

INFORMATION TO USERS

This material was produced from a microfilm copy of the original document. While the most advanced technological means to photograph and reproduce this document have been used, the quality is heavily dependent upon the quality of the original submitted.

The following explanation of techniques is provided to help you understand markings or patterns which may appear on this reproduction.

- 1. The sign or "target" for pages apparently lacking from the document photographed is "Missing Page(s)". If it was possible to obtain the missing page(s) or section, they are spliced into the film along with adjacent pages. This may have necessitated cutting thru an image and duplicating adjacent pages to insure you complete continuity.**
- 2. When an image on the film is obliterated with a large round black mark, it is an indication that the photographer suspected that the copy may have moved during exposure and thus cause a blurred image. You will find a good image of the page in the adjacent frame.**
- 3. When a map, drawing or chart, etc., was part of the material being photographed the photographer followed a definite method in "sectioning" the material. It is customary to begin photoing at the upper left hand corner of a large sheet and to continue photoing from left to right in equal sections with a small overlap. If necessary, sectioning is continued again — beginning below the first row and continuing on until complete.**
- 4. The majority of users indicate that the textual content is of greatest value, however, a somewhat higher quality reproduction could be made from "photographs" if essential to the understanding of the dissertation. Silver prints of "photographs" may be ordered at additional charge by writing the Order Department, giving the catalog number, title, author and specific pages you wish reproduced.**
- 5. PLEASE NOTE: Some pages may have indistinct print. Filmed as received.**

Xerox University Microfilms

**300 North Zeeb Road
Ann Arbor, Michigan 48106**

SEPASI, Hossein, 1942-
AN ASSESSMENT OF ATTITUDES TOWARD PHYSICAL
ACTIVITY OF MICHIGAN STATE UNIVERSITY
UNDERGRADUATE STUDENTS.

Michigan State University, Ph.D., 1975
Education, higher

Xerox University Microfilms, Ann Arbor, Michigan 48106

AN ASSESSMENT OF ATTITUDES TOWARD PHYSICAL
ACTIVITY OF MICHIGAN STATE UNIVERSITY
UNDERGRADUATE STUDENTS

By

Hossein Sepasi

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

College of Education

1975

ABSTRACT

AN ASSESSMENT OF ATTITUDES TOWARD PHYSICAL ACTIVITY OF MICHIGAN STATE UNIVERSITY UNDERGRADUATE STUDENTS

By

Hossein Sepasi

Purpose

The requirement to take physical education courses has been under pressure during the last decade, particularly at institutions of higher learning. Studies indicate that students' attitudes favoring physical education as a required course were declining. In the early 1970's, Michigan State University was one of the institutions where physical education as a required course was eliminated and new physical activity courses were established on an elective basis for men and women.

The major purpose of this study was to determine the undergraduate students' attitudes toward physical activity in their university life.

Methods and Procedures

For the purpose of this study, 240 undergraduate students registered in the Fall term of 1974 at Michigan State University were randomly selected. Kenyon's Attitude Toward Physical Activity

Inventory, ATPA, Form D, which isolates six perceived values held toward physical activity was used as the instrument to assess the students' attitudes toward the six subdomains. A total of 233 students completed and returned the questionnaire. With unequal numbers of subjects per cell, the design was non-orthogonal and had several limitations. To obtain equal numbers of subjects per cell, only 208 students' responses were analyzed.

The questionnaire contained 59 items for males and 54 items for females. An average of the responses per item making up each subdomain was used as the dependent measure for analysis of variance and the analysis of variance (ANOVA) for each subdomain was computed from students' responses.

Results

Within the limitation of this study, the following results were obtained:

1. All undergraduate students who participated in this study perceived the value of physical activity similarly as measured by six subdomains.
2. Female students strongly endorsed the value of physical activity as an aesthetic experience.
3. Male subjects ranked the pursuit of vertigo as having the most meaning for them.
4. Both males and females did not show very strong opinions toward physical activity as an ascetic experience.
5. No significant interaction was found between the grade level and sex of the student respondents.

DEDICATION

For Nahid and Sepideh

ACKNOWLEDGMENTS

I wish to express my sincere appreciation and gratitude to Dr. William E. Sweetland, Committee Chairman, who has contributed to this project by his encouragement, suggestions, criticism, and guidance during the term of its planning and execution.

I am particularly grateful to Dr. Louise Sause for her interest, support, and suggestions.

I owe special thanks to Dr. Gale Mikles and Dr. Janet A. Wessel whose special knowledge and understanding in the area of physical education guided my efforts during the initial stages of this study.

I am also indebted to my wife, Nahid, for her patient understanding and encouragement during the course of this study.

Finally, I am indebted to my daughter, Sepideh, who was too small to know what I was involved in.

TABLE OF CONTENTS

	Page
LIST OF TABLES	vi
LIST OF FIGURES	viii
Chapter	
I. INTRODUCTION	1
Purpose of the Study	8
Hypotheses	9
Definition of Terms	10
Overview	11
II. THEORETICAL BACKGROUND	13
Major Attitude Inventories in the Field of Physical Education	14
Review of Literature	21
Summary	37
III. METHOD OF PROCEDURES	39
Finding the Instrument	39
The Attitude Inventory	41
Procedure for Obtaining the Scale	42
The Selection of the Sample	42
The Distribution of Questionnaire	44
Information Concerning Respondents to the Study	45
Summary	47
IV. ANALYSIS OF DATA	49
Hypothesis I	49
Hypothesis II	51
Hypothesis III	52
Hypothesis IV	54
Hypothesis V	62
Hypothesis VI	63
Summary	64

Chapter	Page
V. SUMMARY, DISCUSSION, CONCLUSION, AND RECOMMENDATIONS .	65
Summary	65
Discussion	67
Recommendations	71
Conclusion	72
BIBLIOGRAPHY	74
APPENDICES	85
A. The Letters	86
B. The Attitude Inventories	89

LIST OF TABLES

Table	Page
1. Selection of Samples from the Overall Population . . .	43
2. Sample Comparison to That of the Overall Population on the Basis of Sex and Class	44
3. Questionnaires Returned by Undergraduate Students . . .	45
4. Questionnaires Returned by Undergraduate Class After the Modification	46
5. Number of Items in Questionnaire for each Subdomain for Males and Females	46
6. Means of the Average Responses for Four Groups on Six Subdomains	50
7. Grade Comparison	50
8. Means of the Average Responses for Four Groups on Six Subdomains	51
9. Sex Differences	52
10. Subdomain I (Social)	53
11. Subdomain II (Fitness)	53
12. Subdomain III (Pursuit of Vertigo)	53
13. Subdomain IV (Aesthetic)	53
14. Subdomain V (Catharsis)	54
15. Subdomain VI (Ascetic)	54
16. Group Interactions	54
17. Subdomain I (Social)	56
18. Subdomain II (Health and Fitness)	57
19. Subdomain III (Pursuit of Vertigo)	58

Table	Page
20. Subdomain IV (Aesthetic)	59
21. Subdomain V (Catharsis)	60
22. Subdomain VI (Ascetic)	61
23. Scores of Male Students Within the Subgroups	62
24. Scores of Female Students Within the Subgroups	63

LIST OF FIGURES

Figure	Page
1. Mean Rank of Scale Items by Grade and Sex	34
2. Relationship Between Grade Level and Sex	55

CHAPTER I

INTRODUCTION

The study of physical education and its contribution to biological, psychological, sociological, and physiological needs of the individual have received great attention by a variety of disciplines. For example, The American Medical Association's Committee on Exercise and Fitness states that:

A varied physical education program is the key to encouraging life-long interest in vigorous activities. Comprehensive physical education programs teach all students to engage the benefits of exercise while promoting their physical and psychological development. Regular rigorous activity appropriate to age, sex, and health status is beneficial to everyone but a medically excepted few. Continuing research shows that adequate exercise and sports activities contribute significantly to good health. Regular exercise can be beneficial to controlling obesity, delaying degenerative disease, rehabilitating the ill or injured, and shortening recuperative periods. It is also unique in developing and maintaining physical fitness and in improving cardiovascular and respiratory efficiency.¹

Schools, colleges and universities are established in such a way as to improve the achievement of intellectual skill, knowledge, understanding, and appreciation necessary to making wise decisions, good judgments and logical analyses of problems. These institutions are agents of society's progress. They are directly or indirectly

¹Gallagher O. Roswell and others. "Need for Varied Activities in Physical Education Program," Journal of Health, Physical Education and Recreation, 36:6, January 1965.

involved in progress, whether it be knowledge, arts, technology, or social conditions. Since the student's potential as an individual is hopefully enlarged and fulfilled by his participation in schools and colleges, these institutions should be concerned with the well-being of the individual student in his preparation for a productive and happy life.

Physical education, as part of the total education process, helps in realizing these purposes. It is one link in a chain of many influences that help to realize a nation's ideals and contributes to the proper functioning of every society. By continually striving for excellence, physical education can become an increasingly dynamic force in general education.

Bucher's philosophy of education (1965) is based on the premise that "education is designed to help man achieve excellence, and that physical education as a part of general education plays a vital part in this role."² In 1968, Spears and Swire stated that "physical education at the college and university level should stress understanding the place of physical activity in the maintenance of optimum well-being of the individual, attaining the necessary competencies, and meeting the present and future needs of the students for activity and self-realization."³

²Charles A. Bucher, "Health, Physical Education and Academic Achievement," NEA Journal, 54:38-40, May 1965.

³Betty Spears and Dale Swire, "From Philosophy to Practice," Journal of Health, Physical Education and Recreation, 39:39-41, October 1968.

Rarich (1969) indicated that including "physical education in the intellectual program, as a required subject, is justified by the belief that it has a positive influence on the health and physical well-being of students." "In addition, to satisfy the certain needs of students, physical education helps to develop proficiency in the motor skills characteristics of any culture and this produces the basis for a physically active adult life."⁴

Some educators believe that physical activities offer an ideal medium for the social and emotional development of students.^{5, 6}

Physical education has served different purposes in different eras. During the sixteenth and seventeenth centuries, the German and Swedish systems had profound influences on the early development of the field of physical education in Europe.⁷ To the German system, physical education was meant to be the preparation of men for war through the development of strength and endurance activities. In the Swedish system, however, emphasis was mainly given to the improvement

⁴Lawrence G. Rarich, "Research on the Value of Physical Education," Theory Into Practice, 3:108-11, 1964.

⁵Harry Edwards, Sociology of Sport, Illinois: The Dorsey Press, 1973.

⁶Warren R. Johnson and Charles N. Cofer, "Personality Dynamics," in Science and Medicine of Exercise and Sport, (2nd ed.), Warren R. Johnson and E. R. Buskirk, eds., New York: Harper and Row, 1974.

⁷Deobold B. Van Dalen and Bruce L. Bennett, A World History of Physical Education, Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1971, Chapter 13.

of physical organisms. And, it was the Swedish system that became the basic purpose of physical education in early America.⁸

Later, the Americans made major changes and adopted a new physical education program. Except in the time of war, the individual physical, social and emotional needs were taken into consideration by the means of a program of training in games, sports, rhythms, self-testing, and conditioning. Following this time, we witnessed an era in which the emphasis was directed to physical fitness necessary for day-to-day living.⁹

"Terms such as movement education, movement explorations, sensory-motor training, and perceptual activities of recent vintage, and bear witness to the change in curricular content of physical education programs."¹⁰

In fact, these changes, especially at institutions of higher learning, can be traced to the efforts and dedication of both faculty and students. The United States, with a short history of existence, actually owes much of its progress and advancement to the contribution of critical thinking of scholars and active participation by faculty and students. Of course, during these past years, physical education, as a part of the educational process, has definitely been challenged on the basis that physical education courses would not meet the intellectual needs of students.

