negative impact on the task of generating and sustaining girls' interest and involvement in physical activity.

Wright and King (1990) studied gendered discourse in physical education. The researchers argue that an analysis of teacher language used in physical education lessons reveal subtle meanings in the linguistic choices made by teachers through which girls and boys come to form particular relationships with their bodies. It is the researchers' contention that these relationships are culturally construed and influence both the individuals' desire to be active and their choice of activities.

While the girls in this study were encouraged to perform a physical activity, they were simultaneously restrained and constrained by the manner in which they were to perform it. On the one hand, they were expected to be active, competitive, and achievement-oriented, yet on the other hand, they received instructions to be aware of their appearance, to be careful, and to limit their repetitions of the activity. The boys in the study did not face this ambiguity in messages. They received consistent discourses of masculinity with the common

emphasis on individualism, aggression, toughness, competition, and achievement. Wright and King contend that, on the basis of the evidence provided by the texts used in their study, teacher discourse transmits cultural stereotypes of masculinity and femininity. For girls, the influence of the discourse of femininity is such that it appears to undermine activity, achievement, and effort.

Research findings indicate that activity levels decrease with age (Bailey, 1979; Butcher and Hall, 1983; O'Reilly 1988) and students, especially girls, choose to opt out of physical education programs once the subject becomes elective (Earl and Stennett, 1983; Fitness Canada, 1988a; Physical Education Advisory Committee, 1986). Butcher and Hall (1983) found that girls' participation in physical education began to decline in junior high school and that the image of the female athlete also declined with age. An interesting finding of the study was that girls' secondary involvement in physical activity (listening to sports on radio and television and reading about it in newspapers) increased over the course of this longitudinal study.

Sparapani and Opalewski (1989) conducted an investigation of the opinions of students in grades five to eight concerning their physical, educational, social, and emotional needs. Both sexes seemed to enjoy physical education, with female

interest and participation declining considerably from fifth to eighth grade.

Teacher Attributes

Perceived teacher expectations and teacher-student interactions can positively or negatively influence student attitudes toward participation in physical activity (DeMarco and Sidney, 1989; Placek, 1985). From the point of view of students, positive teacher attributes include friendly, understanding, and well-organized, while negative attributes include not understanding, rude, and easy (Sparapani and Opalewski, 1989).

Godin and Sheppard (1984) studied the normative beliefs of school children in grades seven to nine concerning regular exercise. The researchers found that regardless of sex, age, or level of activity, all students agreed that teachers expected them to exercise regularly in their leisure time.

In a study of secondary school students in Ontario (Earl and Stennett, 1983), students taking physical education and health perceived their teachers as enjoying teaching either all of the time or during some activities. Eighty percent of students not taking physical education and health indicated that they might take the course if the teachers made them feel good about it.

Luke and Sinclair (1991) conducted a study to identify and examine the potential determinants of male and female adolescents' attitudes toward school physical education. Although grade 11 students were used for their study sample, students were asked to comment on their school physical education experiences from kindergarten through grade 10.

All students identified the teacher as the second-ranked determinant of negative attitudes toward physical education. Teacher methodologies accounted for many of the 12 teacher-related minor determinants of these negative attitudes. The teacher was also identified as the fourth-ranked determinant of positive attitudes, especially among females not taking physical education. Both male and female students suggested positive teacher attributes would include having high expectations, being focused on learning, providing challenges, having sensitivity, and being encouraging.

On the basis of the results of this study, it would appear that the teacher may have a greater impact on the development of negative attitudes than upon positive attitudes. While Figley (1985), as cited in Luke and Sinclair (1991), suggested that the opposite was true, both studies identify the teacher as an important determinant of attitudes.

Status

Staffo (1990) stated that the quality and quantity of physical education programs throughout the United States vary quite markedly. Factors which have contributed to these variations include the elimination of physical education programs in some school districts, reductions in the hiring of trained specialists, budgetary reductions, as well as disinterested and unmotivated students and teachers. Physical education was eliminated from the curriculum in some states when the amount of money the public was willing to spend on education was limited and tax-payers viewed physical education as a frill that just was not worth the cost.

A similar event has been seen to have happened in Canada (Grant, 1990). In the mid 1970's and 80's, Blanchard School, British Columbia, had an internationally recognized and community supported daily physical education program. Although it was viewed as having a positive impact on the physical and social well-being of children, the program was terminated. Clearly, daily physical education programs have little status in the education system.

Lambert, Barrett, and Grube (1988) stated that while quality physical education programs have much that they can contribute to the total education of the individual and are necessary for the present and future well-being of youth, they are traditionally viewed as being of lesser importance than

other school disciplines. Generally speaking, physical education and those who teach it are granted a low status in schools (Grant, 1990).

Taylor (1986) stated that the importance of physical education in secondary schools is being questioned and people have little regard for the profession or the teaching. Part of the problem facing physical education is the failure of society and the educational community to take seriously the teaching and learning of physical education. Taylor expressed the views regarding physical education which are held by some educational researchers at institutions such as the Far West Laboratory, the Research and Development Center on Teacher Education at the University of Texas at Austin, and the Institute for Research on Teaching at the University of Michigan, Ann Arbor, as including:

- Physical education classes and programs are glorified recesses.
- Physical education teachers are highly paid, educated teacher aides.
- The purpose of physical education is to help fill the school day and give students a breather.
- There are no teacher or curriculum effects.
- The outcomes of physical education for students are problematic and questionable (p69).

Essentially, physical education programs at the secondary school level in America are viewed as disintegrated and as failing to clearly articulate attention to " a sequential curriculum structure, goals, skill acquisition, assessment needs, and learning theories" (p70).

A second problem facing physical educators is their failure to resolve conflicts between the stated aims and intentions of physical education and the actual practice or implementation of the curriculum. Hendry (1978) surveyed over 3000 comprehensive school students and 75 physical education teachers to examine teachers' curriculum intentions, decisions, and implementations and students' responses to the curriculum. The findings suggested that while teachers' aims focused upon interest and enjoyment, the teaching processes which were implemented appeared to emphasize competition, status, and winning. It is Hendry's contention that the teachers' search for competitive achievement, in a desire to gain recognition and status, may have had a negative impact upon students' interest in sports activities and their striving for personal improvements in skill development.

It appears that the low status which is accorded to physical education within society and within the educational system is also reflected in the attitudes of some students within our schools. The question remains, however, as to the

age at which this low opinion first begins to appear and as to who holds this opinion.

Earl and Stennett (1983) studied secondary students in grades 9 to 13 in Ontario. Both males and females at all grade levels ranked " other subjects are more important " as the main reason for not taking Physical and Health Education.

Van Wersch, Trew, and Turner (1992) studied interest in physical education in a sample consisting of 3344 students of 11 to 18 years of age in Northern Ireland. Five aspects of educational importance, including the status of physical education, were identified and examined in relation to students' interest. Stepwise regression analyses were carried out and the status of physical education as a school subject appeared most frequently in the first step of the regressions. Status appeared to contribute more often to the variance of interest of the girls and in the same age group as when interest in physical education declines markedly with age. The authors suggest that achievement-motivation in academic examinations, which students face for the first time at ages 14 to 15, may have a negative impact on interest in physical education as students learn which subjects are or are not important for examinations.

Status has also been examined from a student point of view with regards to the influence of participation in physical activity upon male and female popularity. In their

study on sport and social status, Thirer and Wright (1985) found that "athlete" was not a highly regarded attribute for female adolescent popularity. "Being an athlete" was ranked fifth of six choices by females and fourth of five choices by males. The opposite was true for male adolescent popularity. Both males and females ranked "be an athlete" as the foremost criteria for male popularity. This finding points to the continuing need to investigate the role of sport in the social status system of male and female adolescents, and the part it may play in declining levels of female participation in physical activity.

Curriculum

Luke and Sinclair (1991) attempted to identify and examine the potential determinants of the attitudes of male and female adolescents toward school physical education. Curriculum was regarded as the most influential determinant of both positive and negative attitudes, regardless of students' gender and regardless of whether they elect or avoid school physical education. The highest positive support was for team games, while three determinants related to fitness development were identified as contributing to negative attitudes.

A study by Figley (1985) supported the findings of Luke and Sinclair (1991) and placed curriculum as the highest ranked determinant of positive attitudes. Earl and Stennett

(1983) found few differences between male and female attitudes regarding the importance of various elements of the physical education curriculum and their reasons for taking or not taking physical education. Van Wersch, Trew, and Turner (1992) found a strong correlation between interest in physical education and the physical education curriculum, but it was more so for older (ages 14 to 18) students than the younger (ages 11 to 13) students and more so for females than for males in these groups.

Williams (1988) studied adolescent involvement in physical activity outside school with reference to some potential determinants of a predisposition to take part in such activity. The findings of the study support a view that low levels of participation may partially be attributed to the school and the curriculum offered. The emphasis on competitive team games in physical education classes was cited as a contributing factor.

The Canadian Council on Children and Youth (1985) investigated activity programs, which were made available to Canadian youth, for the purpose of establishing the criteria which were necessary to motivate youth to participate in regular activity. The findings of the project, presented in the report Choices and Challenges, provided a prioritized listing of the reasons for offering activity programs and placed fun, physical fitness, and a healthy lifestyle at the

top of the list. Schools ranked fun as a low priority and this may influence students' decisions to drop out of physical education programs at the earliest opportunity.

The report also identified the kinds of activities most commonly offered to youth and the activities most preferred by youth. A finding of particular importance was that what was most commonly offered was not always what was most preferred. Most programs, including physical education programs in the schools, offered traditional sports activities such as soccer, basketball, and floor-hockey which involve varying levels of competition. Youth, however, preferred outdoor activities, racquet sports, martial arts, and current fads such as weight-training and aerobic dance. Youth wanted activities which offered adventure and challenge and which emphasized fun, participation, and social aspects.

Goudas and Biddle (1993) studied 13 to 14 year old students on their perceptions of enjoyment in physical education. The researchers found that the content of the lessons was the major reason given for both satisfaction and dissatisfaction with physical education. Fun, a change in school work, health and fitness, and a challenge were factors mentioned by students as making physical education an enjoyable subject.

Teaching Methodology

McKenzie, Alcaraz, and Sallis (1994) assessed children's liking for activity units in an elementary school physical education curriculum. The study examined 16,032 ratings of "liking" of 648 lessons reported by students in eight coeducational fourth- and fifth-grade classes during an 8-month period. While teaching methodology was not a specific aspect of the curriculum under investigation, a test conducted to examine differences in activity by students from the two participating schools indicated that students' liking scores for the activity units did not differ significantly by the school they attended or the teacher who taught them.

In a study on the teacher/student dyadic interaction of elementary physical education student teachers, DeVoe (1992) observed three female student teachers while they taught coeducational elementary school physical education. The observations were conducted on 20 different occasions. The analysis of data indicated that male students dominated the verbal interactions between teacher and students. Female students were spoken to less often, responded less often when spoken to, and initiated fewer dialogues with their teachers. These findings were found to exist regardless of the content of the interaction. This unequal treatment of male and female students in elementary school physical education classes is especially important when taken into consideration with the

findings of studies which have shown that perceived teacher expectations and teacher-student interactions can positively or negatively influence student attitudes toward physical education (DeMarco and Sidney, 1989; Placek, 1985).

Hendry (1978) examined teachers' curriculum intentions, decisions, and implementations and students' responses to the curriculum. While teachers' aims focused upon interest and enjoyment, the teaching processes implemented emphasized competition, status, and winning. The teaching style which was favored by teachers emphasized direct teaching and this method is primarily linked with competitive ability and emphasizes teacher control. Vertinsky's study (1984), which examined differences in the teaching styles of male and female physical education teachers, gives support to the preference for direct teaching strategies. Male teachers preferred the command method of teaching for larger classes, were more inclined to exert discipline, and were focused upon well-specified goals. Female teachers, however, tended to avoid the use of forceful discipline and preferred broader and more diffused goals.

Student responses to the curriculum processes appeared to be negative. Fewer than half the boys and one-third of the girls participated in extra-curricular school sports and this trend carried over into a lack of participation in leisure time sports away from school. Students who were non-participants, except in the compulsory physical education

classes, responded that they were given less attention than the more active students, that some activities carried greater status and prestige than others, and that they disliked the teaching processes involved. These students also expressed enjoyment of the actual sports activities and a desire to improve their skill level which further suggested a negative response to the curricular processes rather than the activities themselves.

The study by Luke and Sinclair (1991) identified the teacher as the second-ranked determinant of negative attitudes toward physical education by males and female and by participants and non-participants. Students expressed greatest dislike for teachers' methods of evaluation and a lack of student involvement in decision making. Sound methods of evaluation, good classroom management techniques, and the opportunity to be involved in the decision making process were also cited as important determinants of positive attitudes.

Aicinena (1991) conducted a review of studies which had focused upon the teacher and student attitudes toward physical education. The author reported on the findings of a study of elementary school students (Schempp, Cheffers, and Zaichkowski, 1983) which found that providing students with an opportunity to be directly involved in decision making resulted in more favorable attitudes toward physical education than did teaching methods which were teacher centered and did

not allow for student involvement in decision making. Aicinena also reported the findings of a study (Stensaasens, 1975) in which one-fourth of the 7th, 8th, and 9th grade students sampled indicated that teacher centered methods of instruction and planning made them feel negatively about physical education.

From the studies cited, it would appear that student attitudes would be more favorable when methods of instruction which were less teacher centered were employed in the learning situation. Positive attitudes toward physical education seem to be related to teaching methodologies in which the teacher provides opportunities for student involvement in the decision making process while retaining control of the processes involved in instruction (Aicinena, 1991).

Benefits

As stated in the introduction to this study, technology has reduced the physical demands placed upon each individual in today's society. In the interest of maintaining a healthy society and in the interest of reducing the escalating of costs of health care, governments, the medical profession, and society in general are beginning to focus on health promotion and preventative programs. Changes in lifestyles, rather than medical interventions and innovations, are becoming the focus

of initiatives to improve standards of health (Robbins, 1990).

Physical education programs reflect this trend towards promoting healthy lifestyles through its development of the Quality Daily Physical Education (QDPE) program and its focus upon the development of positive attitudes towards active living. The question remains as to whether students in our schools recognize the benefits of active participation in physical activity as it is experienced in physical education programs.

Fox and Biddle (1989) reported that physical fitness and health was one of the motives stated by children for their participation in sporting activities.

The Canada Fitness Survey (Fitness Canada, 1983) indicated that the reasons Canadian youth gave for being active included feeling better and weight control. This survey found that active youth had higher fitness scores and lower body-fat levels than less active youth, but only six percent of young people between the ages of 10 and 19 were active regularly and vigorously enough to gain these benefits. It would appear from this study that young people recognized the benefits of physical activity, but did not adopt a lifestyle that could lead to the attainment of these benefits.

Earl and Stennett (1983) surveyed secondary students in Ontario as to their attitudes toward physical education.

Students taking physical education ranked liking the activity and fitness as the main reasons for participation in physical activities. Those students not taking physical education indicated that other subjects having more importance and not being able to fit it into their timetable as the two main reasons for their non-participation.

Telema (1978) reported on the findings of studies which had been conducted to assess pupils' interest and motivation for physical activity in Finland. Pupils reported that they were primarily involved in physical activity and sports as a means of promoting health and physical fitness and as a source of recreation. While boys stated that competition was an important motive for their participation, girls included losing weight as a motive for their participation. The interest in competition decreased with age while the importance of the other participation motives increased. Both boys and girls listed the lifetime activities of cycling, cross-country skiing, and swimming as the forms of activity preferred during their leisure time. The girls were also interested in dance while the boys expressed an interest in the competitive sports of soccer and ice-hockey. The longitudinal study of Butcher and Hall (1983) examined female participation in physical activity from grades 6 (age 11) to 10 (age 15). Participation levels in primary physical activity decreased from grade 6 to grade 10 while participation levels

in secondary activities (being a spectator or following sports in the media) increased. While the interest in physical activity for competition decreased throughout the study, attitude toward physical activity for the release of tension increased.

Godin and Sheppard (1986) studied the exercise intentions of students in grades 7 to 9. Students who indicated high intentions to exercise had strong, positive beliefs about the consequences and benefits of exercising. The low intenders, however, held more neutral beliefs concerning the consequences and benefits of regular exercise. Students' stated beliefs appeared to remain constant across the grade levels except for a decrease in the belief that exercise was fun.

Adolescent Disturbances

Adolescence is the stage in human development which is usually viewed as beginning with the onset of rapid physical changes (Yussen and Santrock, 1982). It is characterized by dramatic increases in height and weight, changes in body contour, and the development of secondary sex characteristics. It is also a time in which the socialization process becomes very trying as adolescents feel that everyone is as preoccupied with their behavior, feelings, and thoughts as they are themselves. It is a period of self-consciousness and

the age-span corresponds predominantly with that of the intermediate school student.

The rapid changes in physical, physiological, and sexual characteristics and the self-consciousness experienced by many adolescents may be a contributing factor to students' attitudes toward physical education (Albinson, 1979; Van Wersch, Trew, and Turner, 1992). While early maturers may have an advantage in size and strength in many physical activities, these same characteristics may lead to feelings of embarrassment or feelings of being different. Late maturers, especially boys, may feel intimidated in the sporting situation.

Earl and Stennett (1983) found that embarrassment about skill level and dislike of coeducational physical education were reasons given by girls, more so than boys, and by grade 9 and 10 students for not being interested in physical education. Fox and Biddle (1989a) support this finding and cite a study which found that girls often associated physical education experiences with feelings of discomfort and embarrassment and that they disliked factors dealing with showers, changing, and gym clothes. Negative memories of physical education included feeling stupid and incompetent and receiving negative feedback from peers.

Summary

From the literature reviewed, it appeared quite evident that there were many influences impacting upon students' attitudes toward physical education and upon the decisions students made concerning participation in physical activity as it was experienced in their physical education programs. The findings suggested that participation levels dropped off as students progressed through the schools and this was more so for girls than for boys. The literature on the traditionally masculine connotation of physical education, which focuses upon competition and aggression, may be an influence on declining participation and this may be especially detrimental to the participation of female students.

The literature on the physical education curriculum lends support to the previous point in that the emphasis tends to be upon competitive team sports and winning often takes precedence over participation. When such is the case, students tended to express negative attitudes toward physical education. This finding was more so for female students than it was for male students.

Teacher attributes were seen to be a potential determinant of both positive and negative attitudes toward physical education. Positive attributes included friendly, understanding, well-organized, focused on learning, and

having high expectations. Negative attitudes included not understanding, rude, and too demanding.

Teaching methodologies also were seen to be a determinant of both negative and positive attitudes. A key feature was the provision for student involvement in the decision making process. When students were involved in decision making, they expressed positive attitudes toward physical education. When they were not involved in the decision making process, students expressed more negative attitudes toward physical education. Differential treatment of males and females and of highly skilled and lower skilled students also appeared to influence student perceptions of teaching methodologies.

The literature on the influence of adolescent changes upon student attitudes toward physical education suggested that the rapid changes in physical, physiological, and sexual characteristics and the self consciousness experienced by many adolescents may be a contributing factor to students' attitudes toward physical education.

While students tend to recognize the benefits gained from active participation in physical education, the status of physical education in relation to other subjects appears to be an influence on participation levels and upon students' attitudes towards physical education. Physical education programs are often viewed as being of lesser importance than other school disciplines.

While many studies have been undertaken in this area at the secondary school and college levels, the review of literature suggests a need for the study of attitudes at the intermediate school level.

Chapter III

Methodology

Introduction

The primary focus of the study was to examine the attitudes of intermediate school students toward physical education, and to ascertain if there are differences in students' attitudes toward specific aspects of the physical education program. The specific aspects which were examined included (a) the connotation of sport and/or exercise as being masculine or feminine in nature, (b) teacher attributes, (c) teaching methodologies, (d) the status of physical education, (e) the physical education curriculum, (f) the perceived benefits of physical education, and (g) individual adolescent disturbances.

A second focus of the study was to ascertain whether there was a relationship between students' self-perceptions of body build, fitness level, and/or sports ability and their attitudes toward physical education.

The third focus of the study was to ascertain whether the gender of the physical education teacher and/or the class-grouping, as co-educational or single-sex, were related to student attitudes toward physical education.

The Physical Education Attitude Questionnaire was designed by the researcher and was used to gather the data

necessary to address the above concerns. The data were obtained by surveying students in the intermediate schools in St. John's, Newfoundland. A sample was chosen from those students taking physical education in grades 7, 8, and 9 during the spring of 1994. Students in these grades would be aged 12 to 15 years. A description of the sample and how it was selected is presented in the section of this chapter entitled "Sample".

Instrument Development

The Physical Education Attitude Questionnaire was developed by the researcher. The items included were developed making use of (a) relevant literature in the area, (Edgington, 1965; Earl and Stennett, 1983; Van Wersch, Trew, and Turner, 1992), (b) the opinions of experienced physical education teachers, and (c) the researcher's own background which includes 16 years experience teaching physical education at the intermediate school level. The study by Van Wersch et. al. was used as a primary source in determining and describing some of the various aspects of the physical education program which were examined in the present study.

The Calgary Board of Education (1978) developed a curriculum model which clearly articulated the aims and objectives of physical education. It has been used by several Canadian provinces, including Newfoundland and Labrador, in

the development of provincial aims and objectives for physical education. It states that:

> As an integral part of the total education program, Physical Education contributes to the physical, mental, social, and emotional development of the child. This is achieved through the medium of carefully selected physical activities carried on under skilled leadership and in adequate facilities.

The objectives of physical education flow from this general aim and are directed towards providing students with the opportunity to develop:

1.) physical skills which will enable participation in a wide variety of skills
2.) physical fitness and soundly functioning body systems for an active life in his/her environment
3.) knowledge and understanding of physical and social skills, physical fitness, scientific principles of movement, and the relationship of exercise to personal well-being
4.) social skills which promote acceptable standards of behavior and positive relationships with others
5.) attitudes and appreciations that will encourage participation in and enjoyment of physical activity, fitness, and quality performance, a positive self-concept, and respect for others

On the basis of the knowledge gained from the foregoing sources, the researcher contends that the aim of physical education programs at the intermediate school level is to use carefully selected activities to contribute to the social, emotional, intellectual, moral, and physical development of students. The initial items considered for the instrument were prepared with the intent to reflect attitudes toward the commonly accepted objectives of physical education and toward the extent to which they are achieved.

A second dimension to the development of the questionnaire was the need to establish the criteria necessary to motivate students to participate in physical education classes. In selecting the items to be used, consideration was given to the characteristics of physical education programs which adolescents view as being favorable or unfavorable in promoting active participation in physical education.

Fitness Canada and the Canadian Council on Children and Youth conducted an investigative project to examine activity programs which were available to Canadian youth and the activities which they preferred. The study (Canadian Council on Children and Youth, 1985) found that young people want activities which offer adventure and challenge, and which emphasize fun, participation, and social aspects.

Gould, as cited in Fox and Biddle (1989a), prioritized the six most common reasons given for participating in

physical activity as (1) to have fun, (2) to improve skills and to learn new skills, (3) to be with friends and make new friends, (4) for thrills and excitement, (5) to succeed or win, and (6) to become physically fit.

Reasons which have been given for ceasing participation in physical education activities include lack of fun, lack of playing time, little opportunity for skill development, and too much emphasis on winning and competition (Fox and Biddle, 1989a). Dislike of teaching methods, the choice of activities, and the low status of physical education in relation to academic subjects have also been seen as contributing to the decrease in participation levels (Evans, 1984; Earl and Stennett, 1983).

A panel of five experienced teachers in the field of physical education were asked to analyze each item in the instrument and to state whether, in their opinion, the item belonged in the subscale to which it had been assigned. Only those items which were unanimously agreed upon were retained in the instrument. A professor in the faculty of education then reviewed the instrument and made suggestions regarding the wording of statements. Of the 121 statements which were generated, 64 were retained and included in the first draft of the Physical Education Attitude Questionnaire.

In addition to the analysis by the physical education teachers and by the university professor, students were

involved in the selection of the items included in the Physical Education Connotation Subscale. Five male and five female students who were identified as "athletes" and five male and five female students who were identified as "non-athletes" responded to items considered for the Physical Education Connotation Subscale. Those items which indicated a dichotomy in responses based upon the masculine or feminine nature of the activity, rather than a dichotomy based upon the gender of the student, were retained in the Physical Education Attitude Questionnaire.

Scoring of the questionnaire was done using a modified Likert scale. The Likert technique uses five possible responses for each attitude statement. They include strongly agree, agree, undecided, disagree, and strongly disagree. The researcher eliminated the neutral response as it was felt that subjects would tend to overuse that response. The modified scale assigned each statement a value on a four point scale. The items on the questionnaire which were negatively stated (agreement indicating a negative attitude toward physical education) were recoded. All items were scored from 1 to 4 with a low (1) score indicating a positive attitude towards physical education, while a high score (4) indicated a negative attitude towards physical education.

The items comprising the Physical Education Attitude Questionnaire were grouped to form eight scales. These scales

were designed to correspond to the specific aspects of the physical education program which were under investigation and to the specific research questions stated in the first chapter. The Physical Education Connotation scale measured the degree to which students viewed physical education as having a masculine or feminine connotation. The degree to which students viewed teacher characteristics as being favorable or unfavorable was measured by the Teacher Attribute scale and the students' expressed satisfaction or dissatisfaction with teacher methodologies in teacher-student interactions was measured by the Teaching Methodology scale. The Physical Education Curriculum scale measured students' satisfaction or dissatisfaction with components comprising physical education classes, which tended to be set in a competetive environment and with an emphasis on traditional team games. The Benefits scale was designed to measure the degree to which students recognize the benefits derived from participation in physical education classes. The degree to which students felt disturbances resulting from the various changes associated with adolescent maturation and development were assessed with the Adolescent Disturbances scale. The Physical Education Specific Interest scale measured students' willingness to participate in, and enjoyment of, physical education. Cronbach's Coefficient Alpha was used to determined the reliability of the scales.

The last page of the survey instrument was used to gather general demographic information which included age, sex, grade level, physical education teacher's sex, and class grouping. The students' perceived body build was assessed by their responses to the question " For your age group, how would you rate your body build?" The responses were scored from "1" to "3" on the choices of "over size", "average", and "under size". Students' perceived fitness level was assessed by their responses to the question "For your age group, how would you rate your level of fitness?" The responses were scored from "1" to "4" on the choices of "in top condition", "in good condition", "in fair condition", and "in poor condition". Students' perceived ability in sports was assessed by their responses to the question "For your age group, how would you rate your ability in sports?" The students' responses were scored from "1" to "5" on the choices of "excellent at sports", "good at sports", "average at sports", "fair at sports", and "poor at sports".

Pilot Study

Upon the completion of the first draft of the survey instrument, a pilot study was conducted using one class at each of the grade 7, 8, and 9 levels at one intermediate school which was not part of the study sample. The purpose of the pilot study was to determine if problems existed with

regards to language, possible ambiguities or lack of statement clarity, and the time needed to complete the questionnaire (Converse and Presser,1986; Clark and Schobert,1992).

As a result of the pilot study, it was determined that two items on the general information page lacked clarity for students. "Teacher Sex" was often interpreted as meaning the homeroom teacher rather than the physical education teacher and a rewording of the item as "PE Teacher Sex" was used for clarity. The choices under "Class Grouping" as "single-sex" and "co-ed" also seemed confusing for students and this item was restructured with the choices of "all boys", "all girls", and "boys and girls" for clarity.

The pilot study determined that it would take 30 minutes for all students to complete the survey.

Sample

Using fairly exact figures, it was determined that, of the 7300 students enrolled at the intermediate school level in St. John's during the 1993-94 school year, 4498 students were under the jurisdiction of the Roman Catholic School Board for St. John's, 2496 were under the Avalon Consolidated School Board, and 194 were under the Pentecostal School system in the St. John's area. The total population of students was fairly equally divided by grade, age, and sex for each school board. The numbers were approximated for the 1993-94 school year

based on the figures reported in Education Statistics for 1992-93 (Government of Newfoundland and Labrador, 1992-93) for grades six, seven and eight for that year. The survey sample was selected to be representative of this target population.

There were six schools selected for the survey. Three schools were under the jurisdiction of the Roman Catholic system and eighteen classes were surveyed; two schools were from the Avalon Consolidated system and twelve classes were surveyed; one school was from the Pentecostal school system and three classes were surveyed. All schools were in the St. John's area, had a similar population size, and all grade levels were in the same building and not a part of a high school population.

The results of the sample survey should estimate the real values present in the target population. To ensure the reliability of the estimate, the researcher followed the methodologies suggested by Clark (1976) and determined that a sample size of 750 was necessary for a target population of 7200 in order to get a confidence level of 95 percent with a confidence interval of plus or minus 4 percent. The confidence level indicates the probability that the real value in the target population will be found within the upper and lower limits of this confidence interval.

Procedures

Upon receiving the approval of the Faculty of Education's Ethics Review Committee to conduct the study, the researcher contacted the Superintendents of the school boards, which were targeted for the study, to request permission to survey students in the schools under their jurisdiction. The letter of request included a brief, precise description of the purpose for the study, and a statement emphasizing the importance of their participation to its success. Included with the letter of request were copies of the survey instrument, the parental/guardian consent form, the proposed letter to principals, and the proposed letter to colleagues who would be assisting in the administration of the survey. A copy of the information which was presented to the superintendents was also sent to the physical education coordinators at these school boards.

Following the compliance of the superintendents to the undertaking of the survey within their schools and preceding the letter to principals, telephone discussions were held with the physical education coordinators of the Roman Catholic and Avalon Consolidated school boards to discuss the schools which the researcher had randomly selected, from those which fit within the sample selection guidelines, and proposed to involve in the study. This was necessary to control for such things as the number of classes per cycle, compulsory physical

education classes, and the availability of physical education specialist teachers. With the exception of one school under the Avalon Consolidated system, which was eliminated from the study and replaced with another randomly selected school from that system, all schools matched on these points. There was only one school under the jurisdiction of the Pentecostal school board in St. John's and discussions were held with the principal, following the initial contact by letter, to clarify the above mentioned points.

The letter to the principals of those schools selected for the study was similar in format and content to the one directed to the superintendents and asked for the cooperation of the principals, in coordination with the physical education teacher(s), in the administration of the survey in their schools. The researcher sought permission to survey students in a total of six classes, two at each grade level. The principal of the Pentecostal school was asked for permission to survey three classes with one class from each grade level.

Through telephone discussions and personal interviews with the physical education teachers and/or school principals, the procedures to be followed in the administration of the survey were outlined. It was requested that the survey not be completed in physical education periods as missing their physical education class could have a negative effect on student responses. Principals were asked to randomly select

the classes to be involved in the study. In their selection, they were asked to omit any classes which had been grouped for specific academic purposes. This was requested to ensure that the classes selected were heterogeneously grouped and would be representative of the total school population. Following the selection of classes, principals were asked to distribute a copy of the letter to colleagues, which the researcher had provided in sufficient number, to those teachers who would be directly involved in the study.

The letter to colleagues outlined the specific tasks the teacher was being asked to undertake. These included: (1) the distribution and collection of parental/guardian consent forms, (2) the administration of the survey during one class period, and (3) the return of the completed questionnaires and consent forms, in the envelope provided, to the principal or physical education teacher.

The researcher personally delivered and picked-up all materials pertaining to the study. On the basis of discussions with school principals, the researcher decided that an average class size was approximately 32 pupils. In accordance with this number, six class sets of 32 parental/guardian consent forms and Physical Education Attitude Questionnaires, with two extra copies in each class set, were delivered to five of the schools involved in the study and three class sets were delivered to the sixth school. The parental/guardian consent

forms were presented in duplicate and stapled together with one form to be retained by the parent or guardian and the second to be signed and returned to the teacher who had distributed it. Only those students who returned the signed parental/guardian consent form completed a questionnaire.

The researcher outlined the schedule for the administration of the survey, which was the same for each school, to the principals of the schools involved in the study and they agreed with this schedule. Parental/guardian consent forms were to be distributed to students and were to be returned within three days. The questionnaires were completed on the following day. The study was conducted between April 25th and May 6th of 1994. A total of 748 questionnaires were completed by students, for a response rate of 71 percent, with 726 being retained for analysis.

Twenty-two questionnaires were not retained for analysis. The reason for their omission fell into one of three categories, which included: a) the items were completed incorrectly by students such that two responses were circled, b) the "General Information" page was not completed and, as a result, the data could not be analyzed according to the student variables indicated in the study, c) the respondent's age placed the student outside the study's age parameters.

Data Analysis

Analyses were carried out through use of the Statistical Package for the Social Sciences for Personal Computer (SPSS-PC). Cronbach's Coefficient Alpha was used as a test of the reliability of the scales of the questionnaire. The general demographic information was analyzed using descriptive statistics and is displayed in the form of a frequency distribution table.

Analysis of variance refers to a variety of statistical analysis techniques used to assess the significance of differences among means using methods which divide the variation observed into several components (Ferguson, 1981). Analysis of variance was used to assess the significance of differences between and among two or more groups in relation to the individual factors under investigation in the study.

Borg and Gall (1983, p.596) define multiple regression as " a multivariate technique for determining the correlation between a criterion variable and some combination of two or more predictor variables". In this study, a multiple regression analysis was used to identify which factor, or combination of factors was significant in relation to the research questions and used "Specific Interest in Physical Education" as the criterion variable.

Summary

This chapter has given an overview of the methods employed in conducting the study on student attitudes toward physical education. It has provided detailed descriptions on the development of the instrument used to survey student attitudes, the pilot study, the sample selection, the procedures followed to complete the study, and the statistical analyses which were used to analyze the data which was gathered.

A comprehensive overview of the analysis of data is examined in Chapter IV; Results and Discussion.

Chapter IV

Analysis of Data

Introduction

A total of 726 questionnaires was completed by students enrolled in grades 7, 8, and 9 in the schools under the jurisdiction of the three major school boards in St.John's. A total of six schools was involved in the study including three from the Roman Catholic school system, two from the Avalon Consolidated school system, and one from the Pentecostal school system.

Analyses of the data collected were carried out through the use of the Statistical Package for the Social Sciences for Personal Computer (SPSS-PC), in accordance with the procedures outlined in Chapter III and were examined in reference to the research questions stated in Chapter I.

The results of the statistical analysis on the reliability of the scales of the Physical Education Questionnaire are presented first. This is followed by the results of the Pearson product-moment correlations between attitudes toward physical education, as measured by the Physical Education Specific Interest scale, and each of the other seven scales of the Physical Education Attitude Questionnaire. Frequency distribution tables present the general demographics for students by age, grade, gender,

class grouping, and teacher gender. Analysis of variance was computed for each research question and is presented in the order in which the research questions were outlined in Chapter 1.

Reliability of Scales

Borg and Gall (1983) stated that reliability " may be defined as the level of internal consistency or stability of the measuring device over time" (p.281). The nature of the research in which the measure of reliability will be used, to a large extent, determines the level of reliability which the researcher should expect from the measure.

The reliability of a measuring device is usually expressed as a coefficient which reflects the extent to which a measure is free of error variance. Reliability coefficients vary from a value of .00, indicating no reliability, to 1.00 which indicates perfect reliability. Borg and Gall (1983) indicate that the more closely the reliability coefficient is to the value of 1.00, "the more the test is a measure of the true differences among persons in the dimensions assessed by the test" (p.283).

Borg and Gall (1983) cite Helmstadter in providing a table to indicate the range and median values of reliabilities reported for various types of measures. This table indicates that the value of reported reliabilities for attitude scales

ranges from a coefficient of .47 having a low value to a coefficient of .98 having a high value. A reliability coefficient of .79 is the median value of reported reliabilities for attitude scales.

Cronbach's Coefficient Alpha, a commonly used method of computing internal consistency when items are not scored dicohotomously, was used by the researcher to compute the reliability of the scales of the Physical Education Attitude Questionnaire. The scales of the questionnaire and their corresponding alpha coefficients are presented in **Table 1.** The coefficients indicate that the scales are a good measure of the true differences in students' attitudes toward physical education.

Pearson Product- Moment Correlations

Pearson product-moment correlations were computed between attitudes toward physical education, which was measured by the Physical Education Specific Interest scale, and the other seven scales comprising the Physical Education Attitude Questionnaire. The correlations, which are presented in **Table 2**, showed significant relationships between all scales and attitudes toward physical education. As the results indicate, the strongest relationships are for Physical Education Connotation, Status, Adolescent Disturbances and Curriculum with attitudes toward physical education.

The positive correlations of attitudes toward physical education and the scales of the Physical Education Attitude Questionnaire shows that a positive score on the scale, denoted by a score of 1.00, indicates a positive attitude towards physical education. This relationship is strongest between attitudes toward physical education and the Physical Education Connotation, Status, Adolescent Disturbances, and the Curriculum scales.

An analysis of the data follows.

Table 1.

Research Area Scales Of The Physical Education Questionnaire With Reliability Coefficients.