⁸Ibid., p. 238.

⁹Ibid., p. 374.

¹⁰Vern Seefeldt, "Perceptual-Motor Skills" in An Introduction to Measurement in Physical Education, Henry O. Montoye, ed., Indiana: Phi Epsilon Kappa Fraternity, 1970, Vol. 2, Chapter 3.

The University of Bridgeport conducted a survey to ascertain the attitudes of its students toward a number of questions pertaining to the required physical education curricula between 1959 and 1969.¹¹ Results indicate that seventy percent of students favored the requirement of physical education in 1959, and this was dropped to twenty-eight percent in 1969.

Studies conducted in recent years compare the past and present status and practices in general instructional programs of physical education in four-year colleges and universities in the United States. Oxendine^{12, 13} reported two such studies in 1968 and 1971 and he compared the results to obtain further information regarding the attitude changes, if any, toward the status of required physical education programs in higher learning institutions. In his study (1971), using a questionnaire technique, Oxendine surveyed the Chairmen of Physical Education Departments in 1,143 four-year colleges and universities. The results indicate that: (1) 95 percent offered programs in physical education on the general college students; (2) 74 percent of the institutions surveyed had physical

¹¹David A. Field, "A Comparison of Attitude Toward Physical Education at the University of Bridgeport," *Physical Educators*, 27:126-80, October 1970.

¹²Joseph B. Oxendine, "The Status of General Instructional Programs of Physical Education in Four-Year Colleges and Universities," in *College Physical Education: General Program*, Helen M. Heitmann, ed., Washington, D.C.: American Association for Health, Physical Education, and Recreation, 1972.

¹³_____, "The 1968 Status of Required Physical Education Programs in Four-Year Colleges and Universities in the U.S., Washington, D.C.: American Association for Health, Physical Education, and Recreation, 1968.

education in their educational program as a required course for all students; (3) a decline of 10 to 15 percent was found in the number of institutions requiring physical education from 1968 to 1971; (4) an increasing tendency was found in favor of physical education courses to receive academic credit and to count in the grade point average; and (5) despite elimination of required physical education programs, some institutions reported that students were more willing to participate in elective physical education programs and their attitudes toward the new program seemed satisfactory. One can draw the same conclusion from the study reported by Ruffer in 1970.¹⁴

Dressel (1961), on the other hand, believes that higher learning institutions should primarily be held responsible to meet the intellectual needs of students.¹⁵ He views physical education as nonacademic subject matter which has provided some problems on colleges and universities. In fact, Montebello (1959) conducted an interview study to examine the advisability of physical education requirements in the general educational program.¹⁶ The major problems and concerns of those who interviewed in this regard were as follows: the amount of time spent by students in courses such as physical education; physical education does not meet the criteria

¹⁴William A. Ruffer. "A Study of Required Physical Education for Men in the U.S. Colleges and Universities." Physical Education, 27:79-81, May 1970.

¹⁵Paul L. Dressel, Evaluation in Higher Education, Boston: Houghton-Mifflin Company, 1961.

¹⁶Robert A. Montebello, "Should Physical Education be Required During the Undergraduate Program?" Journal of Health, Physical Education and Recreation, 30:35, December 1959.

of academic programs; questioning the medical benefit of required physical education. This study, however, was not broad enough to be generalized.

Consequently, these problems led some institutions to the consideration of dropping physical education as a required course and to ignoring the grades earned by students in these courses. One can draw the same conclusion from the work of Biles (1973) in that he says "we as a profession should be ready to accept the fact that physical education courses will no longer be required."¹⁷

In 1958, Michigan State University was one of the universities where the old concept of physical education was challenged, and an effort was made to change and adapt to a physical education program with new emphasis to meet the needs of students. Based on the belief that a physically educated person is one who has the habits, skills, knowledge, and appreciation of movement that are essential for living, working, and playing at optimum physical potential throughout his lifetime. University approval was granted to require physical education courses for all first-term freshmen (men and women) in the Fall of 1958.¹⁸ Although the new physical education as a required program attracted favorable reaction by students and faculty, in the early 1970's physical education as a

¹⁷Fay Biles. "Let's Play: Carry-over Activities," in College Physical Education, Helen M. Heltmann, ed., Washington, D.C.: American Association for Health, Physical Education and Recreation, 1972, p. 43.

¹⁸Janet A. Wessel, John A. Friedrich and Dorothy A. Kerth. "A New Approach in the College Required Program." Journal of Health, Physical Education, and Recreation, 31:17, November 1960.

required course was eliminated and new physical activities courses on an elective basis for men and women were established.

Purpose of the Study

The major concern of this study was to determine student attitudes toward physical activities in their university life. To elaborate, numerous studies reported in professional literature point to the role that attitude play in learning. For example, Campbell (1968) says "attitudes serve as the motivating media to condition a student's orientation to learning and to influence the use of skill and knowledge which have been learned."¹⁹ Thus, from his work and the work of others,^{20, 21} it can be concluded that attitudes play an important role because the attitude determines an individual's willingness to learn.

Consequently, this study will attempt to determine students' attitudes toward the value and participation of physical activity and, hopefully, based on what will be found, the writer will have the opportunity to find out how the physical activity was perceived by the university students.

Furthermore, since this writer is from a foreign country (Iran), it will be his intention, upon his graduation, to return to his country, and to participate in designing and developing a sound

¹⁹Donald E. Campbell, "Student Attitudes Toward Physical Education." Research Quarterly, 39:456-62, October 1968.

²⁰L. L. Thurston, "Attitude Can Be Measured," American Journal of Sociology, 33:529, 1928.

²¹Daniel H. Katz, "The Functional Approach to the Study of Attitude," Public Opinion Quarterly, 24:163-204, 1960.

physical activity program for Iranian higher education institutions. Information which will be obtained from this study will serve as a fundamental guideline in accomplishing that purpose.

Frederickson (1974) an anthropologist, remarks that,²²

An understanding of the current cultural definitions of work and play in American culture would seem to be a basic requirement for all those concerned with the administration of sports and physical education, as a prerequisite to policy making, programming and action.

Hypotheses

This study intends to obtain the attitude of Michigan State University undergraduate students toward physical activity in their university lives. Therefore, the following six hypotheses will be tested in investigating attitudes of these students toward the physical activity as six subdomains.

1. There will be no significant differences between the scores on a measure of attitude toward the value of physical activity of Michigan State University Freshmen, Sophomore, Junior, and Senior undergraduate students.

2. There will be no significant differences between the scores on a measure of attitude toward the value of physical activity of Michigan State University undergraduate male and female students.

²²Florence S. Frederickson, "Sports and the Cultures of Man," in Science and Medicine of Exercise and Sports, Warren R. Johnson, ed., New York: Harper & Row Publishers, 1974, p. 430.

3. There will be no significant interactions between grade level, i.e., Freshmen, Sophomores, Juniors, and Seniors and sex, i.e., males and females on attitude toward physical activity.

4. There will be no significant difference between the scores on a measure of attitude toward the value of physical activity of male and female undergraduate students within each grade level.

5. There will be no significant differences in scores on a measure of attitude of male Freshmen, Sophomore, Junior and Senior students toward the value of physical activity, sex subdomains.

6. There will be no significant differences in scores on a measure of attitudes of female Freshmen, Sophomore, Junior, and Senior students toward the value of physical activity, sex subdomains.

Definition of Terms

In order to avoid confusion, definitions of certain terms in this paper are given.

Physical Education: "is that part of the educational process which contributes to the mental, physical, social, and emotional growth and development of each person through the medium of physical activity."²³

²³Charles A. Bucher, "Foundation of Physical Education," St. Louis: C. V. Mosby Co., 1952, p. 30.

Physical Activity: "denotes organized (structured) non-utilitarian (in an occupational or maintenance sense), gross human movement, usually manifested in active games, sports, calisthenics, and dance."²⁴

Attitude: "an attitude is a mental and neutral state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related."²⁵

An attitude is a latent or non-observable, complex, but relatively stable behavioral disposition reflecting with direction and intensity of feeling toward a particular object, whether it be concrete or abstract."²⁶

Opinion: "the concept 'opinion' will mean a verbal expression of attitude."²⁷

Overview

Chapter I began by looking at how the concept of this study developed. The purpose and need for this study was examined. The statistical questions pertaining to the study in the form of null

²⁴Gerald S. Kenyon, "Sport Culture and Society," New York: MacMillan Publishing Co., 1969, p. 71.

²⁵G. W. Allport, "Attitude" in a Handbook of Social Psychology, C. Murchison (ed.), Worcester, Massachusetts: Clark University Press, 1935, p. 80.

²⁶Gerald S. Kenyon, "Six Scales for Assessing Attitude Toward Physical Activity," Research Quarterly, 39:566-75, 1960.

²⁷Thurstone, op. cit., p. 526.

hypotheses, all of which will be tested in the Chapter IV, were stated.

Chapter II presents the theoretical background of the subject in question, and examines major attitude scales constructed in the field of physical education. A review of literature pertaining to college students attitudes toward the value of physical education and physical activity will be discussed.

Chapter III will deal with the method and procedures in this study, attitude scales used in this study, sampling technique, and also information concerning respondents to the study.

Chapter IV will be concerned with analysis of data.

A final part of this study, Chapter V, will be devoted to the summary, with a discussion of findings, conclusions and recommendations.

CHAPTER II

THEORETICAL BACKGROUND

Sociologists, social psychologists, and educators have always been interested in finding a scientific technique to measure the traits, character, attitudes, opinions and desires which refer to acquired and conditioned action-patterns that motivate human social behavior. Since one of the most widely accepted concepts is that the individual must be motivated to learn, and that his attitude determines his willingness to acquire knowledge, the importance of the study of attitude and motivation and inventing instrument to measure these phenomena is obvious to a variety of disciplines. What made it difficult for scholars, however, was lack of a scientific technique to measure these disputed social behaviors.

The work of Thurstone,²⁸ Allport,²⁹ Bain,³⁰ Likert,³¹ Katz³² and others was significant to such an extent that attitudes can no longer be considered to be unmeasurable.

²⁸Thurstone, op. cit., pp. 529-54.

²⁹G. W. Allport, The Study of the Undivided Personality, J. of Abner, and Soc. Psychol., 19:132-41, 1924.

³⁰Read Bain, An Attitude on Attitude Research, American Journal of Sociology, 33:440-957, 1928.

³¹Reusis A. Likert, A Technique for the Measurement of Attitudes, Archives of Psychology, 22:5-43, 1932.

³²Katz, op. cit., pp. 163-204.

It has been of great interest, especially to physical educators, to ask the question: Why do people engage in physical activities and sports? Are there any motives or needs which cause people to spend some of their time engaging in different physical activities and sports? Why does physical activity mean different things to different cultures? In answering these questions, the source of motivating for involvement in physical activity and sports has received extensive investigation. Since the study of an individual's attitudes and opinions would lead to better understanding of his social behavior, an attempt has been made by physical educators to investigate and describe the purpose of participating in physical activity and to design an instrument by which these attitudes can be measured.