Research Area Scale	Scale Items	Alpha
P.E. Connotation	2, 6, 7, 19, 29, 48, 57	.6924
Teacher Attributes	1, 14, 26, 35, 63	.7396
Teaching Methodology	9, 25, 42, 43, 44, 50, 52, 56, 59	.7416
Status	4, 10, 18, 32, 33, 36	.8361
Curriculum	3, 11, 12, 15, 20, 21, 30, 38, 39, 44, 54	.7346
Benefits	8, 24, 40, 41, 47, 55, 60, 62, 64	.8615
Adolescent Disturbances	13, 16, 23, 34, 37, 46, 61	.8080
P.E. Specific Interest	5, 17, 22, 27, 28, 58	.8263

NOTE, Items 34, 49, 51, and 53 omitted for improved scale reliability.

Table 2

Correlations Of Specific Interest in Physical Education With Research Area Scales.

Research Area Scale	Cases	Mean	SD	r	Two-Tailed Significance
P.E. Connotation	726	1.754	.443	.683	.000
Teacher Attributes	726	1.875	.587	.364	.000
Status	726	1.862	.710	.661	.000
Curriculum	726	2.022	.399	.549	.000
Benefits	726	1.991	.538	.498	.000
Adolescent Disturbances	726	1.742	.570	.597	.000
Teaching Methodology	726	1.886	.457	.595	.000

Frequency Distributions

The survey sample was selected from those students attending grades seven, eight, and nine in schools under the jurisdiction of the Roman Catholic, Avalon Consolidated, and Pentecostal school boards in St. John's during the spring of 1994. Frequency distribution tables are presented to indicate the general demographics of this survey sample.

Table 3 presents the total number and percent of male and female students at each grade level who participated in the study. **Tables 4** through **6** indicate the number and percent of students by student gender, grade, and age. **Tables 7** through **9** indicate the number and percent of male and female students at each grade level by teacher gender. The total number and percent of male and female students in single-gender and coeducational classes at each grade level in presented in **Table 10.**

Table 3

Number and Percent of Students by Gender and Grade.

	Gender					
Grade	Male	(%)	Female	(%)	Total	%
7	109	(15.0)	101	(13.9)	210	(28.9)
8	150	(20.7)	168	(23.1)	318	(43.8)
9	99	(13.6)	99	(13.6)	198	(27.3)
Total	358	(49.3)	368	(50.7)	726	(100.0)

Table 4

Number and Percent of Grade 7 Students by Gender and Age.

	Grade 7					
Age	Male	(%)	Female	(%)	Total	%
12	54	(25.7)	59	(28.1)	113	(53.8)
13	54	(25.7)	41	(19.5)	95	(45.2)
14	1	(0.5)	1	(0.5)	2	(1.0)
15	-	(0.0)	-	(0.0)	-	(0.0)
Total	109	(51.9)	101	(48.1)	210	(100.0)

Table 5

Number and Percent of Grade 8 Students by Gender and Age.

	Grade 8					
Age	Male	(%)	Female	(%)	Total	%
12	1	(0.3)	-	(0.0)	1	(0.3)
13	70	(22.0)	97	(30.5)	167	(52.5)
14	77	(24.2)	67	(21.1)	144	(45.5)
15	2	(0.6)	4	(1.3)	6	(1.9)
Total	150	(47.1)	168	(52.9)	318	(100.0)

Table 6

Number and Percent of Grade 9 Students by Gender and Age

	Grade 9					
Age	Male	(%)	Female	(%)	Total	%
12	-	(0.0)	-	(0.0)	-	(0.0)
13	1	(0.5)	1	(0.5)	2	(1.0)
14	50	(25.3)	49	(24.7)	99	(50.0)
15	48	(24.3)	49	(24.7)	97	(49.0)
Total	99	(50.1)	99	(49.9)	198	(100.0)

Table 7

Number and Percent of Grade 7 Male and Female Students by Teacher Gender.

		Grade 7		
Group	No.	Male (%)	Female (%)	Total %
Male Teachers	6	90 (42.9)	78 (37.1)	168 (80.0)
Female Teachers	3	19 (9.0)	23 (11.0)	42 (20.0)
Total	9	109 (51.0)	101 (48.1)	210 (100.0)

Table 8

Number and Percent of Grade 8 Male and Female Students by Teacher Gender.

		Grade 8		
Group	No.	Male (%)	Female (%)	Total %
Male Teachers	6	107 (33.6)	110 (34.6)	217 (68.2)
Female Teachers	3	43 (13.6)	58 (18.2)	101 (31.8)
Total	9	150 (47.2)	168 (52.8)	318 (100.0)

Table 9

Number and Percent of Grade 9 Male and Female Students by Teacher Gender.

		Grade 9		
Group	No.	Male (%)	Female (%)	Total %
Male Teachers	6	74 (37.4)	56 (28.3)	130 (65.7)
Female Teachers	3	25 (12.6)	43 (21.7)	68 (34.3)
Total	9	99 (50.0)	99 (50.0)	198 (100.0)

Table 10

Number and Percent of Male and Female Students by Grade and Class Grouping.

Group	Male (%)	Female (%)	Total %
Grade 7			
Single-Gender	43 (20.5)	33 (15.7)	76 (36.2)
Coeducational	66 (31.4)	68 (32.4)	134 (63.8)
Grade 8			
Single-Gender	48 (15.1)	52 (16.4)	100 (31.5)
Coeducational	102 (32.0)	116 (36.5)	218 (58.5)
Grade 9			
Single-Gender	38 (19.2)	39 (19.7)	77 (38.9)
Coeducational	61 (30.8)	60 (30.3)	121 (61.1)

Analysis of Variance

Introduction

The results of the analysis of data are presented in accordance with the purposes of the study and in accordance with the specific research questions stated in Chapter I.

The primary purpose of the study was to examine intermediate school students' attitudes toward physical education, and the influence which various aspects of the physical education program may have on the development of these attitudes. The specific aspects of the physical education programs which were examined included the following:

(a) the connotation of physical education as being masculine or feminine in nature
(b) teacher attributes
(c) teaching methodologies
(d) the status of physical education
(e) the physical education curriculum
(f) the perceived benefits of physical education
(g) individual adolescent disturbances, and
(h) specific interest in physical education

Research questions one through eight addressed the concerns of the primary purpose for the study and included:

(1) Are there differences in the attitudes of male and

female students in grades 7, 8, and 9 and between the ages of 12 to 15 toward physical education?

(2) Are there differences in students' attitudes toward physical education in relation to the degree to which they view physical education as having a masculine or feminine connotation?

(3) Are there differences in students' attitudes toward physical education in relation to the degree to which they view the attributes of the physical educator as favorable or unfavorable?

(4) Are there differences in students' attitudes toward physical education in relation to their expressed satisfaction or dissatisfaction with the physical educators' teaching methodologies?

(5) Are there differences in students' attitudes toward physical education in relation to their view of the status of physical education in comparison to other subjects?

(6) Are there differences in students' attitudes toward physical education in relation to their expressed satisfaction or dissatisfaction with the physical education curriculum?

(7) Are there differences in students' attitudes toward physical education in relation to the degree to

which they recognize the benefits of participating in physical education?

(8) Are there differences in students' attitudes toward physical education in relation to the degree to which they experience disturbances caused by their adolescent maturation and development?

An analysis of variance was computed for each research question, in relation to the specific aspects of the physical education program investigated, by student age, gender, and grade. A table of results is presented for each analysis of variance with tables indicating the mean scores for those analyses which indicated significant differences in students' responses. The Student Newman-Keuls procedure was used to establish where these significant differences were to be found. Product-moment correlations were computed to establish the strength of the relationship between the variables being studied. A multiple regression analysis was also computed with specific interest in physical education as the criterion variable and the other seven aspects of the physical education program as the predictor variables.

A second focus of the study was to ascertain whether the gender of the physical education teacher and/or the class-grouping, as coeducational or single-gender, influenced students' attitudes toward physical education.

Research questions nine and ten addressed these issues and were stated as follows:

(9) Are differences in students' attitudes toward physical education in relation to participation in co-educational versus single-gender physical education classes?

(10) Are there differences in students' attitudes toward physical education in relation to being taught by a teacher of the same gender versus being taught by a teacher of the opposite gender?

Analysis of variance of each of the aspects of the physical education program by teacher gender and student gender were computed for question nine to determine the two-way interactions of these variables. Analysis of variance of each aspect of the physical education program by class grouping was used to address question ten. When significant differences in students' responses were indicated, the Student Newman-Keuls procedure was used to establish where these significant differences existed.

The third focus of the study was to ascertain whether there were difference in students' self-perceptions of body build, fitness level, and/or sports ability and their attitudes toward physical education. Research questions 11

through 13 addressed these points and were stated as follows:

(11) Are there differences in students' attitudes toward physical education in relation to self-perceptions of their body build?

(12) Are there differences in students' attitudes toward physical education in relation to self-perceptions of their level of fitness?

(13) Are there differences in students' attitudes toward physical education in relation to their self-perceptions of their ability in sports?

An analysis of variance was computed for each aspect of the physical education program under investigation by perceived body build, fitness level, and sports ability. When significant differences in students' responses were indicated, the Student Newman-Keuls procedure was used to establish where these significant differences existed. Product-moment correlations using a two-tailed test of significance were used to establish the strength of the relationship between the variables being studied.

Physical Education Specific Interest

The first research question asked: Are there differences in the attitudes of male and female students in grade 7, 8, and 9 and between the ages of 11 to 15 toward physical

education? The Physical Education Specific Interest Scale was used in the analysis of variance to determine whether the differences in students' responses by gender, grade, and age on their specific interest in physical education were an important factor in explaining some of the differences in students' attitudes toward physical education.

As **Table 11** indicates, the differences in the responses of students on their specific interest in physical education were significant by student gender ($p<.001$) and grade level ($p<.01$). **Table 11** also indicates that the two-way interaction of student gender and grade on specific interest in physical education was significant ($p<.05$). The differences in students' responses to their specific interest in physical education were an important factor in explaining students' attitudes toward physical education.

Table 11

Analysis of Variance of Physical Education Specific Interest by Student Gender and Grade

Source of Variation	SS	DF	MS	F	P
Main Effects	20.386	3	6.795	19.000	.000
Gender	15.216	1	15.216	42.543	.000
Grade	4.526	2	2.263	6.327	.002
2-Way Interactions	3.306	2	1.653	4.622	.010
Gender Grade	3.306	2	1.653	4.622	.010

A post hoc analysis was conducted to examine possible significant differences ($p \leq .05$) between grade levels on mean specific interest in physical education scores. The Student Newman-Keuls procedure showed that the differences between these mean scores in relation to student grade levels were significant. The grade 7 mean interest scores were statistically different from those of grades 8 and 9 ($p \leq .05$). The difference in the mean scores on specific interest in physical education between grade 8 and 9 students was not significant ($p > .05$).

Table 12

Mean Physical Education Specific Interest Scores by Student Gender and Grade

	Grade			
Gender	7	8	9	Combined
Male				
cases	110	150	99	359
mean	1.58	1.61	1.61	1.60
Female				
cases	100	168	99	367
mean	1.66	2.00	1.97	1.90
Combined				
cases	210	318	198	726
mean	1.62	1.82	1.79	1.75

Table 12 indicates that, in relation to specific interest in physical education, students have positive attitudes toward physical education (m=1.75). Grade 7's have the most positive attitudes toward physical education while grade 8's have the least positive attitudes. The attitudes of grade 9 students are similar to those of the grade 8 students.

Table 13 shows the results of the analysis of variance of specific interest in physical education by gender and age. There were significant differences in students' responses to specific interest in physical education by gender ($p<.001$) and by age ($p<.01$). The two-way interaction of gender and age also was significant ($p<.01$).

Table 13

Analysis of Variance of Physical Education Specific Interest by Student Gender and Age

Source of Variation	SS	DF	MS	F	P
Main Effects	20.373	4	5.093	14.274	.000
Gender	16.520	1	16.520	46.298	.000
Age	4.265	3	1.422	3.984	.008
2-Way Interactions	5.536	3	1.845	5.172	.002
Gender Age	5.536	3	1.845	5.172	.002
Explained	25.909	7	3.701	10.373	.000

The mean scores for specific interest in physical education by gender and age are presented in **Table 14**. The Student Newman-Keuls procedure indicated that the combined mean score (M= 1.62) of 12 year olds was statistically different ($p \leq .05$) from the combined mean score (M= 1.81) of 14 year olds on specific interest in physical education.

Table 14

Mean Physical Education Specific Interest Scores by Student Gender and Age

	Age				
Gender	12	13	14	15	Combined
Male					
cases	55	125	128	50	358
mean	1.65	1.54	1.66	1.50	1.60
Female					
cases	58	139	117	53	367
mean	1.58	1.89	1.99	2.09	1.90
Combined					
cases	113	264	245	103	725
mean	1.62	1.72	1.81	1.83	1.75

While the responses of male students were more positive than female students across age groups, this was not true for 12 year old students. For this age group, the responses of female students were more positive towards specific interest in physical education than were the responses of male students.

Product-moment correlations, using a two-tailed test of significance, indicated positive relationships between specific interest in physical education and student gender ($r=.1172$, $p<.01$), between specific interest in physical education and grade level ($r=.1082$, $p<.01$), and between specific interest in physical education and age ($r=.1082$, $p<.01$).

The attitudes of male students toward physical education appear to remain fairly stable across the grade and age levels. The attitudes of female students toward physical education were consistently not as positive as those of male students at each grade and age level. The exception to this finding was for 12 year old students. Younger females reported more positive attitudes toward specific interest in physical education than did younger males.

The greater decline in positive attitudes for female students occurred in grade 8 and remained at a similar level in grade 9. These findings, examined in conjunction with the

findings of the Newman-Keuls Procedure, suggest that the differences in the mean attitudes scores across grade levels may apply to female students more so than male students at those grade levels.

Physical Education Connotation

Research question two asked: Are there differences in students' attitudes toward physical education in relation to the degree to which they view physical education as having a masculine or feminine connotation? The Physical Education Connotation Scale was used in the analysis of variance to determine whether the differences in students' responses by gender, grade and age on their attitudes toward the connotation of physical education were an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 15 indicates that the differences in the responses of male and female students on their views of physical education as having a masculine or feminine connotation were significant $p<.001$). The differences in students' responses to the connotation of physical education were an important factor in explaining the differences in male and female students' attitudes toward physical education.

A product-moment correlation, with a two-tailed test of significance, indicated a positive relationship ($r=.2885$, $p<.01$) between the connotation of physical education and student gender.

Table 15

One-way Analysis of Variance of Connotations of Physical Education by Student Gender

Source	DF	SS	MS	F	P
Between Groups	1	11.6946	11.6946	64.7124	.0000
Within Groups	723	130.6579	.1807		
Total	724	142.3525			

Table 16 indicates that the connotation of physical education influenced student attitudes toward physical education. The mean scores indicate that males more strongly agreed with the connotation of physical education than did female students. Male students expressed more positive attitudes towards the traditional masculine connotations of competitiveness and aggressiveness than did female students and indicated more positive attitudes towards physical education.

Table 16

Mean Connotation of Physical Education Scores by Student Gender

Gender	Mean	SD	SE	Cases
Male	1.6253	.4038	.0213	358
Female	1.8793	.4449	.0232	367
Total	1.7539	.4434	.0165	725

Table 17

One-way Analysis of Variance of Connotation of Physical Education by Grade

Source	DF	SS	MS	F	P
Between Groups	2	1.0452	.5226	2.6710	.0699
Within Groups	720	140.8720	.1957		
Total	722	141.9171			

Table 17 indicates that the differences in students' responses by grade level on their views of physical education

as having a masculine or feminine connotation were not a significant factor (p>.05) in explaining students' attitudes toward physical education.

Table 18 indicates that the differences in students' responses by age on their views of the connotation of physical education were not a significant factor (p>.05) in explaining attitudes toward physical education. While gender was a significant factor (**Table 15**), the two-way interaction of gender and age was not significant (p>.05).

Table 18

Analysis of Variance Of Connotation of Physical Education by Student Gender and Age

Source of Variation	SS	DF	MS	F	P
Main Effects	12.607	4	3.152	17.551	.000
Gender	11.794	1	11.794	65.680	.000
Age	.912	3	.304	1.693	.167
2-Way Interactions	.996	3	.332	1.849	.137
Gender Age	.996	3	.332	1.849	.137
Explained	13.603	7	1.943	10.822	.000

Teacher Attributes

The third research question asked: Are there differences in students' attitudes toward physical education in relation to the degree to which they view the attributes of the physical educator as favorable or unfavorable? The Teacher Attribute Scale was used in the analysis of variance to determine whether the differences in students' responses by gender, grade, and age on their view of teacher attributes as being favorable or unfavorable were an important factor in explaining some of the differences in the responses of students' attitudes toward physical education.

As **Table 19** indicates, the differences in students' responses to teacher attributes were significant ($p<.05$) across grade levels. The differences in the responses of students' at different grade levels on their view of teacher attributes as being favorable or unfavorable were an important factor in explaining differences in students' attitudes toward physical education.

Table 20 indicates that grade 9 students agreed more positively with teacher attributes than did students in grade 7 and 8. The views of grade 7 and 8 students were similar and did not agree as favorably with teacher attributes as did those of the grade 9 students.

Table 19

One-way Analysis of Variance Of Teacher Attribute by Grade

Source	DF	SS	MS	F	P
Between Groups	2	2.3300	1.1630	3.3978	.0340
Within Groups	720	246.8666	.3429		
Total	722	249.1967			

Table 20

Mean Teacher Attribute Scores by Grade

Grade	Mean	SD	SE	Cases
7	1.9206	.6300	.0436	209
8	1.9032	.5962	.0335	316
9	1.7838	.5155	.0366	198
Total	1.8755	.5875	.0218	723

The Student Newman-Keuls procedure was performed to examine significant differences ($p \leq .05$) between pairs of grade levels on mean teacher attributes scores. The results indicate that the mean scores of grade 7 and 8 students and for grade 7 and 9 students were not significantly different ($p > .05$). The means scores of grade 8 students were significantly different ($p < .05$) from the mean scores of grade 9 students.

Table 21 indicates that the differences in students' responses to teacher attributes as being favorable or unfavorable were an important factor in explaining differences between male and female students' attitudes toward physical education. The differences in the responses of male and female students toward teacher attributes were significant ($p < .01$).

The mean scores for male and female students on their views of the physical education teacher's attributes as being favorable or unfavorable are presented in **Table 22**. The means indicate that male students agreed more positively with the attributes of the physical education teacher than did female students.

Table 21

One-way Analysis of Variance of Teacher Attributes by Student Gender

Source	DF	SS	MS	F	P
Between Groups	1	2.4710	2.4710	7.2311	.0073
Within Groups	723	247.0571	.3417		
Total	724	249.5281			

Table 22

Mean Teacher Attributes Scores by Student Gender

Gender	Mean	SD	SE	Cases
Male	1.8162	.5644	.0298	358
Female	1.9330	.6036	.0315	367
Total	1.8753	.5871	.0218	725

Table 23 presents the findings of the analysis of variance of teacher attributes by students' gender and age. While the differences in students' responses by gender were significant ($p<.01$), the differences in responses by age and by the two-way interaction of gender and age were not significant ($p>.05$).

Table 23

Analysis of Variance of Teacher Attributes by Student Gender and Age

Source of Variation	SS	DF	MS	F	P
Main Effects	3.697	4	.924	2.706	.029
Gender	2.377	1	2.377	6.959	.009
Age	1.226	3	.409	1.196	.310
2-Way Interactions	.897	3	.299	.875	.453
Gender Age	.897	3	.299	.875	.453
Explained	4.594	7	.656	1.921	.064

Teaching Methodology

Research question four asked: Are there differences in students' attitudes toward physical education in relation to

their expressed satisfaction or dissatisfaction with the physical educators' teaching methodologies?' The Teaching Methodology Scale was used in the analysis of variance to determine if the differences in students' responses by gender, grade, and age on their level of satisfaction with teaching methodologies were an important factor in explaining the differences in students' attitudes toward physical education.

Table 24 indicates that the differences in male and female students' responses to teaching methodology were not significant ($p>.05$). Teaching methodology was not an important factor in explaining the differences between male and female students' attitudes toward physical education.

Table 24

One-way Analysis of Variance of Teaching Methodology by Student Gender

Source	DF	SS	MS	F	P
Between Groups	1	.6692	.6692	3.2180	.0732
Within Groups	723	150.3376	.2079		
Total	724	151.0068			

Table 25 presents the results of the one-way analysis of variance of teaching methodology by student grade. The findings indicate that the differences in the responses of students in grades 7, 8, and 9 were not significant ($p>.05$) in relation to their satisfaction with the teaching methodologies in physical education.

Table 25

One-way Analysis of Variance of Teaching Methodologies by Grade

Source	DF	SS	MS	F	P
Between Groups	2	.0803	.0401	.1923	.8251
Within Groups	720	150.2653	.2087		
Total	722	150.3456			

As presented in **Table 26**, the one-way analysis of variance of teaching methodologies by student age found no significant difference in the responses of students of the different age groups in their level of satisfaction with the teaching methodologies in physical education.

Table 26

One-Way Analysis of Variance of Teaching Methodology by Student Age.

Source	DF	SS	MS	F	P
Between Groups	3	.3200	.1067	.5104	.6752
Within Groups	722	150.8816	.2090		
Total	725	151.2016			

Status

The fifth research question asked: Are there differences in students' attitudes toward physical education in relation to their view of the status of physical education in comparison with other subjects? The Status Scale was used in the analysis of variance to determine whether the differences in students' responses by gender, grade, and age on the degree to which students view physical education as an equivalent or lower status subject in comparison with other subjects were important in explaining some of the differences in students' attitudes toward physical education.

As **Table 27** indicates, the differences in the responses of male and female students on their views of the status physical education in relation to other subjects were

significant ($p<.001$). The differences in students' responses to the status of physical education were an important factor in explaining the differences between male and female students' attitudes toward physical education.

The mean scores for male and female students on their views of the status of physical education in relation to other subjects are presented in **Table 28.** Males agreed more strongly than did females with the status of physical education as being equivalent to that of other subjects.

Table 27

One-way Analysis of Variance of Status by Student Gender

Source	DF	SS	MS	F	P
Between Groups	1	21.0649	21.0649	44.2215	.0000
Within Groups	723	344.4005	.4763		
Total	724				

Table 28

Mean Status Scores by Student Gender

Gender	Mean	SD	SE	Cases
Male	1.6899	.6113	.0323	358
Female	2.0309	.7592	.0396	367
Total	1.8625	.7103	.0264	725

The results of the one-way analysis of variance of the status of physical education by grade level are presented in **Table 29** and the mean scores of grade 7, 8, and 9 students are presented in **Table 30**. These results indicate that the differences in students' responses were significant ($p<.01$).

Table 29

One-way Analysis of Variance of Status by Grade

Source	DF	SS	MS	F	P
Between Groups	2	6.8780	3.4365	6.9308	.0010
Within Groups	720	356.9989	.4958		
Total	722	363.8719			

Table 30

Mean Status Scores by Grade

Grade	Mean	SD	SE	Cases
7	1.7408	.6018	.0416	209
8	1.8513	.7378	.0415	316
9	2.0000	.7480	.0532	198
Total	1.8601	.7099	.0264	723

The Student Newman-Keuls procedure was performed to examine significant differences ($p \leq .05$) between the mean status scores at the different grade levels. The results indicated that the differences in the mean status scores for grade 7 and grade 8 were significantly different ($p < .05$) from the mean score of grade 9. Mean status scores for grade 7 and grade 8 were not significantly different ($p > .05$). The differences in students' responses to the status of physical education across grade levels were an important factor in explaining differences in attitudes toward physical education.

The one-way analysis of variance of the status of physical education by student age is presented in **Table 31** and indicates significant differences ($p<.01$) in the responses of students of the different age groups toward the status of physical education in relation to other subjects.

Table 31

One-Way Analysis of Variance of Status by Student Age.

Source	DF	SS	MS	F	P
Between Groups	3	6.3110	2.1037	4.2233	.0057
Within Groups	722	359.6379	.4981		
Total	725	365.9489			

The Student Newman-Keuls procedure indicated significant differences ($p\leq.05$) in the responses of students aged 12 from those of students aged 13, 14, and 15. The differences in the responses of all other pairs of age groups were not significant ($p>.05$).

The mean status scores for each age group are presented in **Table 32**. Younger students agreed more favorably with the status of physical education in relation to other subjects than did students aged 13 to 15.

Table 32

Mean Status Scores by Student Age.

Age	Mean	SD	SE	Cases
12	1.6901	.5520	.0517	114
13	1.8523	.7273	.0448	264
14	1.8816	.7394	.0472	245
15	2.0275	.7186	.0708	103
Total	1.8616	.7105	.0264	726

Curriculum

Research question six asked: Are there differences in students' attitudes toward physical education in relation to their expressed satisfaction or dissatisfaction with the physical education curriculum? The Curriculum scale was used in the analysis of variance to determine whether the differences in students' responses by gender, grade and age on

their degree of satisfaction or dissatisfaction with the physical education curriculum were an important factor in explaining some of the differences in students attitudes toward physical education.

The differences in the responses of male and female students on their level of satisfaction with the physical education curriculum were an important factor in explaining some of the differences of males and females towards physical education. The results of a one-way analysis of variance of curriculum by student gender are presented in **Table 33**. The differences in male and female responses to their level of satisfaction with the physical education curriculum were significant ($p<.01$). **Table 34** presents the mean curriculum scores for male and female students. Males agreed more strongly with the physical education curriculum than did female students.

Table 33

One-way Analysis of Variance of Curriculum by Student Gender

Source	DF	SS	MS	F	P
Between Groups	1	1.4187	1.4187	9.0039	.0028
Within Groups	723	113.9186	.1576		
Total	724	115.3373			

Table 34

Mean Curriculum Scores by Student Gender

Gender	Mean	SD	SE	Cases
Male	1.9779	.3821	.0202	358
Female	2.0664	.4109	.0214	367
Total	2.0227	.3991	.0148	725

Table 35 shows the one-way analysis of variance of the physical education curriculum by grade level. The findings indicate that the differences in students' responses to the physical education curriculum by grade level were significant ($p<.05$).

Table 35

One-way Analysis of Variance of Curriculum by Grade

Source	DF	SS	MS	F	P
Between Groups	2	.9062	.4801	3.0295	.0490
Within Groups	720	114.1029	.1585		
Total	722	115.0632			

Student-Newman-Keuls procedure examined significant difference ($p \leq .05$) between grade levels on students' responses to the physical education curriculum. The findings indicated that the mean scores for grade 7 and grade 8 were significantly different ($p \leq .05$). The mean scores for 7 and 9 and grades 8 and 9 were not significantly different ($p > .05$). The mean scores for students' responses by grade level to the physical education curriculum are presented in **Table 36.**

Table 36

Mean Curriculum Scores by Grade

Grade	Mean	SD	SE	Cases
7	1.9713	.4068	.0281	209
8	2.0584	.4061	.0228	316
9	2.0174	.3754	.0267	198
Total	2.0220	.3992	.0148	723

Students' responses to the physical education curriculum by grade level were an important factor in explaining some of the differences in students' attitudes toward physical education.

The analysis of variance of curriculum by student gender and age, presented in **Table 37**, indicates that the differences in the responses of male and female students' were significant ($p<.01$), but the differences in their responses across age levels were not significant ($p>.05$). The two-way interaction of grade and age also was not significant. Age was not an important factor in explaining some of the differences in male and female attitudes toward physical education.

Table 37

Analysis of Variance of Curriculum by Student Gender and Age

Source of Variation	SS	DF	MS	F	P
Main Effects	2.196	4	.539	3.493	.008
Gender	1.482	1	1.482	9.431	.002
Age	.777	3	.259	1.649	.177
2-Way Interactions	.441	3	.147	.936	.423
Gender Age	.441	3	.147	.936	.423
Explained	2.637	7	.157		

Table 38

One-Way Analysis of Variance of Curriculum by Student Age.

Source	DF	SS	MS	F	P
Between Groups	1	.2082	.2082	1.3116	.2525
Within Groups	723	114.7447	.1587		
Total	724	114.9529			

Table 38 indicates that the differences in students' responses to the curriculum were not significant ($p>.05$) in relation to students' ages.

Benefits

Research question seven asked: Are there differences in students' attitudes toward physical education in relation to the degree to which they recognize the benefits of participating in physical education? The Benefits Scale was used in the analysis of variance to determine whether the difference in students' responses by gender, grade, and age on the benefits of participating in physical education were an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 39 indicates that there were no significant differences ($p>.05$) in students' responses to the benefits of participation in physical education when examined by student gender and grade.

Table 39

Analysis of Variance of Benefits by Student Gender and Grade

Source of Variation	SS	DF	MS	F	P
Main Effects	2.293	3	.764	2.656	.048
Gender	.989	1	.987	3.435	.064
Grade	1.211	2	.606	2.104	.123
2-Way Interactions	.151	2	.075	.262	.770
Gender Grade	.151	2	.075	.262	.770

Table 40 indicates that, while there were significant differences overall ($p<.05$) in male and female responses to the benefits of participation in physical education, the two-way interaction of student gender and age indicated no significant differences ($p>.05$) in students' responses.

Table 40

Analysis of Variance by Benefits by Gender and Age

Source of Variation	SS	DF	MS	F	P
Main Effects	2.760	4	.690	2.419	.048
Gender	1.142	1	1.142	4.004	.046
Age	1.699	3	.566	1.985	.115
2-Way Interactions	2.006	3	.669	2.344	.072
Gender Age	2.006	3	.669	2.344	.072
Explained	4.766	7	.681	2.387	.020

Table 41 presents the mean scores for benefits of physical education by gender and age. The mean scores indicate that males recognize the benefits of participating in physical education more so than do females. The exception to this is found in the mean scores for 12 year olds where the responses of females agreed more strongly with the benefits of participation in physical education than did male students, but the differences were not at a significant level ($p>.05$).

Table 41

Mean Benefits Scores by Gender and Age.

	Age				
Gender	12	13	14	15	Combined
Male					
cases	55	125	128	50	358
mean	1.98	1.89	2.04	1.87	1.95
Female					
cases	58	139	117	53	367
mean	1.87	2.08	2.07	1.99	2.03
Combined					
cases	113	264	245	103	725
mean	1.93	1.99	2.05	1.94	1.99

The differences in students' responses by grade and age, on the benefits of participation in physical education were not important factors in explaining some of the differences in attitudes toward physical education.

Adolescent Disturbances

Research question eight asked: Are there differences in students' attitudes toward physical education in relation to the degree to which they experience disturbances caused by their adolescent maturation and development? The Adolescent Disturbances Scale was used in the analysis of variance to determine whether differences in the degree to which students feel disturbances caused by their adolescent maturation and development were an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 42 indicates that the differences in male and female responses to feelings of adolescent disturbance were significant ($p<.01$), but the two-way interaction of student gender and grade level was not significant ($p>.05$).

Table 42

Analysis of Variance of Adolescent Disturbances by Student Gender and Grade

Source of Variation	SS	DF	MS	F	P
Main Effects	16.716	3	5.572	18.386	.000
Gender	15.270	1	15.270	50.387	.000
Grade	1.576	2	.788	2.600	.075
2-Way Interactions	.702	2	.351	1.159	.314
Gender Grade	.702	2	.351	1.159	.314

Table 43 presents the mean adolescent disturbances scores for male and female students in grades 7, 8 and 9. While there were no significant differences between the responses of male and female students' of different grade levels, the responses of female students indicated a greater degree of disturbance caused by their adolescent maturation and development than did the responses of male students.

Table 43

Mean Adolescent Disturbances Scores by Student Gender and Grade

Gender	Grade 7	Grade 8	Grade 9	Combined
Male				
cases	109	149	99	357
mean	1.70	1.57	1.51	1.59
Female				
cases	100	167	99	366
mean	1.89	1.90	1.84	1.88
Combined				
cases	209	316	198	723
mean	1.79	1.75	1.68	1.74

Table 44 presents the results of the analysis of variance of adolescent disturbances by student gender and age. While the differences in students' responses to adolescent disturbances by age were not significant ($p>.05$), there were significant differences ($p<.001$) in the responses of male and

female students on the degree to which they experienced adolescent disturbances as a result of the changes associated with adolescent maturation and development. The two-way interaction of gender and age also was significant ($p<.05$).

Table 44

Analysis of Variance of Adolescent Disturbance by Student Gender and Age

Source of Variation	SS	DF	MS	F	P
Main Effects	16.007	4	4.002	13.241	.000
Gender	15.206	1	15.206	50.313	.000
Age	.665	3	.222	.733	.532
2-Way Interactions	2.959	3	.986	3.263	.021
Gender Age	2.959	3	.986	3.263	.021
Explained	18.966	7	2.709	8.965	.000

The means scores for students' responses to feelings of disturbance associated with adolescent maturation and development are presented in **Table 45**. The means for male and female students at each age level indicate that males agree more strongly than females that they do not experience disturbances which are associated with adolescent changes.

Table 45

Mean Adolescent Disturbances Scores by Student Gender and Age

	Age				
Gender	12	13	14	15	Combined
Male					
cases	55	125	128	50	358
mean	1.73	1.59	1.61	1.41	1.60
Female					
cases	58	139	117	53	367
mean	1.82	1.93	1.84	1.94	1.89
Combined					
cases	113	264	245	103	725
mean	1.78	1.77	1.72	1.69	1.74

The findings of the one-way analysis of variance of adolescent disturbances by student age, presented in **Table 46**, indicate no significant differences ($p>.05$) in the responses of students' in relation to students' ages.

Table 46

One-Way Analysis of Variance of Adolescent Disturbances by Student Age

Source	DF	SS	MS	F	P
Between Groups	3	.7792	.2597	.7981	.4951
Within Groups	722	234.9805	.3255		
Total	725	235.7597			

Class Grouping

Research question nine asked: Are there differences in students' attitudes toward physical education in relation to participation in co-educational versus single-gender physical education classes? Each aspect of physical education programs which were being studied was used in an analysis of variance to examine students' responses to each aspect by class-grouping to determine whether the differences in students'

responses were an important factor in examining some of the differences in students' attitudes toward physical education.

Table 47 indicates that the responses of students in coeducational classes on their specific interest in physical education were not significantly different ($p>.05$) from those of students in single-gender physical education classes. Differences in students' responses by class grouping to specific interest in physical education were not an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 47

One-way Analysis of Variance of Specific Interest in Physical Education by Class Grouping

Source	DF	SS	MS	F	P
Between Groups	1	.2601	.2601	.6677	.4141
Within Groups	724	282.0569	.3896		
Total	725	282.3170			

The findings of the one-way analysis of variance of the connotation of physical education are presented in **Table 48.**

These findings indicate that the differences in students' responses to the connotation of physical education by class grouping were not significant ($p>.05$) and that they were not an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 48

One-Way Analysis of Variance of Connotation of Physical Education by Class Grouping.

Source	DF	SS	MS	F	P
Between Groups	1	.0510	.0510	.2596	.6105
Within Groups	724	142.3348	.1966		
Total	725	142.3858			

The results of the one-way analysis of variance of teacher attributes by class grouping are presented in **Table 49** and indicate that the responses of students in coeducational physical education classes on their view of teacher attributes as being favorable or unfavorable were not significantly different ($p>.05$) from the responses of students in single-gender physical education classes. Differences in

students' responses by class grouping to teacher attributes were not an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 49

One-Way Analysis of Variance of Teacher Attributes by Class Grouping.

Source	DF	SS	MS	F	P
Between Groups	1	.2121	.2121	.6152	.4331
Within Groups	724	249.5416	.3447		
Total	725	249.7537			

Table 50 presents the results of the one-way analysis of variance of teaching methodologies by class grouping. The responses of students in coeducational physical education classes on their level of satisfaction with physical education teaching methodologies were not significantly different ($p>.05$) from the responses of students in single-gender physical education classes.

Table 50

One-Way Analysis of Variance of Teaching Methodology by Class Grouping.

Source	DF	SS	MS	F	P
Between Groups	1	.2293	.2293	1.0997	.2947
Within Groups	724	150.9723	.2085		
Total	725	151.2016			

Differences in students' responses by class grouping to the teaching methodologies in physical education were not an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 51 presents the findings of the one-way analysis of variance of the status of physical education by class grouping. The responses of students in coeducational physical education classes on their view of the status of physical education in comparison with other subjects were not significantly different ($p>.05$) from the responses of students in single-gender classes. Differences in students'

responses to the status of physical education when examined by class grouping were not an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 51

One-Way Analysis of Variance of Status by Class Grouping.

Source	DF	SS	MS	F	P
Between Groups	1	.0063	.0063	.0126	.9108
Within Groups	724	365.9426	.5054		
Total	725	365.9489			

The findings of the one-way analysis of variance of curriculum by class grouping, presented in **Table 52**, indicate that the responses of students in coeducational physical education classes were not significantly different ($p>.05$) from the responses of students in single-gender physical education classes. Differences in students' responses to the physical education curriculum, when examined by class grouping, were not an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 52

One-Way Analysis of Variance of Curriculum by Class Grouping.

Source	DF	SS	MS	F	P
Between Groups	1	.5012	.5012	3.1512	.0763
Within Groups	724	115.1584	.1591		
Total	725	115.6596			

Table 53 indicates that the responses of students in coeducational physical education classes on the degree to which they recognize the benefits of participation in physical education were significantly different ($p<.05$) from the responses of students in single-gender physical education classes.