An attempt has been made in this chapter to first review the major attitude inventories constructed in the field of physical education, physical activity, health, and recreation, and second, to examine the relevant literature investigating student's attitudes toward the value of physical education and physical activity contributing to well-being of the individuals.

Major Attitude Inventories in the Field of Physical Education

There are evidences indicating that American culture impresses on young boys and girls the desire to participate in games and

³³Lawrence G. Rarick, "Competitive Sports in Childhood and Early Adolescence," in Physical Activity: Human Growth and Development, Lawrence G. Rarick, ed., New York: Academic Press, 1973, Chapter 14.

athletic programs which are assumed to be appropriate for each sex.³³ To some parents, engagement of their children in varsity athletic programs has been of great concern. The idea led McCue (1953) to develop a scale for evaluating attitudes toward incentive competition in team games for high school boys and college men.³⁴ She used a combination of the Thurston and Likert methods of selecting items, with the response to each item indicated by the degree of approval or disapproval. Further, she classified varsity athletic programs by the degree of their intensities and provided statements appropriate to each category.

She presented the inventory to a group of experts in the field of physical education who marked the scale in two different ways. One, to indicate the degree of favorability or unfavorability expressed by the item statement (on a five-point scale) and second, to express the degree of their own personal acceptance or rejection of opinion expressed by the item statement (on a five-point scale). Stability or internal consistency of .70 was reported for this scale.

McAfee (1955)³⁵ and Johnson (1969)³⁶ reported scales to assess the change in sportsmanship attitudes during the maturing year.

³⁴Betty F. McCue, "Constructing an Instrument for Voluntary Attitude Toward Intensive Competition in Team Games," Research Quarterly, 24:205, May 1953.

³⁵Robert A. McAfee, "Sportsmanship Attitude of Six, Seventh, and Eighth Grade Boy," Research Quarterly, 26:120, March 1955.

³⁶Marion L. Johnson, "Construction of Sportsmanship Attitude Inventory," Research Quarterly, 40:312, May 1964.

McAfee administered the Sportsmanship Preference Record to 857 sixth, seventh and eighth grade boys. The attitude inventory consisted of twenty choice situations. A correlation coefficient of .80 and an empirical validity coefficient of .53 was reported between test scores and behavior rating. McAfee, in this study, did not mention his construction procedures.

Mayshark (1956)³⁷ and Meyers (1958)³⁸ designed a safety attitude scale for the seventh graders.

Mayshark constructed a total of 188 item statements and presented them to a group of 22 graduate students with experience in the field of physical education, health, recreation, and safety, plus five professors in these fields. Then, he administered the final form to a group of seventh graders to indicate the degree of agreement or disagreement expressed by the item statements (on a four-point scale).

A reliability coefficient of .897 was obtained for the group sampled. No validity means were reported.

There has been a growing tendency among the women to chose physical education as their careers. Thus, Drinkwater (1960) reported an attitude inventory for the purpose of determining the attitude of high school girls toward physical education as a career for women.³⁹

³⁷Cyrus Mayshark, "A Health and Safety Attitude Scale for the Seventh Grade," Research Quarterly, 27:52-59, March 1956.

³⁸Frank H. Meyers, "A Safety Attitude Scale for the Seventh Grade," Research Quarterly, 29:320, October 1958.

³⁹Barbara C. Drinkwater, "Development of an Attitude Inventory to Measure the Attitude of High School Toward Physical Education Education as a Career for Women," Research Quarterly, 31:575, Dec. 1960.

He used Likert's method in constructing 88 item statements. This attitude inventory was presented to a group of 208 high school girls to obtain their favorability and unfavorability attitudes toward physical education as a career for women.

No validity and reliability of the attitude inventory was reported.

In the early 1960's emphasis was given to the development of physical fitness and exercise which was thought to be essential in improving individual potentials. In fact, it received such publicity that it was often used as an objective school physical education program. Hence, Richardson (1960), employing modified Thurstone techniques, reported an attitude inventory for the purpose of assessing attitudes of college students toward physical fitness and exercise.⁴⁰

He prepared 72 physical fitness and exercise opinion statements by the means of sentence completion using college freshmen as subjects. These opinion statements were judged by experts in the field of physical education. Upon completing the preliminary steps, the revised scale was presented to 300 Southern Illinois University students who expressed their opinions by marking each statement on the basis of a five-point scale. A high reliability coefficient of $.83 \pm .06$ between the test and retest was a sufficient indicator of measuring the internal consistency. Richardson reported authoritative opinion and expert judgment to indicate the test validity.

⁴⁰Charles E. Richardson, "Thurstone Scale for Measuring Attitude of College Students Toward Physical Fitness and Exercise," Research Quarterly, 3:636, December, 1960.

McPherson (1968) developed an attitude inventory for determining the psychological effect of exercise on normal adult men. His major objective, however, was to determine the intensity of attitudes toward exercise and physical activity before an exercise program, and to examine whether changes in attitudes occurred after a 24 week program of graduated exercise.⁴¹

He presented the attitude inventory to a group of high school teachers to test the degree of reliability and validity. A reliability ranging from +.81 to .95 was reported. McPherson employed t-test to determine the validity of the attitude inventory. A t ratio of 6.67 was found (P was significant at .001).

After analyzing the dimensions involved in physical education, Wear (1951), using the Likert method, reported an attitude inventory to evaluate college students' attitudes toward physical education as an activity course. He administered this inventory to a group of students enrolled in required physical education for men at the University of Iowa. The men were asked to mark each statement based on a five-point scale. The reliability of consistency of .96, which is statistically satisfactory, was reported to be sought by implementing comprehensive statements and substantial relationship between the items.⁴²

⁴¹D. B. McPherson, "An Inventory of Assessing Men's Attitudes Toward Exercise and Physical Activity," Research Quarterly, 39:218, March 1968.

⁴²Carlos L. Wear, "Evaluation of Attitude Toward Physical Education as an Activity Course," Research Quarterly, 22:114-26, 1951.

In his inventory Wear was interested in making an objective assessment of expressed attitude as measured by short-term or long-term experiences. By that he meant an assessment of attitudes change and degree of change as a result of reading assignment, seeing a film, listening to a talk, watching some activity, or participating in some activity.

One hundred and twenty original statements were prepared and classified into four categories. The categories were "physiological-physical," "mental-emotional," "social," and "general." Next, he constructed two forms, A and B, each consisting of 30 statements. He administered the two forms (A, B), to 100 male university freshmen together with a short questionnaire consisting of three questions and a graphic self-rating scale on attitudes toward physical education.

The average mean of the scores on Form A was reported to be 114.59 with SD of 17.74. The average mean of the scores on Form B was 114.45 with SD of 17.67. The reliability of consistency of Form A was .94 and reliability of Form B was .96. The product-movement correlation between scores on the two forms was .96.⁴³ Because of statistically satisfactory reliability and validity reported for this inventory, it received special attention by physical educators using the so-called Wear Physical Education Attitude Inventory (WPEAI) as their instruments assessing students' attitudes for their project's own purposes.

⁴³Carlos L. Wear, "Construction of Equivalent Forms of an Attitude Scale," Research Quarterly, 26:113-19, March 1955.

Because of some inadequacy felt in inventory previously mentioned, Kenyon (1968) proposed a conceptual framework based on a logical analysis of the function allegedly served in contemporary society by physical activity.⁴⁴ His attempt was to construct an inventory by which college students' attitudes toward physical activity as a sociopsychological phenomenon could be measured. He did not seem to view physical activity merely as a general term but instead taught it as a multidimensional domain. He defined physical activity as six independent domains: social, health and fitness, pursuit of vertigo, catharsis, aesthetic, and ascetic experience. Therefore, he generated models for the purpose of facilitating the characterization of attitudes toward physical activity and at the same time, constructed a means by which the relationships within the context of a given model can be determined.

Seventy-three Likert-type attitude statements were evaluated by judges and upon their revision into an inventory, it was administered at 176 college men and women students. The so-called Kenyon's Attitude Toward Physical Activity (ATPA) Inventory Form D consists of six dimensions or scales, a total number of 59 items for males and 54 items for females, for assessing attitudes toward physical activity. "Hoyt reliabilities, ranging from .72 to .89 were reported for this attitude inventory."⁴⁵ "Comparative measures

⁴⁴Gerald S. Kenyon, "A Conceptual Model for Characterizing Physical Activity," Research Quarterly, 39:96-105, March 1968.

⁴⁵Kenyon, op. cit., p. 566.

of central tendency, variability and reliability between two similar populations indicate instrument stability."⁴⁶

The work of Wear (1955), and Kenyon (1968), in recent years, is distinguished from others by measuring college individuals's attitudes toward the value of physical activity. Their attitude inventories are in Appendix B. More will be heard about their instruments in the next chapter.

Review of Literature

The remainder of this chapter will be devoted to a review of the literature on attitudes of students toward physical education activities relevant to this study.

Smith (1933) conducted a study in order to obtain students' attitudes toward the value of recreational activities during their college career or after leaving the university. For this purpose, 650 male students were randomly selected from the University of Minnesota and a research survey was employed. Based on his results, 72 percent gained advantage from the program and 94 percent of those surveyed had a favorable attitude toward the value of a physical education program.⁴⁷

⁴⁶Richard B. Alderman, "A Sociopsychological Assessment of Attitude Toward Physical Activity in Champion Athletes, Research Quarterly, 4:1-9, March 1970.

⁴⁷W. R. Smith, "A Questionnaire Study in Regard to the Attitude of Men Students Toward the Required Physical Education Program," Research Quarterly, 4:249-58, March 1933.

Moore (1941) felt that there was a lack of participation of women students in the provided physical activity program at the University of California in Los Angeles.⁴⁸ This fact led him in 1941 to conduct a study to evaluate the actual attitude of college women and also to determine what they felt to be the underlying causes for this lack of participation.

Ten percent ($N = 179$) of all junior and senior women served as her subjects. An interview technique was used to determine students' attitudes toward participating in physical activity. The result of this study showed a highly favorable general attitude among college women toward physical activity. However, the average amount of time spent in physical activity was low, with approximately 50 percent of the women spending less than four hours per week. The main reasons for not spending more time on physical activity were lack of time owing to the study, lack of companions, and outside work.

Bell and Walters (1953) using the questionnaire technique, surveyed the attitudes of female freshmen and seniors in order to evaluate the physical education program at the University of Michigan. Based on the results of their study, one can draw the following conclusions: (1) a greater percentage of the freshmen than seniors thought that the required physical education program was accomplishing its objectives; (2) the freshmen who had physical

⁴⁸Beverly Young Moore, "The Attitude of College Women Toward Physical Activity as a Means of Recreation," Research Quarterly, 12:720-25, December 1941.

education in high school had a more favorable attitude toward physical education as an activity course than freshmen who had no physical education in high school; (3) both groups, freshmen and seniors, felt that participating in physical activity courses contributed to their social, physical and emotional health.⁴⁹

Scott (1953), using a revision of the McCue Attitude Scale conducted a survey research to determine the attitudes of three populations: parents, teachers and administrators, toward intensive athletic competition at the elementary school level. A total of 1,099 subjects from 7 states within the Central District of the American Association for Health, Physical Education and Recreation responded to the scale. Of these 1,099 respondents, 387 were parents, 508 classroom teachers and 234 administrators, including supervisors of physical educators.