Table 53

One-Way Analysis of Variance of Benefits by Class Grouping.

Source	DF	SS	MS	F	P
Between Groups	1	1.7030	1.7030	5.9229	.0152
Within Groups	724	208.1658	.2875		
Total	725	209.8687			

The mean benefits scores are presented in **Table 54.** The mean scores indicate that students in single-gender physical education classes agreed more positively with the benefits of participation in physical education than did students in coeducational classes. The differences in students' responses by class grouping to the benefits of participation in physical education were an important factor in explaining some of the difference in students' attitudes toward physical education.

Table 54

Mean Benefits Scores by Class Grouping.

Group	Mean	SD	SE	Cases
Single Gender	1.9779	.5482	.0345	253
Co-Educational	2.0265	.5297	.0244	473
Total	1.9911	.5380	.0200	726

The findings of the one-way analysis of variance of adolescent disturbances by class grouping are presented in **Table 55.** The findings indicate that the responses of students in coeducational physical education classes on the degree to which they experienced disturbances associated with their adolescent maturation and development were not significantly different ($p>.05$) from the responses of students in single-gender physical education classes. Differences in students' responses by class grouping to the degree to which they experience disturbances arising from their adolescent maturation and development were not an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 55

One-Way Analysis of Variance of Adolescent Disturbances by Class Grouping.

Source	DF	SS	MS	F	P
Between Groups	1	.8221	.8221	2.5334	.1119
Within Groups	724	234.9376	.3245		
Total	725	235.7597			

Physical Education Teacher Gender

Research question ten asked: Are there differences in students' attitudes toward physical education in relation to being taught by a teacher of the same gender versus being taught by a teacher of the opposite gender? Each aspect of physical education programs being studied was used in an analysis of variance of program aspects by teacher and student gender to determine whether the differences in students' responses were an important factor in explaining some of the differences in students' attitudes toward physical education.

The responses of students to specific interest in physical education, the connotation of physical education, teacher attributes, teaching methodologies, the status of physical education, the physical education curriculum, the benefits of participation in physical education and adolescent disturbances when taught by a teacher of the same gender were not significantly different ($p>.05$) from the responses of students taught by a teacher of the opposite gender. A summary of the findings on the two-way interactions of teacher gender and student gender on each aspect of the physical education program are presented in **Table 56.**

Table 56

Summary of the Analysis of Variance of Physical Education Attitude Scales by Teacher Gender and Student Gender.

	Two-Way Interaction of Genders				
Program Aspect	SS	DF	MS	F	P
Specific Interest	.947	1	.947	2.590	.108
Connotation	.207	1	.207	1.150	.284
Teacher Attributes	.009	1	.009	.028	.868
Teaching Methodology	.001	1	.001	.004	.949
Status	.720	1	.720	1.511	.219
Curriculum	.011	1	.011	.069	.793
Benefits	.352	1	.352	1.221	.270
Adolescent Disturbances	.353	1	.353	1.161	.282

While the two-way interaction of student gender and teacher gender was not an important factor in explaining differences in students' attitudes toward physical education, teacher gender in relation to students' views on teacher attributes indicated significant differences

(p,.001) in students responses. Students taught by a female teacher agreed more strongly (M= 1.72) with teacher attributes as being favorable than did students taught by a male teacher (M= 1.94).

Perceived Body Build

Research question 11 asked: Are there differences in students' attitudes toward physical education in relation to self-perceptions of their body-build? Each aspect of physical education programs being studied was used in an analysis of variance to determine whether differences in students' responses to these aspects of the physical education program when examined by students' self-perceptions of body-build were an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 57 indicates that differences in students' specific interest in physical education were not significant (p>.05) when examined by their self-perceptions of body-build. Students' self-perceptions of body-build in relation to their specific interest in physical education were not an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 57

One-way Analysis of Variance of Physical Education Specific Interest by Perceived Body Build

Source	DF	SS	MS	F	P
Between Groups	2	1.1105	.5552	1.4275	.2406
Within Groups	723	281.2065	.3889		
Total	725	282.3170			

Table 58 indicates that the differences in students' views on the connotation of physical education when examined by their self-perceptions of body build were not significant ($p>.05$). Students' self-perceptions of body build, in relation to their views on the connotations of physical education, were not an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 58

One-Way Analysis of Variance of Connotation of Physical Education by Perceived Body Build.

Source	DF	SS	MS	F	P
Between Groups	2	1.1267	.5634	2.8834	.0566
Within Groups	723	141.2591	.1954		
Total	725	142.3858			

Table 59 indicates that there were significant differences ($p<.01$) in students' responses to their view of teacher attributes as being favorable or unfavorable when examined in relation to their self-perceptions of body build. The mean scores for teacher attributes by perceived body build are presented in **Table 60.** The Student-Newman-Keuls procedure indicated significant difference ($p\leq.05$) between the "average" and "oversize" group means.

Table 59

One-Way Analysis of Variance of Teacher Attributes by Perceived Body Build.

Source	DF	SS	MS	F	P
Between Groups	2	3.3724	1.3862	4.9482	.0073
Within Groups	723	246.3812	.3408		
Total	725	249.7537			

Table 60

Mean Teacher Attributes Scores by Perceived Body Build.

Group	Mean	SD	SE	Cases
Oversized	2.0289	.6531	.0688	90
Average	1.8389	.5669	.0239	561
Undersized	1.9573	.6198	.0716	75
Total	1.8747	.5869	.0218	726

A product-moment correlation using a two-tailed test of significance indicated a negative relationship ($r=-.0378$) between teacher attributes and perceived body build. This relationship was not significant ($p>.05$). Students who perceived their body-build as being "average" and "undersize" agreed more positively with teacher attributes as being favorable than did students who perceived their body build as being "oversize".

Table 61 indicates that there were significant differences ($p<.001$) in students' responses to their level of satisfaction with the teaching methodologies in physical education when examined in relation to their self-perceptions of body build. The mean scores for teaching methodologies by perceived body build are presented in **Table 62**. The Student-Newman-Keuls procedure indicated significant differences ($p\leq.05$) between the pairs of "average" and "oversized" group means and between "average" and "undersize" group means.

Table 61

One-Way Analysis of Variance of Teaching Methodology by Perceived Body Build.

Source	DF	SS	MS	F	P
Between Groups	2	4.4756	2.2378	11.0270	.0000
Within Groups	723	146.7260	.2029		
Total	725	151.2016			

Table 62

Mean Teaching Methodology Scores by Perceived Body Build.

Group	Mean	SD	SE	Cases
Oversized	2.0494	.5330	.0562	90
Average	1.8433	.4321	.0182	561
Undersized	2.0044	.4779	.0552	75
Total	1.8855	.4567	.0169	726

A product-moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.2848$, $p<.05$) between students' level of satisfaction with teaching

methodologies and students' self-perceptions of body build. Students with a perceived body build of "average" expressed the most positive in their level of satisfaction with teaching methodologies. "Oversize" and "undersize" groups were not a positive in their level of satisfaction with teaching methodologies.

Table 63 indicates that the differences in students' responses to the status of physical education in comparison with other subjects were not significant ($p>.05$) when examined by their self-perceptions of body build. Students' self-perceptions of body build, when examined in relation to their views on the status of physical education, were not an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 63

One-Way Analysis of Variance of Status by Perceived Body Build.

Source	DF	SS	MS	F	P
Between Groups	2	.8886	.4443	.8799	.4153
Within Groups	723	365.0603	.5049		
Total	725	365.9489			

Table 64 indicates that there were significant differences ($p<.001$) in students' responses to their level of satisfaction with the physical education curriculum when examined in relation to students' perceived body build. The mean scores for curriculum by perceived body build are presented in **Table 65.** The Student-Newman-Keuls procedure indicated significant differences ($p\leq.05$) between the pair of "average" and "oversize" group means.

Table 64

One-Way Analysis of Variance of Curriculum by Perceived Body Build.

Source	DF	SS	MS	F	P
Between Groups	2	2.4916	1.2458	7.9591	.0004
Within Groups	723	113.1680	.1565		
Total	725	115.6596			

A product-moment correlation using a two-tailed test of significance indicated a negative relationship ($r=-.0569$) between students' level of satisfaction with the physical education curriculum and their perceived body build. The

relationship was not significant (p>.05). Students who perceived their body build as 'average" expressed the most positive level of satisfaction with physical education curriculum. Students who perceived their body build as "oversized" expressed the least positive of the physical education curriculum.

Table 65

Mean Curriculum Scores by Perceived Body Build.

Group	Mean	SD	SE	Cases
Oversized	2.1596	.4473	.0471	90
Average	1.9917	.3847	.0162	561
Undersized	2.0824	.4104	.0474	75
Total	2.0219	.3994	.0148	726

Table 66 indicates that there were significant differences (p<.001) in students' responses to the benefits of participation in physical education when examined in relation to students' self-perceptions of body build. The mean scores for benefits by perceived body build are presented in **Table 67.** The Student-Newman-Keuls procedure indicated

significant differences ($p \leq .05$) between the "average" and "oversized" pair of groups means and between the "undersize" and "oversize" pair of group means.

Table 66

One-Way Analysis of Variance of Benefits by Perceived Body Build.

Source	DF	SS	MS	F	P
Between Groups	2	6.8680	3.4340	12.2304	.0000
Within Groups	723	203.0007	.2808		
Total	725	209.8687			

Table 67

Mean Benefits Scores by Perceived Body Build.

Group	Mean	SD	SE	Cases
Oversized	2.2333	.6354	.0670	90
Average	1.9436	.5134	.0217	561
Undersized	2.0563	.5126	.0592	75
Total	1.9911	.5380	.0200	726

A product-moment correlation using a two-tailed test of significance indicated a negative relationship ($r=.0910$, $p<.05$) between students' recognition of the benefits of participation in physical education and students' self-perception of body build. The average and undersize groups agreed most strongly with the benefits of participation in physical education. The "oversize" group had the least positive view of the benefits of participation in physical education.

Table 68 indicates that there were significant differences ($p<.001$) in students' responses to the degree to which they experienced disturbances caused by their adolescent maturation and development when examined in relation to students' self-perceptions of body build. The mean scores for adolescent disturbances by perceived body build are presented in **Table 69.** The Student-Newman-Keuls procedure indicated significant differences ($p\leq.05$) between the pairs of "average" and "oversize" group means and "average" and "undersize" group means.

Table 68

One-Way Analysis of Variance of Adolescent Disturbances by Perceived Body Build.

Source	DF	SS	MS	F	P
Between Groups	2	7.9533	3.9766	12.6209	.0000
Within Groups	723	227.8064	.3151		
Total	725	235.7597			

Table 69

Mean Adolescent Disturbances Scores by Perceived Body Build.

Group	Mean	SD	SE	Cases
Oversized	1.9270	.7493	.0790	90
Average	1.6855	.5241	.0221	561
Unders[illegible]ed	1.9448	.5699	.0658	75
Total	1.7422	.5703	.0212	726

A product-moment correlation using a two-tailed test of significance indicated a negative relationship (r=-.0078) between students' experience of adolescent disturbances and students' self-perceptions of body build. The relationship was not significant (p>.05). Students who perceived their body build as "average" expressed the most positive view (experienced few disturbances) on their level of disturbance associated with their adolescent maturation and development. Students who perceived their body build as "oversize" and "undersize" expressed less positive views (experienced higher degree of disturbance) on their level of adolescent disturbances.

Perceived Fitness Level

Research question 12 asked: Are there differences in students' attitudes toward physical education in relation to self-perceptions of their level of fitness? Each aspect of the physical education program being studied was used in an analysis of variance to determine whether differences in students' responses to these program aspects when examined by their self-perceptions of their level of fitness were important in explaining some of the differences in students' attitudes toward physical education.

Table 70 indicates that there were significant differences ($p<,001$) in students' responses to their specific interest in physical education when examined in relation to their self-perceptions of fitness level. The mean scores for specific interest in physical education by perceived level of fitness are presented in **Table 71.** The Student Newman-Keuls procedure indicated that all pairs of means were significantly different ($p\leq.05$).

A product moment correlation with a two-tailed test of significance indicated a positive relationship ($r=.4563$, $p<,001$) between specific interest in physical education and perceived fitness level. As the mean scores indicate, students who perceived their fitness level as "top condition" expressed the most positive degree of interest in physical education. As the perceived fitness level decreased, the degree of interest in physical education also decreased. Self-perceptions of fitness level as being in "poor condition" expressed a negative response to interest in physical education.

Table 70

One-way Analysis of Variance of Physical Education Specific Interest by Perceived Fitness Level

Source	DF	SS	MS	F	P
Between Groups	3	61.2589	20.4196	66.6927	.0000
Within Groups	722	221.0581	.3062		
Total	725	282.3170			

Table 71

Mean Physical Education Specific Interest Scores by Perceived Fitness Level

Group	Mean	SD	SE	Cases
Top Condition	1.3917	.3850	.0325	140
Good Condition	1.6724	.5329	.0265	404
Fair Condition	2.1657	.6909	.0535	167
Poor Condition	2.6444	.6954	.1796	15
Total	1.7518	.6240	.0232	726

Table 72 indicates that there were significant differences ($p < .001$) in students' responses to the connotation of physical education by self-perceptions of their level of fitness. The Student-Newman-Keuls procedure found significant differences ($p \leq .05$) in the mean scores of all combinations of pairs of groups.

A product-moment correlation, using a two-tailed test of significance, indicated a positive relationship ($r=.4688$, $p<.001$) between the connotation of physical education and students' self-perceptions of fitness level.

Table 72

One-Way of Variance of Physical Education Connotation by Perceived Fitness Level.

Source	DF	SS	MS	F	P
Between Groups	3	32.4255	10.8085	70.9687	.0000
Within Groups	722	109.9603	.1523		
Total	725	142.3858			

Table 73 presents the mean scores of student responses to the connotation of physical education by perceived

fitness level. Students who perceived that they were in "top condition" agreed most positively with the connotation of physical education. As the level of perceived fitness decreased, the level of agreement with the connotation of physical education also decreased. Students who perceived their fitness level as "poor condition" expressed disagreement with the connotation of physical education.

Table 73

Mean Physical Education Connotation Scores by Fitness Level.

Group	Mean	SD	SE	Cases
Top Condition	1.4776	.3069	.0259	140
Good Condition	1.7107	.3925	.0195	404
Fair Condition	2.0180	.4480	.0347	167
Poor Condition	2.5429	.3249	.0839	15
Total	1.7536	.4432	.0164	726

Table 74 indicates that there were significant differences ($p<.001$) in students' responses to teacher attributes as being favorable or unfavorable when examined in relation to students' self-perceptions of their fitness level.

Table 74

One-Way Analysis of Variance of Teacher Attributes by Perceived Fitness Level.

Source	DF	SS	MS	F	P
Between Groups	3	5.8625	1.9542	5.7850	.0007
Within Groups	722	243.8912	.3378		
Total	725	249.7537			

The mean scores of teacher attributes by perceived fitness level are presented in **Table 75.** The Student Newman-Keuls procedure found that the responses of students who perceived their fitness level as being in "top condition" and in "good condition" were significantly different ($p \leq .05$) from students who perceived their fitness level as being in "fair condition." No other significant pairs were found.

A product-moment correlation with a two-tailed test of significance indicated a positive relationship ($r=.1153$, $p<.01$) between teacher attributes and students' self-perceptions of fitness level. As the level of perceived fitness decreased, students' views of teacher attributes as being favorable also decreased. Students who perceived themselves as in "top condition" and in "good condition"

agreed more strongly with teacher attributes as being favorable. Students who perceived their level of fitness as being in "fair condition" disagreed with teacher attributes as being favorable.

Table 75

Mean Teacher Attributes Scores by Perceived Fitness Level.

Group	Mean	SD	SE	Cases
Top Condition	1.8486	.5797	.0490	140
Good Condition	1.8158	.5503	.0274	404
Fair Condition	2.0144	.6559	.0508	167
Poor Condition	2.1467	.5153	.1330	15
Total	1.8747	.5869	.0218	726

Table 76 indicates that there were significant differences ($p<.001$) in students' responses to teaching methodologies as being favorable or unfavorable when examined in relation to students' self-perceptions of their level of fitness. The mean scores for teaching methodologies by

perceived level of fitness are presented in **Table 77.** The Student-Newman-Keuls procedure indicates significant differences ($p \leq .05$) between all combinations of pairs of means.

Table 76

One-Way Analysis of Variance of Teaching Methodology by Perceived Level of Fitness.

Source	DF	SS	MS	F	P
Between Groups	3	14.1468	4.7156	24.8416	.0000
Within Groups	722	137.0549	.1898		
Total	725	151.2016			

Table 77

Mean Teaching Methodology Scores by Perceived Level of Fitness.

Group	Mean	SD	SE	Cases
Top Condition	1.7452	.4081	.0345	140
Good Condition	1.8391	.4230	.0210	404
Fair Condition	2.0619	.4804	.0372	167
Poor Condition	2.4815	.4999	.1291	15
Total	1.8855	.4567	.0169	726

A product moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.2848$, $p<.05$) between teaching methodologies and students' self-perceptions of their level of fitness. As the students' perceived level of fitness decreased, the students agreement with teaching methodologies also decreased.

The means scores in **Table 77** indicate that students who perceive their level of fitness as being in "top condition" most strongly agree with teaching methodologies as being favorable, students who have a perceived fitness level of in "poor condition" disagree with teaching methodologies as being favorable.

Table 78 indicates that there were significant differences ($p<.001$) in students' responses to the status of physical education in comparison to other subjects when examined in relation to students' self-perceptions of their level of fitness. The mean scores for status of physical education by perceived level of fitness are presented in **Table 79.** The Student-Newman-Keuls procedure indicated significant differences ($p\leq.05$) in all combinations of pairs of group means.

Table 78

One-Way Analysis of Variance of Status by Perceived Fitness Level.

Source	DF	SS	MS	F	P
Between Groups	3	46.8678	15.6226	35.3500	.0000
Within Groups	722	319.0812	.4419		
Total	725	365.9489			

Table 79

Mean Status Scores by Perceived Level of Fitness.

Group	Mean	SD	SE	Cases
Top Condition	1.5286	.5081	.0429	140
Good Condition	1.8036	.6429	.0320	404
Fair Condition	2.2076	.7899	.0611	167
Poor Condition	2.6778	.9646	.2491	15
Total	1.8616	.7105	.0264	726

A product-moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.3526$, $p<.001$) between status and students' self-perceptions of fitness level. A students' perceived level of fitness decreased their level of agreement with an equivalent status for physical education in comparison to other students also decreased. Students who perceived their level of fitness as "top condition" agreed most strongly with an equivalent status of physical education. Students who perceived their level of fitness as "poor condition" disagreed with an equivalent status for physical education.

Table 80 indicates that there were significant differences ($p<.001$) in students' responses to their degree of

satisfaction with the physical education curriculum when examined in relation to students' self-perception of their level of fitness. The mean scores for satisfaction with curriculum by perceived fitness level are presented in **Table 81**. The Student-Newman-Keuls procedure indicated that the mean scores for students who perceived their level of fitness as in "top condition" and "good condition" were significantly different ($p \leq .05$) from the mean scores for students perceived their level of fitness as "fair condition" and "poor condition". The mean scores of the "fair condition" group also were significantly different ($p \leq .05$) form the "poor condition" group.

Table 80

One-Way Analysis of Variance of Curriculum by Perceived Fitness Level.

Source	DF	SS	MS	F	P
Between Groups	3	6.9791	2.3264	15.4549	.0000
Within Groups	722	108.6805	.1505		
Total	725	115.6596			

Table 81

Mean Curriculum Scores by Perceived Fitness Level.

Group	Mean	SD	SE	Cases
Top Condition	1.9377	.3708	.0313	140
Good Condition	1.9813	.3813	.0190	404
Fair Condition	2.1551	.4130	.0320	167
Poor Condition	2.4182	.4371	.1129	15
Total	2.0219	.3994	.0148	726

A product-moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.2223$, $p<.001$) between satisfaction with the physical education curriculum and self-perceptions of fitness level. "Top condition" and "good condition" students agreed more positively with curriculum than did "fair condition" and "good condition" students, and "fair condition" were more positive than "poor condition" on their level of satisfaction with the physical education curriculum.

Table 82 indicates that there were significant differences in students' responses on the degree to which they recognized the benefits of participation in physical education when examined in relation to students' self-perceptions of their

level of fitness. The mean scores for benefits of physical education by perceived level of fitness are presented in **Table 83**. The Student-Newman-Keuls procedure indicated significant differences ($p \leq .05$) between groups. While the mean score of the "top condition" group were not significantly different from the "good condition" groups, all other combinations of groups were statistically different.

Table 82

One-Way Analysis of Variance of Benefits by Perceived Fitness Level.

Source	DF	SS	MS	F	P
Between Groups	3	11.0032	3.6677	13.3160	.0000
Within Groups	722	198.8655	.2754		
Total	725	209.8687			

Table 83

Mean Benefits Scores by Perceived Fitness Level.

Group	Mean	SD	SE	Cases
Top Condition	1.8651	.5179	.0438	140
Good Condition	1.9557	.5290	.0263	404
Fair Condition	2.1304	.5118	.0396	167
Poor Condition	2.5704	.6170	.1593	15
Total	1.9911	.5380	.0200	726

A product-moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.2835$, $p<.001$) between students' recognition of the benefits of participation in physical education and students' perceived level of fitness. As the students perceived level of fitness decreased, the degree to which they agreed with the benefits of participation in physical education also decreased.

Table 84 indicates that there were significant differences ($p<.001$) in students' responses to the degree to which they experienced disturbances associated with their adolescent maturation and development when examined in relation to their self-perceptions of their level of fitness. The mean scores for adolescent disturbances by perceived level of fitness are

presented in **Table 85.** The Student-Newman-Keuls procedure indicated that the mean scores for all combinations of groups were significantly different ($p \leq .05$).

A product-moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.4710$, $p<.001$) between the degree to which students experienced adolescent disturbances and their perceived level of fitness. As students expressed more negative responses to experiences in physical education resulting from their adolescent maturation and development, their self-perceptions of fitness level also were more negative.

Table 84

One-Way Analysis of Variance of Adolescent Disturbances by Perceived Fitness Level.

Source	DF	SS	MS	F	P
Between Groups	3	52.8934	17.6311	69.6119	.0000
Within Groups	722	182.8663	.2583		
Total	725	235.7597			

Table 85

Mean Adolescent Disturbances Scores by Perceived Fitness Level.

Group	Mean	SD	SE	Cases
Top Condition	1.3694	.3642	.0308	140
Good Condition	1.6913	.4982	.0248	404
Fair Condition	2.1018	.5827	.0451	167
Poor Condition	2.5905	.7576	.1956	15
Total	1.7422	.5703	.0212	726

Perceived Sports Ability

Research question 13 asked: Are there differences in students' attitudes toward physical education in relation to self-perceptions of their sports ability? Each aspect of physical education programs being studied was used in an analysis of variance to determine whether differences in students' responses to these program aspects when examined by their self-perceptions of their level of sports ability were important in explaining some of the differences in students' attitudes toward physical education.

Table 86 indicates that there were significant differences ($p<.001$) in students' responses to their specific interest in

physical education when examined in relation to their self-perceptions of sports ability.

Table 86

One-way Analysis of Variance of Physical Education Specific Interest by Perceived Sports Ability

Source	DF	SS	MS	F	P
Between Groups	43	75.6771	18.9193	66.1924	.0000
Within Groups	719	205.5063	.2858		
Total	723	281.1834			

The mean scores for specific interest in physical education by sports ability are presented in **Table 87.** The Student-Newman-Keuls procedure indicated significant differences ($p \leq .05$) in the mean scores of all combinations of pairs of groups.

Table 87

Mean Physical Education Specific Interest Scores by Perceived Sports Ability

Group	Mean	SD	SE	Cases
Excellent at Sports	1.4055	.4174	.0333	157
Good at Sports	1.6266	.5350	.0303	312
Average at Sports	1.9927	.5996	.0443	183
Fair at Sports	2.3061	.5938	.0801	55
Poor at Sports	2.9510	.5489	.1331	17

A product-moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.5093$, $P<.001$) between specific interest in physical education and students' self-perceptions of sports ability. The mean scores indicates that students with a self-perception of "excellent at sport" expressed a strong positive interest in physical education. As the level of perceived ability decreased, the level of interest in physical education also decreased. Students with a self-perception of "poor at sports" expressed negative interest in physical education.

Table 88 indicates that there were significant

differences ($p<.001$) in students' responses to the connotation of physical education when examined by their perceived sports ability. **Table 89** presents the mean scores for students' responses to the connotation of physical education by their perceived sports ability. The Student-Newman-Keuls procedure found significant differences ($p\leq.05$) in students' responses between all pairs of perceived sports ability groups. The differences in students' responses by their perceived sports ability, to the connotation of physical education was an important factor in explaining some of the differences in students' attitudes toward physical education.

Table 88

One-Way Analysis of Variance of Connotation of Physical Education by Perceived Sports Ability.

Source	DF	SS	MS	F	P
Between Groups	4	41.1927	10.2982	73.3541	.0000
Within Groups	719	100.9404	.1404		
Total	723	142.1330			

Table 89

Mean Connotation of Physical Education Scores by Perceived Sports Ability.

Group	Mean	SD	SE	Cases
Excellent at Sports	1.4850	.3254	.0260	157
Good at Sports	1.6676	.3688	.0209	312
Average at Sports	1.9243	.4098	.0303	183
Fair at Sports	2.2026	.3826	.0516	55
Poor at Sports	2.5630	.4777	.1159	17
Total	1.7545	.4434	.0165	724

A product-moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.5332$, $p<.05$) between the connotation of physical education and students' self-perceptions of sports ability. Students who perceived their sports ability as "excellent" agreed most strongly with the connotation of sport. Those students whose self-perceptions were of "poor" sport ability expressed negative feelings towards the traditional connotation of sport.

The one-way variance of teacher attributes by perceived sports ability, presented in **Table 90**, indicated that there

were significant differences ($p<.001$) in the responses of students on their views of teacher attributes when examined in relation to their self-perceptions of sports ability.

Table 90

One-Way Analysis of Variance of Teacher Attributes by Perceived Sports Ability.

Source	DF	SS	MS	F	P
Between Groups	4	7.9318	1.9829	5.9201	.0001
Within Groups	719	240.8291	.3350		
Total	723	248.7608			

Table 91 presents the mean scores of teacher attributes by perceived sports ability. The Student-Newman-Keuls procedure indicated that the mean scores for the "excellent at sports", "good at sports", and "average at sports" were significantly different ($p\leq.05$) from the "fair at sports" and "poor at sports" groups.

A product-moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.1037$, $p<.001$) between the degree to which students view teacher attributes as favorable or unfavorable and their self-

perceptions of sports ability. As the mean scores indicate, students who perceive their level of ability as "excellent at sports" most strongly agreed with teacher attributes as being favorable. As self-perceptions of sports ability decreased, students views of teacher attributes became less positive. Students with self-perceptions of ability as "poor at sports" has the least positive view of teacher attributes.

Table 91

Mean Teacher Attribute Scores by Perceived Sports Ability.

Group	Mean	SD	SE	Cases
Excellent at Sports	1.8242	.5876	.0469	157
Good at Sports	1.8167	.5677	.0321	312
Average at Sports	1.9158	.5789	.0428	183
Fair at Sports	2.0945	.6311	.0851	55
Poor at Sports	2.3294	.5145	.1248	17
Total	1.8765	.5866	.0218	724

The results of the one-way analysis of variance of teaching methodologies by perceived level of fitness are presented in **Table 92.** The results indicate that there were

significant differences ($p<.001$) in students' responses in the degree to which they view the teaching methodologies in physical education as favorable or unfavorable when examined in relation to their self-perceptions of sports ability.

Table 92

One-Way Analysis of Variance of Teaching Methodology by Perceived Sports Ability.

Source	DF	SS	MS	F	P
Between Groups	4	21.1689	5.2922	29.4066	.0000
Within Groups	719	129.3985	.1800		
Total	723	150.5654			

A product-moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.3407$, $p<.05$) between teaching methodologies and students' self-perceptions of sports ability. As the mean scores indicate, students with a self-perception of ability as being "excellent at sports" expressed the most positive agreement with teaching methodologies. As the perceived ability in sport became less positive, students' views of teaching methodologies also became less positive, students' who perceived their ability in

sports as being "poor at sports" indicated negative views of teaching methodologies.

The mean scores for teaching methodologies by perceived sports ability are presented in **Table 93**. The Student-Newman-Keuls procedure indicated significant differences ($p \leq .05$) between the means scores for all pairs of groups except for "excellent at sports" and "good at sports".

Table 93

Mean Teaching Methodology Scores by Perceived Sports Ability.

Group	Mean	SD	SE	Cases
Excellent at Sports	1.7742	.4183	.0334	157
Good at Sports	1.7931	.4074	.0231	312
Average at Sports	1.9727	.4195	.0310	183
Fair at Sports	2.2444	.5231	.0705	55
Poor at Sports	2.5752	.4799	.1164	17
Total	1.8870	.4563	.0170	724

Table 94 indicates that there were significant differences in students responses to the status of physical education when examined in relation to their self-perceptions of sports ability.

Table 94

One-Way Analysis of Variance of Status by Perceived Sports Ability.

Source	DF	SS	MS	F	P
Between Groups	4	87.1167	21.7792	56.2654	.0000
Within Groups	719	278.3102	.3871		
Total	723	365.4269			

The mean scores for status of physical education by perceived sports ability are presented in **Table 95.** The Student-Newman-Keuls procedure indicated significant differences in all combinations of pairs of means.

Table 95

Mean Status Scores by Perceived Sports Ability.

Group	Mean	SD	SE	Cases
Excellent at Sports	1.5202	.5121	.0409	157
Good at Sports	1.7276	.5545	.0314	312
Average at Sports	2.0674	.7170	.0530	183
Fair at Sports	2.4939	.8618	.1162	55
Poor at Sports	3.2647	.7121	.1727	17
Total	1.8628	.7109	.0264	724

A product-moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.4711$, $p<.001$) between students' view of the status of physical education and their self-perceptions of sports ability. As the mean scores indicate, students with self-perceptions of ability as being "excellent at sports" most strongly agree with the status of physical education as being equivalent to other subjects. As students' self-perceptions of ability became less positive, their view of the status of physical education became less positive. Students with a self-

perception of ability as being "poor at sports" expressed negative views of the status of physical education in comparison to other subjects.

Table 96 indicates that there were significant differences ($p<.001$) in students' responses on their degree of satisfaction with the physical education curriculum when examined in relation to their self-perceptions of sports ability. The mean scores for degree of satisfaction with the physical education curriculum by perceived level of sports ability are presented in **Table 97**. The Student-Newman-Keuls procedure indicated significant differences ($p\leq.05$) between the mean scores for all combination of pairs of groups with the exception of the comparison of the means for the "excellent at sports" group and the "good at sports" group.

Table 96

One-Way Analysis of Variance of Curriculum by Perceived Sports Ability.

Source	DF	SS	MS	F	P
Between Groups	4	12.1107	3.0277	21.2342	.0000
Within Groups	719	102.5186	.1426		
Total	723	114.6292			

Table 97

Mean Curriculum Scores by Perceived Sports Ability.

Group	Mean	SD	SE	Cases
Excellent at Sports	1.9172	.3774	.0301	157
Good at Sports	1.9615	.3715	.0210	312
Average at Sports	2.1053	.3821	.0282	183
Fair at Sports	2.2364	.4075	.0550	55
Poor at Sports	2.5882	.3388	.0822	17
Total	2.0239	.3982	.0148	724

A product-moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.3036$, $p<.001$) between degree of satisfaction with the curriculum and students' self-perceptions of sports ability. As the mean scores indicate, students with a self-perception of ability as being "excellent at sports" and "good at sports" expressed the highest degree of satisfaction with physical education curriculum. As the level of perceived ability in sports declined, the degree of satisfaction with the physical education curriculum also declined. Students with a self-perception of ability as being "poor at sports" expressed the least amount of satisfaction with the physical education curriculum.

Table 98 indicates that there were significant differences ($p<.001$) in students' responses to their recognition of the benefits of participation in physical education when examined in relation to students' self-perceptions of sports ability. The mean scores for benefits of physical education by perceived sports ability are presented in **Table 99**. The Student-Newman-Keuls procedure indicated significant differences ($p\leq.05$) between the mean scores of all combinations of pairs of groups with the exception of the comparison of the mean score for the "excellent at sports" group with that of the "good at sports" group.

Table 98

One-Way Analysis of Variance of Benefits by Perceived Sports Ability.

Source	DF	SS	MS	F	P
Between Groups	4	19.9646	4.9912	18.9668	.0000
Within Groups	719	189.2060	.2632		
Total	723	209.1706			

Table 99

Mean Benefits Scores by Perceived Sports Ability.

Group	Mean	SD	SE	Cases
Excellent at Sports	1.8684	.5482	.0438	157
Good at Sports	1.9160	.5165	.0292	312
Average at Sports	2.0601	.4613	.0341	183
Fair at Sports	2.3455	.5340	.0720	55
Poor at Sports	2.6797	.5705	.1384	17
Total	1.9926	.5379	.0200	724

A product-moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.2089$, $p<.001$) between the degree to which students recognize the benefits of physical education participation and students' perceived level of sports ability. The mean scores indicate that students with a perceived ability level of "excellent at sports" most strongly agreed with the recognized benefits of participating in physical education. As the perceived ability level declined, recognition of the benefits of participation also declined. Students with a perceived sports ability of "poor at sports" disagreed with the benefits of participation in physical education.

Table 100 indicates that there were significant differences ($p<.001$) in students' responses to the degree to which they experience disturbances associated with adolescent maturation and development when examined in relation to their self-perceptions of sports ability. The mean scores for adolescent disturbances by perceived sports ability are presented in **Table 101.** The Student-Newman-Keuls procedure indicated significant differences ($p\leq.05$) in the mean scores for all combinations of pairs of groups.

Table 100

One-Way Analysis of Variance of Adolescent Disturbances by Perceived Sports Ability.

Source	DF	SS	MS	F	P
Between Groups	4	60.6236	15.1559	62.4528	.0000
Within Groups	719	174.4853	.2427		
Total	723	235.1089			

Table 101

Mean Adolescent Disturbances Scores by Perceived Sports Ability.

Group	Mean	SD	SE	Cases
Excellent at Sports	1.4322	.4212	.0336	157
Good at Sports	1.6332	.4633	.0262	312
Average at Sports	1.9344	.5430	.0401	183
Fair at Sports	2.3169	.5965	.0804	55
Poor at Sports	2.7395	.6705	.1626	17
Total	1.7437	.5703	.0212	724

A product-moment correlation using a two-tailed test of significance indicated a positive relationship ($r=.5000$, $p<.001$) between students' experience of adolescent disturbances and their self-perceptions of sports ability. The mean scores indicate that students with a perception of ability as "excellent at sports" most positively agreed with few adolescent disturbances. As the perceived level of ability became more negative, students' experiences of disturbance were also more negative. Students with perceived ability level of "poor at sports" disagreed with experiences of few adolescent disturbances.

Multiple Regression Analysis

A multiple regression analysis was used to determine the correlation between specific interest in physical education, as the dependent variable, and the combination of the connotation of physical education, teacher attributes, teaching methodologies, the physical education curriculum, status, benefits, and adolescent disturbances. The results of this analysis are presented in **Table 102.**

The multiple R coefficient ($R=.7964$) indicated a strong correlation between specific interest in physical education and the combination of predictor variables. The multiple R squared coefficient ($R=.6343$) indicated that the

connotation of physical education, teacher attributes, teaching methodologies, the physical education curriculum, status, benefits, and adolescent disturbances predicted 64 percent of the differences in students' attitudes toward physical education. **Table 102** also presents the "T" scores and significant "T" scores which indicate that the connotation of physical education, teaching methodologies, the status of physical education, the physical education curriculum, and adolescent disturbance were important in understanding students' attitudes toward physical education. The beta weights indicated that status (B=.3474), the connotation of physical education (B=.2598), and adolescent disturbances (B=.1669) were the strongest predictors of the differences in students' attitudes toward physical education.

Table 102

Multiple Regression Analysis with Specific Interest in Physical Education as Dependent Variable.

Variable	B	SE B	BETA	T	SIG T
P.E. Connotation	.3591	.0478	.2550	7.503	.0000
Teacher Attributes	- .0128	- .0321	- .0121	- 0.400	- .6890
Teaching Methodology	.2031	.0517	.1486	3.927	.0001
Status	.3092	.0247	.3521	12.524	.0000
Curriculum	.1094	.0542	.0700	2.020	.0437
Benefits	.0279	.0390	.0241	0.716	.4743
Adolescent Disturbances	.1783	.0341	.1630	5.226	.0000
Constant	- .3939	.0818		- 4.816	.0000

Note: Multiple R = .79636

Multiple R = .63418

Chapter V

Summary, Conclusions, and Recommendations

Introduction

This chapter presents a summary of the study and includes a brief discussion of the major results of the investigation. The conclusions which were drawn from the analysis of the data, their implications for persons directly concerned with curriculum development and the teaching of physical education at the intermediate school level, and recommendations for future actions are also addressed.