After analyzing the data it was concluded that: (1) a majority of all 3 populations marking the scale tended to be favorable in attitude toward intensive competition at the elementary school level; (2) the men of this study indicated more favorable attitudes toward intensive competition than did the women; (3) statistically significant differences were found in the attitude of parents, teachers, and administrators. The parents did not favor intensive competition at the elementary school level and the administrators were the least favorable.⁵⁰

⁴⁹Margaret Bell and Etta C. Walters, "Attitude of Women at the University of Michigan Toward Physical Education," Research Quarterly, 24:379-91, 1953.

⁵⁰Phebe M. Scott, "Attitudes Toward Athletic Competition in Elementary Schools," Research Quarterly, 24:352-61, October 1953.

Broer and his co-workers (1955), using the WPEAI, designed a questionnaire study to measure attitudes of University of Washington freshmen and sophomore women students toward physical education, in the spring of 1953. The attitude inventory was administered to a group of freshmen and sophomore women students who were at that time enrolled in physical education activity classes.⁵¹

The following conclusions were reported:

1. The great majority of the freshmen and sophomore students expressed very favorable attitudes toward physical education as an activity course.

2. Students participating in individual sports such as swimming and tennis had the most favorable attitudes toward physical education activity.

3. A large percentage of these students agreed that physical education activity classes contribute to social, mental, and physical development.

In another study Broer (1955) using the WPEAI, reported a questionnaire study for the purpose of determining whether special instruction in physical education programs will help the low motor ability of college freshmen women to improve their attitudes toward the values of physical education attitudes.⁵² He administered the

⁵¹Marion R. Broer, K. S. Fox, and Eunice Way, "Attitude of University of Washington Students Toward Physical Education Activity," Research Quarterly, 26:374-84, December 1955.

⁵²Marion R. Broer, "An Evaluation of A Basic Skills Curriculum for Women Students of Low Motor Ability at the University of Washington," Research Quarterly, 26:15-26, March 1955.

attitude inventory to the entering freshmen women students of low motor ability at the University of Washington in 1955. The results indicated that subjects improved this general motor ability as a result of participating in the basic physical education course. However, Broer reported that improvement in attitudes of these subjects toward the value of physical education activities was dependent on the background of basic physical education instruction and the preliminary procedures.

Shaw and Cordts (1960), using the principles and guidelines for physical education programs established by the American Association for Health, Physical Education and Recreation, the College Physical Education Association, and the National Association for Physical Education of College Women, surveyed 300 institutions of higher learning by the means of questionnaires. What they found was that procedures related to philosophy and objectives, administration programs, and evaluations were usually similar in all those institutions surveyed.⁵³

There have been efforts to find out if students perceived the values of physical education activities similarly, and if men and women differed in this regard. In his study, Keogh (1962) concludes that no significant difference occurred in student attitudes toward the values of physical education. However, both men and women supported the social, physical and emotional values of physical

⁵³John H. Shaw and John F. Cordts, "Status of the Physical Education Required or Instructional Programs in Four-Year Colleges and Universities," Research Quarterly, 31:409, October 1960.

education. One hundred and thirty-six men and 136 women undergraduates at the University of California in Los Angeles, served as his subjects and the WPEAI (Form D) was employed.⁵⁴

Having had original data from his previous study, one year later Keogh analyzed stated attitude responses and selected descriptive information in relation to two groups of men and women who demonstrated extreme attitudes toward physical education. From the original group of 266 subjects, 96 men and women were selected whose scores on the WPEAI were extremely high or low.⁵⁵

His conclusion, based on this study, was that no significant difference was found in males and females within the extreme groups. The lower group offered some minimum support for the results of physical education, but they rigorously questioned the relative value of physical education as a school program.

Wessell and Nelson (1964) using the WPEAI, were interested in investigating if: (1) there was a relationship between physical strength and attitude toward physical education, and (2) if there was a relationship between physical strength of women whose stated responses toward physical activity were extremes of high or low.⁵⁶

⁵⁴ Jack Keogh, "Analysis of General Attitude Toward Physical Education," Research Quarterly, 33:239-44, May 1962.

⁵⁵ _____, "Extreme Attitude Toward Physical Education," Research Quarterly, 37:27-33, March 1963.

⁵⁶ Janet A. Wessell and Richard Nelson, "Relationship Between Strengths and Attitudes Toward Physical Education Activity Among College Women," Research Quarterly, 35:562-64, December 1964.

For this purpose 200 Michigan State University female undergraduate students served as the subjects. They concluded that the subjects surveyed expressed a very favorable attitude toward physical education as an activity course. They also found that strength may be a factor for successful performance or achievement in physical education among college women.

Based on their study, they made the following recommendations: "it may be also postulated that lack of strength may be a factor in negative personal feelings resulting from repeated failures in any physical activity encountered." "If the primary goal in our school program is to develop self-motivated and self-directed individuals then we must know the conditions of learning that contributed to the development of positive attitudes toward continued satisfactory, active participation for each individual."⁵⁷

Brumbach and Cross (1965) designed an investigation to measure the attitudes toward physical education of all male, lower division students entering the University of Oregon.⁵⁸ They used the WPEAI Short Form, as the instrument in obtaining students' attitudes. Some of the conclusions were:

1. This group had a rather favorable attitude toward physical education.
2. The more years of physical education a student has had in high school, the better his attitude is likely to be.

⁵⁷Ibid., p. 568.

⁵⁸Wayne B. Brumbach and John A. Cross, "Attitude Toward Physical Education of Male Students Entering the University of Oregon," Research Quarterly, 36:10-16, March 1965.

3. Students who attended smaller high schools (enrollment under 300) had better attitudes than those from larger schools.

Mista (1964)⁵⁹ reported a questionnaire study for the purpose of determining what background factors contribute to the development of the students' attitude toward physical education. She administered a revised form of the Planner Attitude Inventory and a background information questionnaire to 1,126 freshmen college women enrolled in the private four-year college in Iowa in September of 1964.

She found no significant differences in attitudes toward physical education between college freshmen women who had physical education in high school and those who had not had physical education experience in high school. Furthermore, it was concluded that freshmen women who grew up on a farm had significantly better attitudes toward physical education than those who did not grow up on a farm. Also, the conclusion of this study revealed that college women who planned to become physical education teachers showed better attitudes toward physical education than those who did not have the desire to do so.

Schwartz (1966)⁶⁰ attempted to measure the attitudes of male students toward the required physical education program at Chardon

⁵⁹Nancy D. Mista, "Attitudes of College Women Toward Their High School Physical Education Programs," Research Quarterly, 39:166-74, March 1968.

⁶⁰James Franklin Schwartz, "The Attitudes of Male Students Toward the Required Physical Education Program at Chardon State College, Master's Thesis, 1966.

State College, using the questionnaire technique, 270 students enrolled in physical education classes served as subjects.

What was found was that, like some other studies already mentioned, the majority expressed a favorable-to-highly favorable attitude toward physical education. More specifically, they felt a need for physical education as a part of their educational experience. In the meantime, they said they benefited physically and socially through physical education activities. Furthermore, a majority of the subjects said they would have participated in physical education programs if it was offered as a required program.

Sloan and Liba (1966) investigated the effect of varying degrees of participation in physical education based on achievement in selected characteristics by conducting a study using 300 women students from the University of Wisconsin, assigned in 4 different groups. One group participated in the required program for one year, a second group for two years, a third group was not enrolled in physical education, and a fourth group was given the option of electing or not electing physical education. Characteristics studied were knowledge, posture, recreational proficiency and some aspects of physical fitness.⁶¹

"At the end of one year, participators differed significantly from non-participators in posture, knowledge, and the number of pull-ups they could perform." "At the end of two years, those required to

⁶¹Muriel R. Sloan, Marie R. Liba, "Effect of Participation in Physical Education and Achievement in Selected Characteristics," Research Quarterly, 37:411, October 1966.

participate differed significantly from all other subjects in posture and knowledge." "Participators were judged to be generally more proficient in recreational activities than non-participants who claimed proficiency."⁶²

Bell and Mayer (1966),⁶³ using the modified WPEAI, conducted an attitude survey toward the required physical education program with women students at Northern Illinois University. Four hundred and forty-four freshmen and 382 juniors served as subjects and questionnaires were employed. The findings of this investigation indicated: (1) most students preferred individual sports; (2) both female freshmen and juniors showed a highly favorable attitude toward physical education; and (3) both groups questioned the stated objectives in teaching the required program and demanded for a re-evaluation of methodology and interpretation of the stated objectives.

Vincent (1967) was interested in determining the attitude of college women toward physical education, and finding the relationship between these expressed attitudes and success in a variety of physical education activities. The WPEAI was administered to 188 college women in a variety of physical education activities.⁶⁴

⁶²Ibid., p. 411.

⁶³Marilyn F. Vincent, "Attitudes of College Women Toward Physical Education and Their Relationship to Success in Physical Education," Research Quarterly, 38:126-31, March 1967.

⁶⁴Marilyn F. Vincent, "Attitudes of College Women Toward Physical Education and Their Relationship to Success in Physical Education," Research Quarterly, 38:126-31, March 1967.

On the basis of results of the findings of this study, it was concluded that attitudes toward physical education felt that they were generally favorable. However, these subjects felt that education as the physiological-physical experience has contributed more to the well-being of the individual than the other values involved.

Bell (1967) designed a questionnaire technique and selected 35 freshmen males enrolled in The Foundation of Physical Education courses at Michigan State University. The majority indicated a positive attitude toward the Foundation course and the data also suggested that the attitude of most students were unchanged as a result of taking The Foundation of Physical Education course.⁶⁵

Campbell (1968)⁶⁶ attempted to analyze responses to specific statements and selected descriptive information to determine if students differ in their attitudes toward physical education as a result of the size of the high school they attended, the program of physical education experienced, and the nature of academic interests. In order to determine the structure of attitudes toward physical education, consideration was given to social, mental-emotional, physiological, and general categories of physical education attitude.

A group of 199 college males, who were enrolled in the required physical education program at the University of Texas

⁶⁵Edward Derrick Bell, "The Influence of the Foundations of Physical Education Course at Michigan State University Upon the Attitude of Freshmen Male Students," Master's Thesis, 1967.

⁶⁶Donald E. Campbell, "Student Attitude Toward Physical Education," Research Quarterly, 39:456-62, October 1968.

completed the WPEAI. Campbell concluded, contrary to what we found in previous studies, that no significant variation in attitudes concerning physical education can be predicted by the size of the high school attended, the area of academic interest, or performance of physical activities.

Petrie (1969)⁶⁷ designed an investigation to develop a system of classification of play, games, and sports and to evaluate the motivations for involvement in these activities. Using a questionnaire technique, he randomly selected 624 students from the undergraduate population of Michigan State University to complete the questionnaires. Based on the results of this study, he concluded that: subjects rated those activities concerned with fun and excitement, health and fitness, competitive skill and social interaction as essential sources of motivation for their participation in physical activity. Physical activities involving risk and danger were ranked higher by male subjects, whereas physical activities concerned with fun and excitement, and social interaction had more meaning for female subjects as the primary sources of motivation for their participation in physical activity. Furthermore, men supported participation in play, games, and sports for the extrinsic satisfaction. The women, however, gave their support to the intrinsic satisfaction of play, games, and sports.