Summary of the Study

The study investigated student attitudes toward physical education at the intermediate school level. A comprehensive review of related literature, the opinions of experienced physical education teachers, and the researcher's own experiences in teaching physical education at the intermediate school level were drawn upon in the defining of the specific aspects of the physical education program which were examined in relation to students' attitudes toward physical education.

Eight aspects of the program were identified and included the following:

(a) the connotation of physical education as being masculine or feminine in nature

(b) teacher attributes

(c) teaching methodologies

(d) the status of physical education

(e) the physical education curriculum

(f) the perceived benefits of physical education

(g) individual adolescent disturbances, and

(h) specific interest in physical education

On the basis of the above, the following research questions evolved:

(1) Are there differences in the attitudes of male and female students in grades 7, 8, and 9 and between the ages of 12 to 15 toward physical education?

(2) Are there differences in students' attitudes toward physical education in relation to the degree to which they view physical education as having a masculine or feminine connotation?

(3) Are there differences in students' attitudes toward physical education in relation to the degree to which they view the attributes of the physical educator as favorable or unfavorable?

(4) Are there differences in students' attitudes toward physical education in relation to their expressed satisfaction or dissatisfaction with the physical educators' teaching methodologies?

(5) Are there differences in students' attitudes toward physical education in relation to their view of the status of physical education in comparison to other subjects?

(6) Are there differences in students' attitudes toward physical education in relation to their expressed satisfaction or dissatisfaction with the physical education curriculum?

(7) Are there differences in students' attitudes toward physical education in relation to the degree to which they recognize the benefits of participating in physical education?

(8) Are there differences in students' attitudes toward physical education in relation to the degree to which they experience disturbances caused by their adolescent maturation and development?

(9) Are there differences in students' attitudes toward physical education in relation to participation in co-educational versus single-gender physical education classes?

(10) Are there differences in students' attitudes toward physical education in relation to being taught by a teacher of the same gender versus being taught by a teacher of the opposite gender?

(11) Are there differences in students' attitudes toward physical education in relation to self-perceptions of their body build?

(12) Are there differences in students' attitudes toward physical education in relation to self-perceptions of their level of fitness?

(13) Are there differences in students' attitudes toward physical education in relation to their self-perception of their ability in sports?

The data necessary to address these concerns were collected using the Physical Education Attitude Questionnaire which was developed by the researcher. A sample was drawn from the total student population in six schools under the jurisdiction of the Roman Catholic, Avalon Consolidated, and Pentecostal school boards in St. John's. Only those students who returned completed parental/guardian consent forms participated in the study and there was a response rate of 71 percent. A total of 726 questionnaires was retained for analysis.

Analyses of variance were computed using eight domains including: student age, student gender, grade level, teacher gender, class grouping, perceived body build, perceived fitness level, and perceived sports ability. The findings are summarized below.

Age

Age was an important factor in determining some of the differences in students' attitudes toward physical education in relation to their specific interest in physical education and the status of physical education.

With regards to specific interest in physical education, the attitudes of 12 year old students were more positive than were the attitudes of 14 year old students. While males were more positive in their specific interest in physical education at most age levels, the exception to this was for 12 year olds. Younger females expressed more positive attitudes than did younger males.

Younger students expressed more favorable attitudes toward the status of physical education in relation to other subject areas than did older students. Students aged 12 agreed more strongly than students aged 13 through 15 that the status of physical education was equivalent to that of other subject areas.

Gender

With the exception of teaching methodologies, in which there were no significant differences in students' responses, gender was an important factor in determining some of the differences in students' attitudes toward physical education at the intermediate school level. Males expressed more positive attitudes toward physical education than did females. Males were more positive than females on their specific interest in physical education, the connotation of physical education, teacher attributes, teaching methodologies, the status of physical education, the physical education curriculum, the benefits of participation in physical education, and adolescent disturbances.

While males were more positive than females overall, younger females were more positive than younger males on their specific interest in physical education.

Grade

There were no significant differences in students' responses by grade level in relation to the connotation of physical education, teaching methodologies, benefits of participation in physical education, and adolescent disturbances. Students expressed positive views on these aspects of the physical education program. The differences in students' responses by grade level in relation to specific

interest in physical education, teacher attributes, the status of physical education, and the physical education curriculum were important in determining some of the differences in students' attitudes toward physical education.

Grade 7 students were more positive than grade 8 and 9 students on their specific interest in physical education. The responses of grade 8 students were not statistically different from those of grade 9 students.

The responses of grade 7 and grade 8 students toward the status of physical education were not statistically different and students positively agreed with physical education as having an equivalent status in comparison with other subjects. The views of the grade 9 students were not as favorable toward the status of physical education in relation to other subjects.

Grade 8 students expressed the least favorable view of the physical education curriculum and their responses were statistically different from those of the grade 7 and grade 9 students. While the grade 7 students expressed the most favorable view of the physical education curriculum, the view of the grade 9 students was more positive than that of the grade 8 students.

Class Grouping

The findings of the analysis of variance of the eight aspects of the physical education classes by class grouping indicated that students' responses to specific interest in physical education, teacher attributes, teaching methodologies, the physical education curriculum, the status of physical education, and adolescent disturbances were not statistically different and expressed positive views toward these aspects of the physical education program. Class grouping in relation to these factors was not important in explaining differences in students' attitudes toward physical education.

Students' responses to the benefits of participation in physical education by class grouping were statistically different. Students in single-gender classes were more positive in the degree to which they recognized the benefits of participation in physical education than were students in coeducational classes.

Teacher Gender

The two-way analysis of variance, which was computed for each of the eight aspects of the physical education program by teacher gender and student gender, indicated that the responses of students taught by a teacher of the same gender were not statistically different from those of students taught

by a teacher of the opposite gender. Differences in students' responses to each aspect of the physical education program examined by the two-way interaction of teacher gender and student gender were not an important factor in explaining differences in students' attitudes toward physical education.

While the two-way interaction of student gender and teacher gender was not an important factor in explaining differences in students' attitudes toward physical education, teacher gender in relation to students' views on teacher attributes indicated that students viewed the attributes of female teachers more favorably than they viewed the attributes of male teachers.

Perceived Body Build

Students' responses to specific interest in physical education, the connotation of physical education, and the status of physical education were not statistically different when examined in relation to students' self-perceptions of body build. Students expressed positive attitudes toward these aspects of the physical education program. Students' responses to teacher attributes, teaching methodologies, the physical education curriculum, the benefits of participating in physical education, and adolescent disturbances were statistically different and were important in determining some

of the differences in students' attitudes toward physical education.

Students who perceived their body build as being "average" expressed the most positive attitudes toward teacher attributes, teaching methodologies, the physical education curriculum, benefits of participation in physical education, and adolescent disturbances. The responses of students in the "undersize" and "average" groups were similar in relation to positive attitudes toward teacher attributes, the curriculum, and benefits of participation in physical education.

Students who perceived their body build as being "oversize" expressed the least positive attitudes toward teacher attributes, teaching methodologies, the physical education curriculum, the benefits of participation in physical education, and adolescent disturbances. The "oversize" and "undersize" groups were not as favorable as the "average" group toward teaching methodologies and reported greater disturbance arising from the changes associated with their adolescent maturation and development.

Perceived Fitness Level

Students' self- perceptions of fitness, in relation to all aspects of the physical education programs under investigation, was an important factor in explaining some of the differences in students' attitudes toward physical

education. There was a strong positive relationship between students' perceived level of fitness and specific interest in physical education, the connotation of physical education, teaching methodologies, the status of physical education, and adolescent disturbances. As students' perceived level of fitness became less positive, their attitudes toward these aspects of the physical education program also became less positive. Students who perceived their level of fitness as being in "poor condition" expressed negative attitudes toward specific interest in physical education, the connotation of physical education, teaching methodologies, status, the benefits of participation in physical education, and adolescent disturbances.

The responses of students in the "top condition" and "good condition" fitness levels were not statistically different and expressed positive attitudes toward teacher attributes, the physical education curriculum, and the benefits of participation in physical education. Statistically, the students in the "fair condition" group expressed the least positive view of teacher attributes. The students in the "poor condition" group expressed the least positive attitudes toward the physical education curriculum and negative attitudes toward the benefits of participation in physical education.

Perceived Sports Ability

Students' self-perceptions of sports ability, in relation to all aspects of the physical education program under investigation, was an important factor in explaining some of the differences in students' attitudes toward physical education. There was a strong positive relationship between students' perceived level of sports ability and specific interest in physical education, the connotation of physical education, teacher attributes, teaching methodologies, the status of physical education, the physical education curriculum, the benefits of participation in physical education, and adolescent disturbances. As students' self-perceptions of their ability in sports became less positive, their attitudes toward these aspects of the physical education program also became less positive. While students in the "excellent at sports" perceived ability group consistently expressed the most positive attitudes toward all aspects being investigated in the physical education program, students in the "poor at sports" group consistently expressed negative attitudes toward these program aspects.

The responses of students in all perceived ability groups were statistically different in relation to specific interest in physical education, the connotation of physical education, the status of physical education, and adolescent disturbances. Students who perceived their ability as being "excellent at

sports" expressed the most positive attitudes toward these aspects of the physical education program while students who perceived their ability as being "poor at sports" expressed negative attitudes toward these aspects of the physical education program.

Students who perceived their ability as being "excellent at sports" and "good at sports" indicated more positive attitudes toward teaching methodologies, the physical education curriculum, and the benefits of participation in physical education than did students who perceived their ability as being "average at sports", "fair at sports", and "poor at sports". Students who perceived their level of ability as "excellent at sports", "good at sports", and "average at sports" indicated more positive attitudes toward teacher attributes than did students in the "fair at sports" and "poor at sports" groups.

Multiple Regression Analysis

The multiple regression analysis indicated that the status of physical education, the connotation of physical education as being masculine or feminine in nature, and adolescent disturbances were the strongest predictors of students' attitudes toward physical education at the intermediate school level. Teaching methodologies and the physical education curriculum were also important factors.

The relationship of teacher attributes and the benefits of participation in physical education to students' attitudes was not significant.

In summary, then, the results of the analysis of variance indicated that specific interest in physical education and the status of physical education were more relevant to younger students than they were to older students with regards to positive attitudes toward physical education. Males were more positive toward specific interest in physical education, with the exception of younger students where females were more positive in their attitudes than were younger males, the connotation of physical education, teacher attributes, the status of physical education, the physical education curriculum, and adolescent disturbances. There were also significant differences in students' responses by grade level to specific interest in physical education, teacher attributes, the status of physical education, and the physical education curriculum. Therefore, research questions one, two, three, five, six, and eight, which applied to differences in students' responses by age, gender, and grade and to specific interest in physical education, the connotation of physical education, teacher attributes, the status of physical education, the physical education curriculum, and adolescent disturbances, were supported by the data. Research questions four and seven, which pertained to differences in students'

responses to teaching methodologies and the benefits of participation in physical education, were not supported by the data as no significant differences in students' responses were indicated.

The responses of students taught by a teacher of the same gender and those of students taught by a teacher of the opposite gender were not significantly different in relation to specific interest in physical education, the connotation of physical education, teacher attributes, teaching methodologies, the status of physical education, the physical education curriculum, the benefits of participation in physical education, and adolescent disturbances. Therefore, question ten was not supported by the data.

There were no significant differences in the responses of students in single gender classes when compared to the responses of students in coeducational classes when examined in relation to specific interest in physical education, the connotation of physical education, teacher attributes, teaching methodologies, the status of physical education, the physical education curriculum, and adolescent disturbances. In relation to these aspects of the physical education program, question nine (class grouping) was not supported by the data. While the differences in students' responses to the degree to which they recognize the benefits of participation in physical education was statistically significant when

examined by class grouping, the researcher contents that the differences were not of any practical significance. The difference in mean scores between single gender classes (M= 1.9779) and coeducational classes (M= 2.0265) indicates that, for practical purposes, there was little real difference between the views of these groups on the benefits of physical education.

Students with a self-perception of their body build as being "oversized" indicated less positive attitudes toward physical education, in relation to teacher attributes, teaching methodologies, the physical education curriculum, the benefits of physical education, and adolescent disturbances, than did those students who perceived their body build as being "average" and "undersize". Therefore research question number eleven was supported by the data.

Students' responses indicated that their perceived levels of fitness and sports ability were important factors in explaining differences in students' attitudes toward physical education when examined in relation to specific interest in physical education, the connotation of physical education, teacher attributes, teaching methodologies, the status of physical education, the physical education curriculum, the benefits of physical education, and adolescent disturbances. Research questions twelve and thirteen (perceived fitness

level and perceived sports ability) were supported by the data.

Conclusions and Recommendations

(1) Status

It is a commonly held belief that boys are more naturally interested in sports and physical activity than are girls. The finding of the present study that younger females expressed greater interest in physical education than did younger males contradicts this belief. The question then arises as to the reason for the decline in female interest in physical education while there is an increase in male interest in physical education. One answer may rest in the status of physical education, from both a social and an academic perspective.

The researcher's findings indicated that grade nine students have a less positive view of the status of physical education in comparison to other subjects than did students in grades seven and eight. In addition, females were less positive than were male students toward the status of physical education. Gender differences in social status may help to explain gender differences in the academic status of physical education. The study by Thirer and Wright (1985) examined the social status criteria for male and female adolescents. Their

findings indicated that "being an athlete" was the foremost criteria for male popularity by both male and female adolescents, while "being an athlete" was given a very low social status for females by both male and female students. The primary criteria for female social status was "being in the leading crowd". It would appear that while male students can look to athletic accomplishments for social status amongst their peers, females must look elsewhere for this recognition.

Issues dealing with gender equality must be a focus in teacher training programs and be a continuing focus for inservice professional development sessions for practicing physical education teachers. Guidance councilors and teachers of family life, health education, and adolescent development courses must also become cognizant of the differing focus for male and female popularity among adolescent students and strive toward teaching the acceptance of gender equality in all facets of school life.

As was found in the study by Van Wersch, Trew, and Turner (1992), results of the present study indicated that the status of physical education was the most important factor for students' attitudes toward physical education. At the same age and grade level that interest in physical education was declining for female students, the status of physical education in relation to other school subjects was also declining. It may be that as students move into the higher

grade levels, they begin to recognize which subjects are most important for success. Grade nine students begin to think of their future educational aspirations and those subjects which are most important in reaching those goals receive the greater status in the schools.

If physical educators hope to promote students' interest in physical education with the goal of improving or maintaining physical fitness and health through active participation in physical education, they must work to improve the status of physical education within the school system. Students expressed positive attitudes toward teacher attributes and teaching methodologies which displayed clearly defined goals and were well-organized (Luke and Sinclair, 1991). Students should be expected to learn skills and not be given a message that if they turn up and get involved, they will pass physical education.

To improve the status of physical education, physical educators must, individually, establish and clearly articulate predetermined goals and concentrate on fewer and different things at each grade level with a view to quality, not quantity. The focus of evaluation should be on individual achievement of personal goals and involve students in the decision-making process. This is a skill which, in itself, must be taught and while the process may be time consuming and difficult in the early stages, the outcome may be a positive

student response to being held accountable for learning while they enjoy the activity.

Professional bodies within the field of physical education must lobby school boards and governments to act upon the expanding body of knowledge from research which clearly articulate the need for and benefits of quality physical education programs.

It is strongly recommended that there be a full-time physical education consultant within the provincial Department of Education to direct the development, implementation and evaluation of physical education programs. This individual should work with school board members and/or Parent Advisory Committee members, physical education coordinators, and principals to explore the various options regarding staffing, scheduling, class-size, facility utilization, budgeting, and the selection of resource materials and equipment. While initially, the changes may be unsettling and expensive, ultimately, the rewards would more than compensate for the time, energy, and dollars which were spent.

(2) Connotation of Physical Education

The findings of this study indicted that male students were more positive in their attitudes toward the connotation of physical education than were female students. The traditional emphasis on competition, aggression, beating one's

opponent, and facing challenges and risks appear to be more important for males than it is for females. In relation to this finding, male students also indicated greater satisfaction with the physical education curriculum than did female students. One explanation for this differing view on the connotation of physical education may be due to the double message the girls receive with regards to being competitive, yet portraying the feminine role.

Two recommendations are suggested to overcome the difficulties with the traditional views of participation in physical education as having a masculine connotation. Firstly, pre-service and in-service training for physical educators must be provided to assist them in gaining an understanding of how teachers' verbal and non-verbal practices in the classroom, the gymnasium, and on the playing field can contribute to the development of stereotypical images and expectations of femininity and masculinity. Competitiveness and aggressiveness are traits which can be, and are, characteristic of both males and females and should have nothing to do with images of masculinity or femininity.

Secondly, it is recommended that a greater emphasis be placed on personal evaluation rather than on evaluation based upon the attainment of some group norm. In this manner, students would be encouraged to strive towards personal development and not be placed in competition with the

attainments of other students. Provisions for recreational, intramural, and varsity programs should also be an integral part of physical education programs and could operate outside of the scheduled class time to provide the competitive arena for those students who wish to participate.

(3) Adolescent Disturbances

Adolescence is best characterized as a period of change. It is a period of time in which youth must constantly adapt to changing self-images as they experience the physical, physiological, mental, and emotional growth associated with this stage of development. For the most part, this period of time corresponds with the intermediate school years.

While some students experience few disturbances as they mature and develop, others experience a greater degree of disturbance. In relation to the physical education setting examined in the present study, female students indicated experiencing disturbances associated with their adolescent growth and development to a greater degree than did male students. Students who indicated self-perceptions of their body build as being "oversize" and "undersize" also indicated experiencing adolescent disturbances to a greater degree than those students who perceived their body build as being "average". Females and those students with self-perceptions as being "oversize" or "undersize" were more likely to express

feelings of embarrassment with regards to changing in front of others and with regards to their level of ability in relation to that of other students.

It is recommended that the completion of a curriculum course which focuses upon the characteristics of the adolescent student and the implications for the teaching of physical education be mandatory for all physical education majors. Refresher programs should also be offered to practicing teachers through in-service days on a school board basis.

Changing facilities should be designed and/or modified to reflect a consideration for the privacy and security of students. Showering facilities should be incorporated into the changing-rooms and class scheduling should be developed in an effort to encourage and to facilitate students' attention to personal grooming.

(4) Self-Perceptions

Students' self-perceptions of their level of fitness and their ability in sports were important factors in explaining some of the differences in students' attitudes toward physical education. As students' perceptions of their level of fitness and their level of sports ability became more negative, their attitudes toward specific interest in physical education, the connotation of physical education, teacher attributes,

teaching methodologies, the status of physical education, the physical education curriculum, the benefits of participation in physical education, and adolescents disturbances became more negative. While these self-perceptions may or may not be accurate, it may be the perception more so than reality which influences students' attitudes.