⁶⁷Brian Malcolm Petrie, "Physical Activity, Game, and Sport: A System of Classification and an Investigation of Social Influences Among Students of Michigan State University," Ph.D. Thesis, 1970.

Brumbach (1968)⁶⁸ using the WPEAI, conducted a questionnaire study in an effort to determine the effect of a special conditioning class upon students' attitudes toward physical education. Based on the result of this study, it was found that a special conditioning course for male college students lacking in physical fitness not only improved their strengths but also their attitudes toward physical education. He also found that if special actions to improve the teacher-student support may bring about a significant improvement in students' attitudes toward physical education.

Webb (1969), assumed that attitudes toward games and play changes with age. Furthermore, he defined play and game as having three dimensions--fairness, skill and success. Early in life, only the fairness dimension of play is paramount. Thus, the child involved in simple games with a few rules needs no referees. As the child becomes mature, the fairness will be undermined by skill and finally the success dimension of play is dominated in adult life.

Helping to develop new physical education programs in the public school curriculum at Battle Creek, Michigan, gave Webb an opportunity to study his assumptions. Thus, he conducted a survey research to sample the attitudes of students of both public and private schools (grades 3, 6, 8, 10, and 12) toward the value of physical education activities. He administered the questionnaire, developed for this study, to every subject in the Fall of 1967.

⁶⁸Wayne B. Brumbach, "Effect of a Special Conditioning Class Upon Students' Attitudes Toward Physical Education," Research Quarterly, 39:211-13, March 1967.

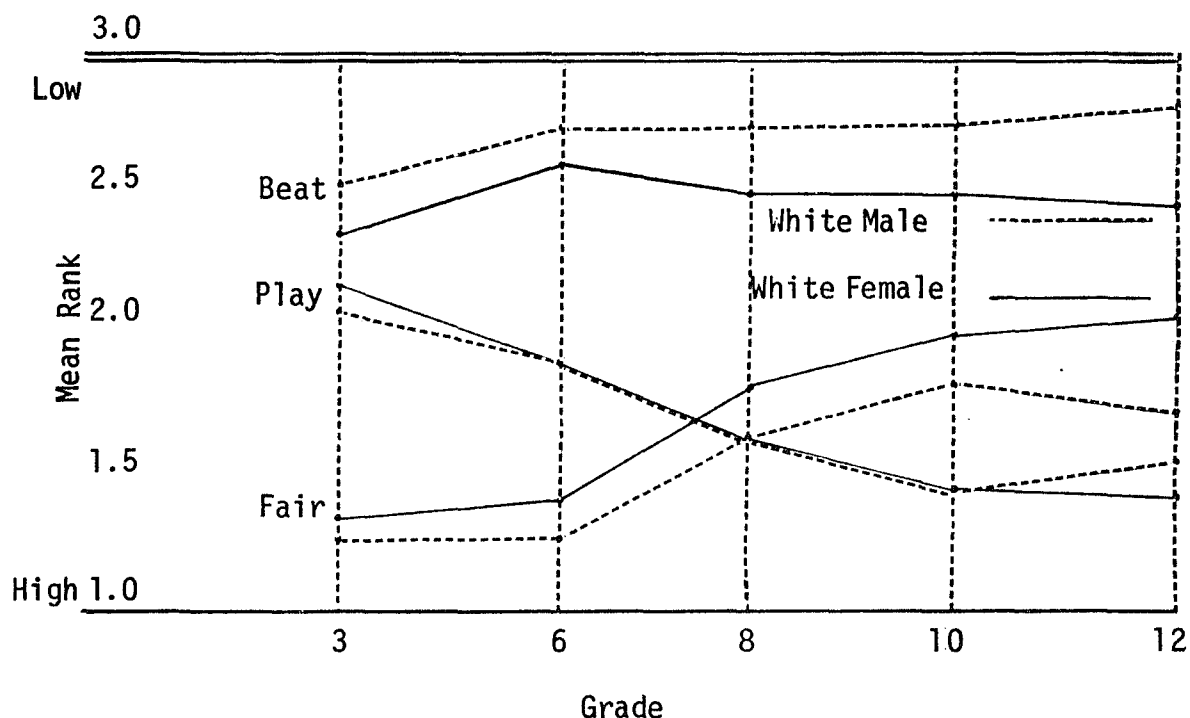


Figure 1.--Mean Rank of Scale Items by Grade and Sex.

As can be seen from Figure 1, the greatest degree of differences occur in the changing importance in accordance with both "play" or skill and "fair" factors from grade three to grade twelve. This finding supports Webb's assumption mentioned earlier. Females always scored "beat" or the success factor at lower levels than did males. Although males scored success higher than females, except for the grade six, a significant difference was found at the level of .01 between the sexes. Fair consistency was ranked higher by the females than males and this may be due to the fact that as both sexes grow older, the ranking becomes lower. It was also found that females consistently, except for the grade twelve, ranked "play" or skill higher than males. Webb concludes that . . . "in any case, both sexes tend, as they grow older, to give diminishing

importance to fairness and increasing stature to skill, the first basing its primary in the eighth grade to the second, the second attaining that eminence clearly at the expense of the component fairness."⁶⁹

Kidd (1971) conducted a study to determine the effectiveness of The Foundation of Physical Activity course at the University of Oregon in the area of: (1) attitude toward physical activity, and (2) knowledge of the principles and benefits of physical activity. He randomly selected 64 freshmen males as a control group. Pre- and post-questionnaires, using the Kenyon Inventory for Determining Attitude Toward Physical Activity Form DM, were administered.⁷⁰

The findings indicated that participants in The Foundation of Physical Activity course did not improve attitudes toward physical activity. This finding supported what Sloan and Bell found in their studies. On the other hand, participating in these activities was effective in improving the students' knowledge of the course content.

Datson and Stanley (1972), using the Kenyon's Attitude Toward Physical Activity Inventory, reported an investigation for the purpose of assessment of variations in attitudes of male university students (N = 699) for the purpose, among other things, of comparing records of achievements in athletic and non-athletic activities. They concluded that physical activity as pursuit of vertigo and

⁶⁹Harry Webb, "Professionalization of Attitudes Toward Play Among Adolescents," in *Sociology of Sport*, Gerald S. Kenyon, ed., Chicago: The Athletic Institute, 1969, Chapter 8.

⁷⁰Thomas R. Kidd, "An Evaluation of a Foundation of Physical Activity Course," *Research Quarterly*, 4:35-41, March 1971.

catharsis were expressed equally as its strongest positively perceived value, while negative responses were advanced for the lowest perceived value, defined as an aesthetic experience.⁷¹

Obtaining public opinion regarding the status of physical education programs in higher education has been the subject of several investigators in recent years. For example, Shaw and Cordts (1960)⁷² used a questionnaire technique to survey 300 physical educator's department chairmen. Their conclusion indicated that procedures related to philosophy and objectives, and evaluation were usually similar.

O'Bryan and O'Bryan (1969) investigated the attitude of 300 males representing six subgroups of a community in a university city toward the values of physical education and its practitioners. It was found that the physical education practitioners were regarded as competent, ambitious, useful and important.⁷³

Lockart (1970)⁷⁴ reported a study to objectively measure and analyze the personality factors of university women in relation to

⁷¹Charles O. Datson and W. J. Stanley, "Value of Physical Activity by Male University Students," Research Quarterly, 43:148-56, May 1972.

⁷²John H. Shaw and Harold H. Cordts, "Status of the Physical Education Required or Instructional Programs in Four-Year Colleges and Universities," Research Quarterly, 31:409, October 1960.

⁷³Maureen H. O'Bryan and K. G. O'Bryan, "Attitudes of Males Toward Selected Aspects of Physical Education," Research Quarterly, 40:357, March 1969.

⁷⁴Barbara D. Lockhart, "Personality Factors of University Women in Relation to Their Attitudes Toward Physical Education and Physical Activity," Ph.D. Dissertation, Brigham Young University, 1971.

their attitudes toward physical education and physical activity. Two hundred women, who enrolled in the summer semester of 1970 at Brigham Young University, acted as her subjects. The cluster sampling was used as for sampling technique in accordance to the on and off campus living units. A battery of three tests, the WPEAI, Short Form A, The Kenyon's ATPA Scale, Form DW, and Form A of Cattell Sixteens Personality Factor Questionnaire, were given to each of the 200 subjects.

Upon analyzing the data gathered, it concluded that:

1. There is a relationship of significance between positive attitudes toward physical activity and healthy personality factors.
2. Women possessing favorable personality traits have a desire to participate in wholesome physical activity of some form. Physical activity is sought by these women as an integral part of a balanced life.
3. The person who is not engaged in some form of physical activity exhibits personality traits which are less favorable than those who do desire and engage in physical activities.
4. Desire to participate in physical activity, and an ability to do so, allows a person to be better equipped emotionally, and as a result, this person functions more capably as a socially adjusted adult. This person will not only be more acceptable to others, but will have more self-respect as well.
5. Involvement in wholesome physical activities contributes to the mental and emotional well-being of an individual.

Summary

The work of many scholars has led to the conclusion that attitudes can no longer be considered to be unmeasurable. Thus, the major

attitude inventories constructed for the purpose of measuring college students' attitudes toward physical education, physical activity, health, and recreation were examined. Since the attitudes determine the individual's willingness to acquire knowledge as well as his desires in participating in physical activity, the studies attempting to obtain college students' attitudes toward physical education, physical activity, health, and recreation were reviewed. The results of these studies indicate a favorable attitude toward the value of physical education programs. Both male and female students conceived the value of physical activity similarly. Most of those studies reviewed used either Wear Physical Education Attitude Inventory (WPEAI) or Kenyon's Attitude Toward Physical Activity (ATPA) Inventory Form D as their instruments. The Foundation of Physical Education courses implemented by some institutions did not change the students' attitudes toward physical education courses. A favorable attitude, however, was reported by students. The social, physical, emotional values of physical activity were positively endorsed by the subjects.

CHAPTER III

METHOD OF PROCEDURES

In order to conduct this investigation, the survey research technique was applied and data was gathered from a sample of the undergraduate population of Michigan State University in the Fall of 1974.

Finding the Instrument

There have been a number of instruments used by investigators to measure the attitude of people, especially college students, toward the value of physical activity, among which two instruments have received special attention. First, the Wear Physical Education Attitude Inventory (WPEAI) was constructed in 1955 by Carlos L. Wear.⁷³ His intention was to develop an instrument which would enable one to make a valuable and valid assessment of the direction and intensity of individual and group attitude toward physical education as an activity course.

In 1955, Marion R. Broer and his co-workers, Jack Keogh (1962),⁷⁴ Wessel and Nelson (1964)⁷⁵ and Brumbach (1968)⁷⁶ were

⁷³Wear, op. cit., p. 117.

⁷⁴Keogh, op. cit., p. 239.

⁷⁵Wessel and Nelson, op. cit., p. 562.

⁷⁶Brumbach, op. cit., p. 211.

among those who used WPEAI as the instrument for their investigations.

Broer and his co-workers utilized it to determine the attitudes of University of Washington freshmen and sophomore women students toward physical education activity and Keogh used it for the purpose of deciding if students differ in their attitudes toward general benefits of physical education.

Since this attitude inventory was constructed in such a way that only information concerning the image of physical education held by students enrolled in programs designed for general college students, little information involving the value of physical activities, broader in scope than the local public image of physical educators was obtained. Thus, the second inventory, constructed by Gerald S. Kenyon⁷⁷ in 1968, was broader in sense and more meaningful as far as analyzation and psychological scaling techniques, and multidimensionality of the domains in question. Following its construction, the so-called Kenyon's Attitude Toward Physical Activity Inventory, ATPA, Form D, has been used by a number of researchers such as, in 1970, Barbara D. Lockhart⁷⁸ and Richard B. Alderman,⁷⁹ and in 1972, Charles O. Datson and W. O. Stanley,⁸⁰ to name a few.

⁷⁷Kenyon, op. cit., p. 566

⁷⁸Lockhart, op. cit., Chapter 3.

⁷⁹Alderman, op. cit., p. 1.

⁸⁰Datson and Stanley, op. cit., p. 148.

Therefore, because it is broader and more meaningful, ATPA Form D by Kenyon is more appropriate for the purpose of this study.

The Attitude Inventory

The attitude inventory constructed by Kenyon consists of six subdomains or scales which are used in assessing attitude toward physical activity. Test statistics, factors, and item analysis procedures were used to evaluate the inventory. Based on the results of the findings of this study, Hoyt reliability ranging from .72 to .89 for the six scales were obtained.⁸¹ "Comparative measures of the central tendency, variability and reliability between similar populations indicate instrument stability."⁸² Following is the description of six scales in detail by Kenyon:⁸³

(1) Physical activity as a social experience.
A characterization of those activities whose primary purpose is to provide a medium for social intercourse, i.e., to meet new people and to perpetuate existing relationships.

(2) Physical activity for health and fitness.
A characterization of those activities in which participation is designed to improve one's health and physical fitness.

(3) Physical activity as the pursuit of vertigo.
A characterization of those activities or experiences providing, at some risk to the participant, an element of thrill and excitement through the medium of speed, acceleration, sudden change of direction, or exposure to dangerous situations, with the participant remaining in control.

⁸¹C. Hoyt, Test Reliability Estimated by Analyses of Variance, *Psychometrika*, 6:153-6, 1941.

⁸²Alderman, *op. cit.*, p. 2.

⁸³Kenyon, *op. cit.*, p. 566.

(4) Physical activity as an aesthetic experience. A characterization of those activities which are thought of as possessing beauty or certain artistic qualities such as ballet, gymnastics, or figure skating.

(5) Physical activity as catharsis. A characterization of those activities which provide, through some vicarious means, a release of tension participated by frustration.

(6) Physical activity as ascetic experience. A characterization of those activities that are conceived of as requiring long strenuous, and after painful training and stiff competition, and which demands a deferment of many other gratifications.

Procedure for Obtaining the Scale

In order to obtain a copy of the inventory, a letter was sent to the following address:

ADI Auxiliary Publication Project
Photoduplication Service
Library of Congress, Washington, D.C.
20540 USA

Upon receiving the scale, this writer had some difficulty in determining how the various elements of the inventory were to be weighted. A letter was sent to Dr. Gerald S. Kenyon who is now professor of Kinesiology at the University of Waterloo, Ontario, Canada, for two purposes: first, to secure his permission to use the attitude scale and second, to let this writer know the scoring procedures for ATPA Form D. These letters are shown in Appendix A.

The Selection of the Sample

For the purpose of this study, 240 undergraduate students registered in Fall Term 1974, at Michigan State University were randomly selected. This was accomplished through the Research and

Evaluation and Data Processing Office in the Administration Building at Michigan State University. To make the data more specific, the following criteria for selection of the sample were established:

1. All those selected were to be American citizens (foreign students were to be by-passed).

2. All members of the sample were to be registered undergraduate students of Michigan State University.

3. All the students older than 23 years of age were to be eliminated from consideration as members of the sample.

The sampling procedures were to:

1. Selected every "Nth" record from each class level to obtain 30 random students.

2. Obtain records for each student randomly selected.

3. Punch local address cards.

The following table gives more information in terms of the selected samples. See Table 1.

Table 1.--Selection of Samples From the Overall Population

Sources	Sex	Overall Population	Nth Record
Freshmen	M	4618	154th
	F	4568	152th
Sophomore	M	3783	126th
	F	3785	126th
Junior	M	4801	160th
	F	4035	134th
Senior	M	4461	148th
	F	3577	119th

The formation of the sample was compared to that of the overall population on the basis of sex and class. Table 2 represents this concept.

Table 2.--Sample Comparison to That of the Overall Population on the Basis of Sex and Class

Source	Sex	Overall Population	Nth Record
Freshmen	M	4616	30
	F	4568	30
Sophomore	M	3783	30
	F	3785	30
Junior	M	4801	30
	F	4035	30
Senior	M	4461	30
	F	3577	30

The Distribution of Questionnaire

All the questionnaires were distributed to students through the East Lansing Post Office. Each questionnaire included brief instructions and students were asked to respond on the answer sheets attached. Each questionnaire included a stamped envelope with the return address. The respondents were requested to return the questionnaires through regular mail.

The information for each student, provided by the Data Processing Office, included the full name, local address, class level, student number, and local telephone number. Having the students' telephone numbers provided the means to contact students who had not returned their questionnaires. Their cooperation was requested and they were asked to return their responses.

Information Concerning Respondents to the Study

The questionnaires were completed by 233 Michigan State University undergraduate students in the Fall of 1974. The number of students responding to this study is represented in Table 3.

Table 3.--Questionnaires Returned by Undergraduate Students
(N = 233)

Source	Freshmen	Sophomore	Junior	Senior	Totals
Male	30	30	30	30	120
Female	30	27	30	26	113
Total	60	57	60	56	233

With unequal numbers of subjects per cell, the design is non-orthogonal and has several limitations. First, the assumptions of analysis of variance (ANOVA) are not robust i.e., equal variance and normality and second, the sums of the square associated with the factors in the design are not independent and restricting in hypotheses testing. To obtain an orthogonal design equal numbers of subjects per cell are needed. The following procedure was used in equalizing the number of subjects per cell. Since the minimum number of subjects responding to the attitude inventory was 26, all other groups were reduced to 26 subjects per cell. This was accomplished by randomly drawing three cards from male freshmen, three cards from female freshmen, three cards from male sophomores, one card from a female sophomore, three cards from male juniors, three cards from female juniors, and three cards from male seniors.

Table 4 shows the number of students responding to the inventory after the necessary modifications were made.

Table 4.--Questionnaires Returned by Undergraduate Class After the Modification (N = 208)

Source	Freshmen	Sophomore	Junior	Senior	Total
Male	26	26	26	26	104
Female	26	26	26	26	104
Total	52	52	52	52	208

The questionnaire contained 59 items for male and 54 items for female. Average responses per item making up each subdomain were used as the dependent measure for analysis of variance, and the analysis of variance (ANOVA) for each subdomain was computed from subjects' responses.

Table 5 represents the number of items in the attitude inventory for each subdomain for males and females.

Table 5.--Number of Items in Questionnaire for each Subdomain for Males and Females

Source	Male	Female
Social	10	8
Health	10	11
Vertigo	10	9
Aesthetic	10	9
Catharsis	9	9
Ascetic	10	8
Total	59	54

Responses to the questionnaires were analyzed and punched on cards, one card for each subject, at the Computer Center at Michigan State University.

In order to test the hypotheses and sub-hypotheses to determine whether they can be rejected or accepted, the following descriptive statistical procedures were conducted:

1. Analysis of variance for a two-factor factorial design to analyze the mean attitude responses among the subdomain.
2. The critical region of rejection was set up at the level of .05.
3. The average mean scores were computed between and within grades (freshmen, sophomores, juniors, and seniors) and sex--males and females.

Summary

In this chapter the method of procedure was thoroughly examined. The survey research technique was employed and 233 Michigan State University undergraduate students completed the Kenyon Attitude Toward Physical Activity Inventory, ATPA, Form D in the Fall of 1974.

All the questionnaires included a stamped envelope with the return address and were distributed to students through regular mail.

With unequal numbers of subjects per cell, the design had some limitations in testing the hypotheses. Since the minimum

number of subjects responding to the attitude inventory was 26, all other groups were randomly reduced to 26 subjects per cell.

The descriptive statistic procedures, analysis of variance (ANOVA), and used in order to test the hypotheses and sub-hypotheses. For the purpose of this study, the critical region of rejection was up at the level of .05.

In Chapter IV the results of the statistical analysis of the data will be presented.

CHAPTER IV

ANALYSIS OF DATA

In this chapter an attempt has been made to present the data collected from the questionnaires, and data analysis of the six subdomains. Tables are illustrated for analysis of variance for each subdomain in terms of grade, sex, and interactions between the two.

Hypothesis I

There will be no significant differences between the scores on a measure of attitude toward the value of physical activity of Michigan State University freshmen, sophomore, junior, and senior undergraduate students.

In order to test the hypothesis to determine whether there are any significant differences between the scores on a measure of attitude toward the six subdomains of four groups of male and female freshmen ($N = 52$), male and female sophomores ($N = 52$), male and female juniors ($N = 52$), and male and female seniors ($N = 52$), the analysis of variance was conducted and the F ratios were used to determine the differences between the group means.

Table 6 indicates the means of average responses per items making up each subdomain for each group.

Table 6.--Means of the Average Responses for Four Groups on Six Subdomains

Subdomains	Freshmen		Sophomore		Junior		Senior	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
1 (social)	4.111	5	4.135	2	3.936	5	4.062	2
2 (fitness)	4.209	3	3.843	5	3.964	4	3.961	3
3 (vertigo)	4.403	1	4.145	1	4.131	2	3.913	5
4 (aesthetic)	4.130	4	4.125	3	4.151	1	3.960	4
5 (catharsis)	4.280	2	3.936	4	3.972	3	4.098	1
6 (ascetic)	3.802	6	3.425	6	3.640	6	3.553	6

Table 7 presents the results of the analysis of variance (ANOVA) which indicates that the test statistic was not significant, at the level of .05. Consequently, the null hypothesis was not rejected and it was concluded that there was no significant difference in Freshmen, Sophomore, Junior and Senior students toward physical activity as measured by the six subdomains.

Table 7.--Grade Comparison

Subdomain	d.f	MS	F	P
1 (social)	3	.4065	.7011	.55
2 (fitness)	3	1.0024	1.9064	.12
3 (vertigo)	3	2.0863	2.1283	.09
4 (aesthetic)	3	.6138	.8457	.47
5 (catharsis)	3	1.2574	1.7224	.16
6 (ascetic)	3	1.3011	1.6625	.17

P significant at .05 level

Hypothesis II

There will be no significant differences between the scores on a measure of attitude toward the value of physical activity of Michigan State University undergraduate male and female students.

Table 8 shows the average mean scores of average responses per item making up each subdomain for each group of male and female students.

Table 8.--Mean and Rank Scores for Male and Female

Subdomains	Male (N = 104)		Female (N = 104)	
	Mean	Rank	Mean	Rank
Social	4.081	2	4.041	5
Health	3.856	5	4.157	2
Vertigo	4.215	1	4.080	4
Aesthetic	3.862	4	4.365	1
Catharsis	4.035	3	4.108	3
Ascetic	3.571	6	3.639	6

As can be seen from Table 8 the means of the average responses were higher for female students with the exception that male students scored higher than females in social and pursuit of vertigo experience.