Luke and Sinclair (1991) examined gender differences in adolescents' attitudes toward school physical education. The results of their study indicated that students who had positive self-perceptions tended to continue taking physical education after it was no longer a compulsory subject, while students who had negative self-perceptions opted out of physical education once it was no longer a compulsory subject. The psychological dimension to physical education acknowledges the need to promote programs and teaching styles which will facilitate the development of positive self-perceptions.

A task orientation, which focuses upon personal accomplishments and achievement and the mastery of set goals, will provide opportunities for all students to experience success.

Students' self-perceptions of body build was also an important factor in explaining some of the differences in students' attitudes toward physical education in relation to teacher attributes, teaching methodologies, the physical education curriculum, the benefits of participation in

physical education, and adolescent disturbances. A negative self-perception of body build indicated a negative attitude toward these aspects of the physical education program. During adolescence when appearances are constantly changing, students must be encouraged to be more self-accepting. Health, physical education, and family-life/adolescence subjects should coordinate units on self-esteem to counteract society's overemphasis on some aspects of physical appearance. Teachers can help students to appreciate the unique aspects of their bodies, help them to make changes when health would indicate the need, and help them to understand the social forces at work in the development of their self-perceptions.

Summary

The purpose of this study was to examine students' attitudes toward physical education at the intermediate school level. The findings indicated that, while students generally have positive attitudes toward physical education, there are differences in their attitudes towards various aspects of these programs. Status, the connotation of physical education, and adolescent disturbances were the strongest predictors of students' attitudes toward physical education at the intermediate school level. Gender differences indicated that, overall, male students had a more positive attitude toward physical education than did female students.

A primary goal of physical education programs has been the development of positive attitudes toward physical education. The information gathered in studies such as this, can assist current physical educators and persons directly involved with the development of the physical education curriculum in their efforts to attain this goal.

Recommendations for Future Studies

(1) The study of students' attitudes toward physical education at the intermediate school level should be conducted on a province-wide basis in Newfoundland.

(2) The study of students' attitudes toward physical education at the intermediate school level be expanded to examine student differences in relation to class size.

(3) The study of students' attitudes toward physical education at the intermediate school level be expanded to include an examination of actual participation levels in physical activity in relation to attitudes toward physical education.

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APPENDIX A

QUESTIONNAIRE

PHYSICAL EDUCATION SURVEY

PLEASE DO NOT WRITE YOUR NAME ON THIS SURVEY

Dear Student:

As a university graduate student completing my Master of Education degree, I am conducting a survey on student attitudes toward physical education at the intermediate school level. The questionnaire which you are being asked to complete will let me know your opinions on some parts of your physical education program. Your cooperation in responding to each statement on the questionnaire will help in the investigation of what things students like about their physical education programs and what things they dislike about these programs. You will be asked to respond to statements concerning such things as the activities which are offered in your classes, the characteristics of your teacher and how s/he treats different students, the benefits you get from participating in physical education classes, and how you feel about yourself when you participate in physical education classes.

Your answers will remain anonymous as you are not required to write your name on the questionnaire. Your teacher will not read your questionnaire. Once it is completed, it will be placed in an envelope, sealed, and returned directly to the researcher.

Thank you for your assistance in this research.

Yours truly,

PHYSICAL EDUCATION QUESTIONNAIRE

DIRECTIONS :

Below, you will find a list of statements about physical education. I would like to know your opinion about each statement. Opinions about these statements vary among students. There are no right or wrong answers. Please respond to each statement according to your own opinion about physical education. Express your opinions by circling the response, to the right of each statement, which best indicates your level of agreement or disagreement.

Strongly Agree (SA) Disagree (D)

Agree (A) Strongly Disagree (SD)

1. My P.E. teacher treats all students the same, regardless of their ability.	SA	A	D	SD
2. I dislike participating in P.E. because I am not strong enough.	SA	A	D	SD
3. We concentrate too much on fitness in my P.E. classes.	SA	A	D	SD
4. I should be required to take P.E. after grade nine.	SA	A	D	SD
5. Even when I feel sick, I want to participate in P.E. class.	SA	A	D	SD

6. I like activities which are very strenuous.	SA	A	D	SD
7. I like P.E. activities because they provide excitement.	SA	A	D	SD
8. I learn how to work well in a group in my P.E. classes.	SA	A	D	SD
9. My P.E. classes are boring for the physically gifted student.	SA	A	D	SD
10. I should have one period of P.E. every day.	SA	A	D	SD
11. My P.E. classes are mainly for the athletically gifted student.	SA	A	D	SD
12. In my P.E. classes, I learn to respect the rights of others.	SA	A	D	SD
13. I am embarrassed to take P.E. because of my lack of physical development during adolescence.	SA	A	D	SD
14. When we learn new skills, my teacher helps only those students with good athletic ability.	SA	A	D	SD
15. My P.E. classes have little to offer the student with poor skills.	SA	A	D	SD
16. I believe I will be made fun of when I participate in P.E. classes.	SA	A	D	SD

17. To avoid participating in P.E. class, I often forget my gym clothes.	SA	A	D	SD
18. P.E. is just as important as my academic subjects.	SA	A	D	SD
19. The activities in my P.E. classes are mainly concerned with building big muscles.	SA	A	D	SD
20. I learn how to make decisions in my P.E. classes.	SA	A	D	SD
21. I do the same activities every year in my P.E. classes.	SA	A	D	SD
22. I always have my gym clothes for my P.E. classes.	SA	A	D	SD
23. It's too much trouble having to change into gym clothes for P.E. classes.	SA	A	D	SD
24. P.E. classes help me to understand the importance of exercise for good health.	SA	A	D	SD
25. In my P.E. class, participating is more important than winning.	SA	A	D	SD
26. My P.E. teacher seems to like teaching P.E. classes.	SA	A	D	SD

27.	Sometimes I pretend to be ill so that I will not have to participate in P.E..	SA	A	D	SD
28.	I would participate in P.E. even if I did not have to.	SA	A	D	SD
29.	I enjoy the physical contact sports I play in P.E. classes.	SA	A	D	SD
30.	I have individual activities, such as badminton and gymnastics, in my P.E. classes.	SA	A	D	SD
31.	I like physical activities which have beauty in movement, such as gymnastics and dance.	SA	A	D	SD
32.	I would rather participate in P.E. than in any other subject.	SA	A	D	SD
33.	I should have more than two periods of P.E. every week.	SA	A	D	SD
34.	I don't like the way I look in gym clothes.	SA	A	D	SD
35.	My P.E. teacher gives little help to the students with good skills.	SA	A	D	SD
36.	I should have to do P.E. in school.	SA	A	D	SD
37.	I am embarrassed to take P.E. because of my physical size.	SA	A	D	SD

38.	Physical fitness is an important part of my P.E. classes.	SA	A	D	SD
39.	There are too many team games in my P.E. classes.	SA	A	D	SD
40.	I can develop my physical fitness by participating in P.E..	SA	A	D	SD
41.	The activities I do in my P.E. classes help me to understand the games I watch.	SA	A	D	SD
42.	My P.E. classes have too much competition.	SA	A	D	SD
43.	I have time to develop my physical skills in my P.E. classes.	SA	A	D	SD
44.	Learning the rules of activities is an important part of my P.E. classes.	SA	A	D	SD
45.	My P.E. classes are well-organized.	SA	A	D	SD
46.	Changing into gym clothes in front of other students embarrasses me.	SA	A	D	SD
47.	I have opportunities to make new friends in my P.E. classes.	SA	A	D	SD
48.	I dislike P.E. activities which make me sweat.	SA	A	D	SD
49.	There is enough playing time in my P.E. classes.	SA	A	D	SD

50. There is little I can do in my P.E. classes because of my poor skills. SA A D SD
51. I like P.E. because it is about winning. SA A D SD
52. I find P.E. classes boring. SA A D SD
53. My P.E. class is only a play period between academic classes. SA A D SD
54. When I am much older, I will still be able to do the activities I learn in my P.E. classes. SA A D SD
55. Participating in my P.E. activities helps me to develop my self-confidence. SA A D SD
56. My teacher talks too much in my P.E. classes. SA A D SD
57. The activities in my P.E. classes are too rough. SA A D SD
58. I have fun in my P.E. classes. SA A D SD
59. Most of the activities in my P.E. classes are too physically demanding for me. SA A D SD
60. I can improve my strength by participating in P.E.. SA A D SD
61. I feel embarrassed participating in P.E. activities because of my poor skills. SA A D SD

62. My overall growth and development is improved by participating in P.E.. SA A D SD

63. My P.E. teacher praises only the students with good skills. SA A D SD

64. I can improve my coordination by participating in P.E.. SA A D SD

GENERAL INFORMATION

AGE: 12___ 13___ 14___ 15___

SEX: Male___ Female___

GRADE: 7___ 8___ 9___

P.E. TEACHER SEX: Male____ Female____

CLASS GROUPING: Which best describes your class?

All Boys _____

All Girls _____

Boys and Girls _____

BODY BUILD: For your age group, how would you rate your body build?

Over Size ____

Average ____

Under Size ____

FITNESS: For your age group, how would you rate your level of fitness?

In top condition ____

In good condition ____

In fair condition ____

In poor condition ____

SPORTS ABILITY: For your age group, how would you rate your ability in sports?

Excellent at sports ____

Good at sports ____

Average at sports ____

Fair at sports ____

Poor at sports ____

APPENDIX B

CORRESPONDENCE

Macdonald Drive Junior High
Macdonald Drive
St. John's, Newfoundland
A1A 2K9

1994-04-13

Superintendent
Appropriate School Board
Address

Dear Sir:

As part of the requirements for my Master of Education degree, under the direct supervision of Dr. G.A. Hickman and Dr. F. Cramm, I am conducting an indepth study of student attitudes toward physical education at the intermediate school level. This letter is a formal request for your assistance in this investigation. I request your permission to conduct a survey in the schools under your jurisdiction which have a student population enrolled in grades 7, 8, and 9.

In accepting the challenge and responsibility of contributing fully to the changing face of education, physical educators have been examining their personal philosophies, instructional practices, and program objectives to ensure a balanced program for the maximum number of students. Input from students concerning their opinions on aspects of existing physical education programs is essential if these programs are to be effective in meeting the needs of the students. Through your cooperation in permitting this study, students can have a voice in determining the direction of future physical education programming. The information gained may also be of assistance to the physical educators in your schools in determining the program objectives and instructional practices which they will employ in attempting to meet the needs of all students.

Enclosed, you will find a copy of the survey instrument for your perusal. The study will involve a total sample of approximately 250 students enrolled in grades 7, 8, and 9 in the schools under your jurisdiction. The total time needed to complete the survey is 30 minutes.

The study has been reviewed and approved by the "Ethics Review Committee" of the Faculty of Education and a copy of the committee's "Certificate of Approval" is enclosed. The information gained through the study will be strictly confidential and all guidelines established by the "Ethics Review Committee" will be strictly adhered to to ensure the anonymity of all parties involved in the study. At the completion of the study, a copy of the results will be submitted to your district

office to be made available to any board personnel, teachers, parents, students, and others interested in the findings.

In acknowledging that policies regarding parental/ guardian consent for student participation in some studies vary amongst school districts, I have enclosed a copy of a parental/ guardian consent form which will be used for this study.

Students' participation will be strictly voluntary and they may withdraw from the study at any time. Students will also be informed that they are free to refrain from answering any questions which they would prefer to omit. As several of the survey statements involve an evaluation of the teacher from the students' perspective, all students will be assured that their responses will be strictly confidential and that on their completion of the survey, it shall be placed in a sealed envelope and returned to the researcher.

Should you agree to comply with my request, I ask permission to approach the principals of the schools concerned to seek their assistance in the administration of the survey in their schools.

Thank you for considering my request. Should you have any questions or concerns please do not hesitate to contact me at Macdonald Drive Junior High, 753-8240, or at home, 781-0045. If you wish to speak with a resource person not associated with the study, please contact Dr. Patricia Canning, Associate Dean, Research and Development. I am hoping to carry out the study in April of 1994, and would appreciate a reply at your earliest convenience.

Yours truly,

Margaret H. King, (B.Ed., B.P.Ed,)

Thesis Committee:
Dr. G.A. Hickman
Dr. F. Cramm
Faculty of Education

Macdonald Drive Junior High
Macdonald Drive
St. John's, Newfoundland
A1A 2K9

1994-04-28

Principal
Appropriate School
St. John's, Newfoundland

Principal:

As part of the requirements for my Master of Education degree, I am conducting an indepth study, under the direct supervision of Dr. G.A. Hickman and Dr. F. Cramm, of student attitudes toward physical education at the intermediate school level. To assist me in the acquisition of the necessary data, I request your cooperation in conducting a survey of your students. It is hoped that through this survey, students can have a voice in determining the direction of future physical education programming. The information gained may also be of assistance to the physical educator(s) in your school in determining the program objectives and instructional practices which will be employed in attempting to meet the needs of all students.

The study has been reviewed and approved by the "Ethics Review Committee" of the Faculty of Education at Memorial University and the Superintendent of your school board has granted me permission to approach you with my request. The information gained through the study will be strictly confidential and all guidelines established by the "Ethics Review Committee" will be followed to ensure the anonymity of all parties involved in the study. On the completion of the study, a copy of the results will be submitted to the district office of the superintendent of your school board and made available for examination by any board personnel, school personnel, parents, and students who may be interested in the findings. A summary of the findings will also be submitted to the principals of those schools directly involved in the study.

Because of the extensiveness of the study , it is necessary to request the cooperation of your teachers in the administration of the survey. I have included copies of a letter to be given to these teachers requesting their assistance and outlining the specific tasks they are being asked to undertake. The survey consists of a 30 minute questionnaire which must be administered to male and female students in two grade 7, 8, and 9 classes. The surveys will be hand delivered to and picked-up from your school.

Students will be informed that their participation is completely voluntary and that they have the right to withdraw from the study at any time. They will also be informed that they are free to refrain from answering any questions which they would prefer to omit. As several of the survey statements involve an evaluation

of the teacher from the students' perspective, all students will be assured that their responses will be strictly confidential and that upon the completion of the survey, it shall be placed in a envelope which will be sealed and returned directly to the researcher.

I have included for your perusal copies of the questionnaire, a parental/ guardian consent form, and a letter to be submitted to teachers requesting their assistance in administering the surveys.

Should you have any questions or concerns, please do not hesitate to contact me at Macdonald Drive Junior High, 753-8240, or at home, 781-0045. If you wish to speak with a resource person not associated with the study, please contact Dr. Patricia Canning, Associate Dean, Research and Development, Memorial University.

Thank you for your consideration of my request. I am hoping to carry out the study in April/May of 1994 and would appreciate a reply at your earliest convenience.

Yours truly,

Margaret H. King (B.Ed., B.P.Ed.)

Thesis Committee:
Dr. G.A. Hickman
Dr. F. Cramm

Macdonald Drive Junior High
Macdonald Drive
St. John's, Newfoundland
A1A 2K9

1994-04-28

Appropriate School
St. John's, Newfoundland
A1A 3R9

Dear Colleague:

As part of the requirements for my Master of Education degree, I am conducting an indepth study, under the direct supervision of Dr. G.A. Hickman and Dr. F. Cramm, of student attitudes toward physical education at the intermediate school level. To assist me in the acquisition of the necessary data, I request your cooperation in conducting a survey of your students. It is hoped that through this survey, students can have a voice in determining the direction of future physical education programming. The information gained may also be of assistance to the physical educator(s) in your school in determining the program objectives and instructional practices which will be employed in attempting to meet the needs of all students.

Being an English and physical education teacher and having responsibilities for a grade eight homeroom myself, rest assured that I understand the demands which a request such as mine will make upon your time. Let me also assure you that the conducting of this study will be impossible without your cooperation.

Your assistance is asked in the following areas:

(1) The distribution and collection of parental/ guardian consent forms to students, which are required to meet ethical considerations for the participation of minors within research.

(2) The administration of the survey to those students who return the completed consent forms. This will take approximately 30 minutes.

(3) The placing of all surveys into the envelope provided, sealing the envelope, and returning it to your school principal.

The study has been reviewed and approved by the "Ethics Review Committee" of the Faculty of Education at Memorial University. The Superintendent of your school board and your school principal have granted me permission to conduct the study within your school. The information gained through the study will be strictly confidential and all guidelines established by the "Ethics Review Committee" will be followed to ensure the anonymity of all parties. At the completion of the study, a copy of the results will be submitted to district office of your school board to be made available to any board personnel, teachers, parents, students, and others interested in the findings. A summary of the

findings will also be submitted to the schools directly involved in the study.

If you have any questions or concerns, please bring them to your principal's attention or contact me directly at Macdonald Drive Junior High, 753-8240. If you wish to speak to a resource person not directly associated with the study, please contact Dr. Patricia Canning, Associate Dean, Research and Development, Memorial University.

Thank you for considering my request. I look forward to your participation in this study.

Yours truly,

Margaret H. King (B.Ed., B.P.Ed.)

Dear Parent or Guardian:

I am a physical education teacher with the Avalon Consolidated School Board and I am currently completing the requirements for a Master of Education Degree at Memorial University. As part of these requirements, I am conducting a study of student attitudes toward physical education at the intermediate school level. I will be surveying students at _____ _____ to examine their opinions on aspects of their current physical education program. I am requesting your permission for your child to participate in this study.

Your child's participation will involve the completion of a 30 minute questionnaire. Students will be informed that their participation is strictly voluntary and they may withdraw from the study at any time. Students will also be informed that they may refrain from answering any question they would prefer to omit. As several of the survey statements involve the evaluation of the teacher from the students' perspective, your child will be assured that his/her responses will be strictly confidential and that upon the completion of the survey, it will be placed in an envelope, sealed, and returned directly to the researcher.

All information is strictly confidential and individual responses will be anonymous. This study has been reviewed and approved by the Faculty of Education's Ethics Review Committee. A copy of the results of my research will be submitted to the district office of the Superintendent of your school board and made available for examination by board and school personnel, parents and students.

If you are in agreement with having your child participate in this study please sign below and return one copy to your child's homeroom teacher. The other is for you. If you have any questions or concerns please do not hesitate to contact me at Macdonald Drive Junior high, 753-8240. If at any time you wish to speak with a resource person not associated with the study, please contact Dr. Patricia Canning, Associate Dean, Research and Development.

I would appreciate your returning this sheet by_____.

Thank you for your consideration of this request.

Yours truly,

Margaret H. King

I _____ (parent/guardian) hereby give my consent for my child to take part in a study on student attitudes toward physical education undertaken by Margaret H. King. I understand that participation is entirely voluntary and that my child and/or I can withdraw permission at any time. All information is strictly confidential and no individual will be identified.

_____ _____

Date Parent's/Guardian's Signature