Table 9 illustrates that the sex differences in attitudes toward the value of physical activity did not exist among a group of undergraduate males as compared with the undergraduate female students in scoring physical activity or social, pursuit of vertigo catharsis, and ascetic experience. More specifically, it was found that there was not a significant difference between male and female students in their rating of physical activity as social experience

($P < .70$), pursuit of vertigo ($P < .32$), catharsis ($P < .53$), and ascetic experience ($P < .57$). The probability level associated with each null hypothesis was greater than .05. However, significant differences were found between the male (mean = 3.856 and female (mean = 4.157) students in their rating of physical activity as fitness ($P < .003$), and aesthetic experiences ($P < .0001$). See Table 9.

Table 9.--Sex Differences

Subdomain	d.f	MS	F	P
1 (social)	1	.0820	.1414	.70
2 (fitness)	1	4.7191	8.9747	.0031
3 (vertigo)	1	.9504	.9695	.32
4 (aesthetic)	1	13.1454	18.1121	.0001
5 (catharsis)	1	.2843	.3894	.53
6 (ascetic)	1	.2430	.3105	.57

P significant at .05 level

Hypothesis III

There will be no significant interactions between grade level, i.e., freshmen, sophomores, juniors, and seniors and sex--males and females on attitudes toward physical activity as measured by six subdomains.

Tables 10 through 15 present the cell means of average responses in regard to the six subdomains for each sex by grade combination.

Table 10.--Subdomain I (Social)

Source	Freshmen	Sophomore	Junior	Senior
Male	3.95	4.12	3.98	4.28
Female	4.29	4.14	3.89	3.83

Table 11.--Subdomain II (Fitness)

Source	Freshmen	Sophomore	Junior	Senior
Male	4.03	3.69	3.88	3.80
Female	4.38	4.09	4.03	4.11

Table 12.--Subdomain III (Pursuit of Vertigo)

Source	Freshmen	Sophomore	Junior	Senior
Male	4.35	4.35	4.29	3.85
Female	4.44	3.93	3.96	3.96

Table 13.--Subdomain IV (Aesthetic)

Source	Freshmen	Sophomore	Junior	Senior
Male	3.65	3.86	4.05	3.88
Female	4.60	4.56	4.25	4.03

Table 14.--Subdomain V (Catharsis)

Source	Freshmen	Sophomore	Junior	Senior
Male	4.27	3.82	3.93	4.09
Female	4.28	4.04	4.00	4.09

Table 15.--Subdomain VI (Ascetic)

Source	Freshmen	Sophomore	Junior	Senior
Male	3.64	3.51	3.61	3.50
Female	3.95	3.33	3.66	3.59

Table 16 indicates that there were no significant interactions between sex and grade level in regard to physical activity as social, fitness and health, pursuit of vertigo, catharsis and ascetic experiences. However, there was an interaction obtained between the two factors on aesthetic experience (Subdomain IV).

Table 16.--Group Interactions

Subdomain	d.f	MS	F	P
1 (social)	3	1.4318	2.4693	.06
2 (fitness)	3	.1466	.2788	.84
3 (vertigo)	3	.9767	.9964	.39
4 (aesthetic)	3	1.9327	2.6629	.04
5 (catharsis)	3	.1411	.1933	.90
6 (ascetic)	3	.4973	.6354	.59

P significant at .05 level

Figure 2 indicates the relationship between grade level and sex.

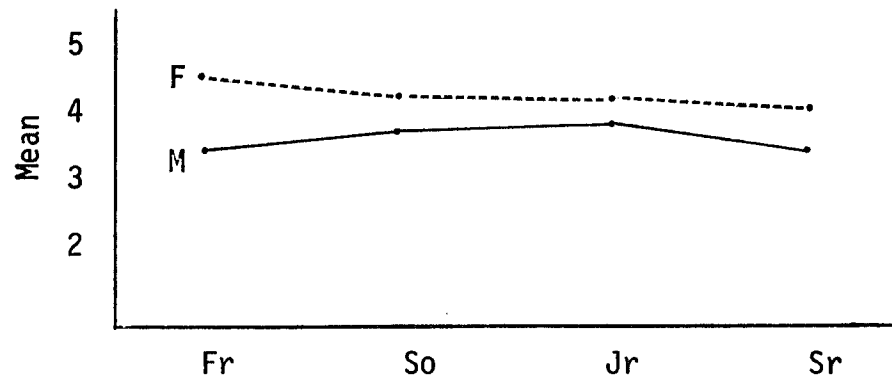


Figure 2.--The Relationship Between Grade Level and Sex.

As can be seen from the Graph, female freshmen and sophomore students scored higher on a measure of attitude toward the value of physical activity as an aesthetic experience than male students. However, with junior and senior level subjects the means of average responses interacted more, meaning that both male and female junior and senior subjects were slightly different in their attitudes toward the physical activity as an aesthetic experience.

Hypothesis IV

There will be no significant differences between the scores on a measure of attitude toward the value of physical activity of male and female undergraduate students within each grade level.

This null hypothesis can be broken down into several sub-hypothesis for each of the subdomains as follows:

1. Social experience: there are no significant differences between male and female undergraduate students in their rating of physical activity as a social experience.

Table 17 shows that there was no significant difference in attitude of male and female freshmen, sophomore, and junior students in their rating physical activity as social experience. However, a significant difference ($P < .03$) was found between male and female seniors in their scoring of physical activity as a social experience.

There was no significant difference in the average mean scores obtained ($P < .03$). The average mean score for each group is illustrated in Table 10. The female freshmen and sophomores scored higher than male freshmen and sophomores (Means = 4.29, 4.14). However, male juniors and seniors scored higher than females respectively (Means = 3.98, 4.28).

Table 17.--Subdomain I (Social)

Source	d.f	MS	F	P
Male vs Female Freshmen	1	1.6884	2.9119	.08
Male vs Female Sophomore	1	.0031	.0053	.94
Male vs Female Junior	1	.1026	.1770	.64
Male vs Female Senior	1	2.5832	4.4551	.03

P significant at .05 level

2. Health and fitness: there will be no significant differences between male and female students within the freshmen, sophomore, junior and senior classes in their rating of physical activity as a health and fitness experience.

Table 18 indicates that the test statistic for this sub-hypothesis was not significant, at the level of .05, and therefore the null hypothesis was not rejected. However, a significant difference was found within the males and females at the sophomore level ($P < .05$). Thus, the null hypothesis was rejected at the .05 level. The average mean scores for female students were higher than for male students in their rating of physical activity as a fitness experience. See Table 11.

Table 18.--Subdomain II (Health and Fitness)

Source	d.f	MS	F	P
Male vs Female Freshmen	1	1.5164	2.8839	.09
Male vs Female Sophomore	1	2.0680	3.9329	.04
Male vs Female Junior	1	.2970	.5649	.45
Male vs Female Senior	1	1.2774	2.4993	.12
P significant at .05 level				

3. Pursuit of Vertigo: there will be no significant differences between female and male students within the freshmen, sophomore, juniors, and seniors classes in

their rating of physical activity as a pursuit of vertigo experience.

The null hypothesis was not rejected for both males and females within freshmen, sophomores, juniors and senior classes. The critical region of rejection was not significant at the .05 level and therefore, it was concluded that there was no significant difference in their scoring of physical activity as a pursuit of vertigo experience. See Table 19. The average mean scores are illustrated in Table 12. The females scored higher at freshmen (Mean = 4.44) and senior levels (Mean = 3.96). However, the males scored higher at junior (Mean = 4.29) and sophomore levels (Mean = 4.35). The Scheffe Post Hoc⁸⁴ formula was used to examine these mean scores differences. It was found that these differences were not statistically significant at the level of .05.

Table 19.--Subdomain III (Pursuit of Vertigo)

Source	d.f	MS	F	P
Male vs Female Freshmen	1	.1053	.1074	.74
Male vs Female Sophomore	1	2.1935	2.2376	.13
Male vs Female Junior	1	1.4223	1.4509	.22
Male vs Female Senior	1	.1595	.1627	.68
P significant at .05 level				

⁸⁴Gene V. Glass and Julian C. Stanley, Statistical Methods in Education and Psychology, New Jersey: Prentice-Hall, Inc. 1970.

4. Aesthetic experience: there will be no significant differences between females and males within the freshmen, sophomore, junior, and senior classes in the rating of physical activity as an aesthetic experience.

Table 20 represents the results of analysis of variance which indicates that the test statistic was significant, at the level of .05, for male and female freshmen and sophomores. Therefore, the null hypothesis for these two groups was rejected, showing that there are differences within male and female freshmen and sophomores in scoring physical activity as an aesthetic experience. But, on the other hand, as can be seen from Table 20, the test statistic was not significant at the level of .05 for male and female juniors and seniors. Thus, the null hypothesis for these two groups was not rejected, concluding that there were no differences within male versus females at the junior level and within males versus females at the senior level in rating physical activity as an aesthetic experience.

Table 20.--Subdomain IV (Aesthetic)

Source	d.f	MS	F	P
Male vs Female Freshmen	1	11.5999	15.9826	.0001
Male vs Female Sophomore	1	6.4896	8.4415	.0032
Male vs Female Junior	1	.5260	.7248	.3457
Male vs Female Senior	1	.3280	.4520	.5022
P significant at .05 level				

Table 13 indicates the average mean scores between the different groups. Females always scored higher than males in this subdomain.

5. Catharsis experience: there will be no significant differences between male and female students within freshmen, sophomore, junior, and senior classes in rating physical activity as a catharsis experience.

Table 21 illustrates that the null hypothesis was not rejected for freshmen, sophomores, juniors and seniors classes. Hence, it can be concluded that no significant differences were found between males and females in their attitudes toward physical activity as a catharsis experience.

Table 21.--Subdomain V (Catharsis)

Source	d.f	MS	F	P
Male vs Female Freshmen	1	.0001	.0002	.98
Male vs Female Sophomore	1	.6402	.8770	.35
Male vs Female Junior	1	.0672	.0921	.76
Male vs Female Senior	1	.0000	.0000	.44

P significant at .05 level

Table 14 shows the average mean scores for each group. Female freshmen, sophomores, juniors students scored higher than male freshmen, sophomores, and juniors, but not statistically significant for female and male seniors.

6. Ascetic experience: there will be no significant differences between male and female students within the freshmen, sophomore, junior, and senior classes in rating physical activity as an ascetic experience.

On the basis of the results of analysis of variance and computing test statistics, Table 22, no significant difference was found in attitudes of male and female students within the freshmen, sophomores, juniors, and seniors classes in rating physical activity as an ascetic experience. Thus, the null hypothesis was not rejected, at the .05 level. Table 22 is the illustration for this concept.

Table 22.--Subdomain VI (Ascetic)

Source	d.f	MS	F	P
Male vs Female Freshmen	1	1.2043	1.5452	.21
Male vs Female Sophomore	1	.3860	.4832	.48
Male vs Female Junior	1	.0325	.0415	.83
Male vs Female Senior	1	.1071	.1364	.71
P significant at .05 level				

Table 15 refers to the average mean scores for each group. Female freshmen, juniors, and seniors scored higher than male freshmen, juniors and seniors with the exception that scores were higher for male sophomores as compared with female sophomores for this subdomain but these differences were not statistically significant.

Hypothesis V

There will be no significant differences in the scores on a measure of attitude of male freshmen, sophomore, junior and senior students toward the value of physical activity and the six subdomains.

Table 23 illustrates this relationship. Analysis of variance was carried out between the freshmen, sophomore, junior and senior students within the male group in order to determine if significant differences accrued in their rating of physical activity as the six subdomains. The critical region of rejection was not significant, at the .05 level. Therefore, the null hypothesis was not rejected, leading to the conclusion that there was no significant difference within male freshmen, sophomore, junior and senior students in scoring physical activity as the six subdomains.

Table 23.--Scores of Male Students Within the Subgroups

Subdomain	d.f	MS	F	P
1 (social)	3	.6603	1.1387	.33
2 (fitness)	3	.5491	1.0443	.37
3 (vertigo)	3	1.4979	1.5281	.20
4 (aesthetic)	3	.6711	.9247	.42
5 (catharsis)	3	1.0173	1.3435	.24
6 (ascetic)	3	.1360	.1738	.91
P significant at .05 level				

Hypothesis VI

There will be no significant differences in scores on a measure of attitudes of female freshmen, sophomores, juniors, and seniors toward physical activity as six subdomains.

Table 24 is the reflection of this concept. Based on the analysis of variance and test statistic, it was found that there were no significant differences within female undergraduate students with the exception at senior level. Therefore, the null hypothesis was not rejected and it was concluded that no significant difference was obtained within female freshmen, sophomore and junior students in scoring physical activity as measured by the first five subdomains. However, the null hypothesis was rejected for senior students, ($P < .04$) meaning that there was significant difference within these students at the level of .05 in rating physical activity as ascetic experience.

Table 24.--Scores of Female Students Within the Subgroups

Subdomain	d.f	MS	F	P
1 (social)	3	1.1781	2.0317	.1107
2 (fitness)	3	.5999	1.1409	.3337
3 (vertigo)	3	1.5651	1.5966	.1915
4 (aesthetic)	3	1.8754	2.5840	.0545
5 (catharsis)	3	.3812	.5222	.6676
6 (ascetic)	3	1.6624	2.1241	.0484
P significant at .05 level				

Summary

In this chapter six major hypotheses as well as six sub-hypotheses were statistically tested.

The subjects' attitudes responses, measured by six subdomains, were statistically tested in terms of grade effects, sex effects and the interactions between the sex and grade level. No significant difference was found in attitudes of undergraduate students toward the physical activity. In terms of sex effects, no significant difference was found between male and female students in their rating of physical activity as social, pursuit of vertigo, and ascetic experience. However, significant difference was found between males and females in their rating of physical activity as fitness and aesthetic experience.

Tables of means of the average responses in terms of grade and sex on six subdomains were presented. The subjects' expressed responses were ranked.

Furthermore, attitudes responses of male and female subjects were separately statistically tested toward each subdomain.

Finally, the hypotheses seeking to test if there were significant differences in stated responses within the freshmen, sophomores, juniors and seniors for male and female were tested. Tables were provided for the illustration of the above concepts.

Chapter V will present the summary, discussion and conclusion of this study.

CHAPTER V

SUMMARY, DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

In the first four chapters of this study the introduction, review of literature, methods and procedures, and the analysis of data were presented. This chapter will present a summary, findings, conclusion and recommendation.

Summary

The major objective of this study was to assess attitudes toward the value of physical activity of Michigan State University undergraduate students.

To accomplish this objective, a questionnaire technique was applied. One hundred and four male and one hundred and four female, a total of 208, undergraduate students registered in the Fall of 1974, completed the questionnaires. Kenyon's Attitude Toward Physical Activity Inventory, ATPA, Form D, which isolates six perceived values held toward physical activity was used as the instrument to assess the subject's attitude toward the six subdomains.

Each subject was asked to express his or her attitude concerning each subdomain. The six subdomains contained in the inventory were physical activity as a social experience, as health and

fitness, as the pursuit of vertigo, as an aesthetic experience, as catharsis, and as an ascetic experience.

More specifically, the objectives of the present study were the following:

1. To measure attitudes toward the value of physical activity among a group of male and female undergraduate students at Michigan State University.
2. To assess attitudes of undergraduate male and female students toward the values of physical activity as measured by six subdomains.
3. To find if there were any significant interactions between grade level, i.e., freshmen, sophomore, junior and senior and sex--males and females.
4. To compare mean scores obtained from six subdomains within males and females.
5. To obtain the average mean scores on a measure of attitude of male freshmen, sophomores, juniors, and seniors toward the values of physical activity.
6. To evaluate the average mean scores on a measure of attitude of female freshmen, sophomores, juniors, and seniors toward the values of physical activity.

Discussion

The results of this study indicated that no significant difference was found in the attitudes of freshmen, sophomore, junior and senior students toward physical activity as measured by the six subdomains.

The means of average responses were ranked in accordance to their weights for four groups on the six subdomains. All the freshmen students rated physical activity as pursuit of vertigo as their top choice. This was followed by scoring physical activity as catharsis, and health and fitness experience as their second and third choices.

All the sophomore students rated physical activity as pursuit of vertigo first, while social and aesthetic experiences were placed second and third. Physical activity as an aesthetic experience was ranked first by all junior students. Their second and third choices were pursuit of vertigo and catharsis experiences. At the senior level, students felt that physical activity as a catharsis experience is most important for them, while social experience and health and fitness were ranked in the second and third position.

Sex Effect: the comparison of the means of average responses for males and females indicates that all the male subjects ranked physical activity as pursuit of vertigo as having the most meaning for them, with physical activity as social experiences second and as catharsis experiences as third. However, all the female subjects rated physical activity as an aesthetic experience as having the

most meaning for them, while health ranked second and pursuit of vertigo ranked third.

Several other studies reported similar results. In his study, Keogh (1962)⁸⁵ found that both men and women undergraduate students at the University of California at Los Angeles did not differ in their stated attitude toward physical education. His subjects, however, supported the social, health, physical, and emotional values of physical education. Kenyon (1968)⁸⁶ reported similarities and differences in the attitudes of secondary school student athletes and non-athletes in Canada, Australis, England and the United States. As far as similarity was concerned, all the females in both groups rated physical activities as an aesthetic experience first, and pursuit of vertigo and ascetic were ranked similarly fifth and sixth by both male and female students. In the work of Petrie (1970)⁸⁷ male students at Michigan State University ranked physical activity as pursuit of vertigo experience highly as a motivator of their participation in physical activity.

Alderman (1970)⁸⁸ reported that although males and female athletes were similar in their attitudes toward physical activity,

⁸⁵Keogh, op. cit., p. 239.

⁸⁶Gerald S. Kenyon, "Values Held for Physical Activity by Selected Secondary School Students in Canada, Australia, England and the United States. U.S. Office of Education, Contract S-376, University of Wisconsin, February 1968.

⁸⁷Petrie, op. cit., p. 231.

⁸⁸Alderman, op. cit., p. 8.

both groups identically ranked physical activity as an aesthetic experience as their first choice. Datson and Stanley (1972)⁸⁹ reported in their study that physical activity as pursuit of vertigo and catharsis were ranked equally by university male students as having the most meaning for them, while these subjects ranked physical activity as aesthetic experience as having the lowest perceived value.

The results of these studies seem to indicate that there are similarities in ranking physical activity by university students as well as athletes. For example, all the male subjects in the work of Petrie (1970), and Datson and Stanley (1972) showed that males ranked physical activity as pursuit of vertigo first which in fact supports the finding of the present study. Furthermore, there was found a similarity between the study reported by Kenyon (1968) and the present study also. Both male subjects in two studies rated physical activity as an aesthetic experience fourth. Alderman, however, indicates that his subjects scored physical activity as an aesthetic experience as having the lowest value for them, while Datson and Stanley, find that their male subjects ranked the domain (aesthetic) sixth.

As in the case of university female students and women athletes, physical activity as aesthetic experience did receive special attention and was ranked number one in studies reported by Alderman,

⁸⁹Datson and Stanley, op. cit., p. 148.

Petrie, and Kenyon. It is of initial interest thus to indicate that the Michigan State University female subjects in this present study also ranked physical activity as an aesthetic experience as their best choice.

Consequently, as most of the results of these studies, including this one, indicate that physical activity as pursuit of vertigo is ranked first by the male subjects surveyed. This would seem to indicate that those activities involving risk, thrill, excitement or exposure to dangerous situations should be taken to be part of the male physical education programs. By the same token, activities which are thought of as possessing beauty or certain artistic qualities, such as ballet, gymnastics or figure skating should receive special attention in college female physical education programs.

It was interesting to find that physical activity as an ascetic experience was ranked the lowest possible by both male and female subjects as was also confirmed by other investigators. Once again, the finding of the present study, supported by the conclusion of other studies, may lead to the conclusion that although strenuous physical exercise and heavy physical activity are necessary in conditioning athletes in most sports, they were not supported by the college students to be an integral part of the physical education.

Interaction Effect: no significant interaction was found between male and female subjects in attitudes and social, health, pursuit of vertigo, catharsis and ascetic experiences. However,

female freshmen and sophomores scored higher on physical activity as an aesthetic experience.

Recommendations

The present study led this writer to the following recommendations:

1. Since the ultimate goal of education is to search for the truth, physical education, as part of the whole educational process, should fully develop young men's and women's intellectual, physical, psychological, and social potentialities.

2. To meet these aims, educational institutions, especially higher learning institutions, should provide an equal educational opportunity for all individuals to participate in a sound physical education program.

3. When providing and extending the opportunity to participate in these programs, individual differences should be recognized, discovered and properly guided. Where students are uncertain of which programs they want to follow, they should be given adequate information to permit them to make wise decisions.

4. Since the educational process starts early in life and continues throughout life, there should be a close articulation between primary, secondary and higher learning schools and in later life by implementing a sound physical education program.

5. Attention should not only be given to the students but to the teachers and instructors as well. Providing in-service training programs is essential for those whose knowledge and understanding

is obsolete and below the standards required for jobs which they have been selected for.

6. Modern physical education concepts are new in Iran. Therefore, it is the colleges' and universities' responsibilities to strive for the recognition and acceptance of the new concepts by sharing their physical education programs with their communities and the whole nation.

The public should be educated in order to evaluate the values of physical activity because recreational programs may make their lives happier.

7. Physical educators and physical education students should be given special opportunities for fruitful communications and exchanges of international ideas. Physical education departments at higher institutions ought to provide a dialogue to reeducate all their participants. In fact, if this is done properly, a changing society and its attitudes toward the value of physical education and physical activity will rapidly change.

8. Replication of this study will be the basis of a cross-cultural study in Iran. The present study lays the foundation for future comparative studies.

Conclusion

1. All undergraduate students who participated in this study perceived the value of physical activity similarly as measured by six subdomains.

2. Female students strongly endorsed the value of physical activity as an aesthetic experience.

3. Male subjects ranked the pursuit of vertigo as having the most meaning for them.

4. Both males and females did not show very strong opinions toward physical activity or an ascetic experience.

5. No significant interaction was found between the grade level and sex of the student respondents.

BIBLIOGRAPHY

BIBLIOGRAPHY

- Adam, R. S. "Two Scales of Measuring Attitude Toward Physical Education." Research Quarterly, 34:91-94, March, 1963.
- Alderman, Richard B. "A Sociopsychological Assessment of Attitude Toward Physical Activity in Champion Athletes." Research Quarterly, 4:1-9 March, 1970.
- Allport, G. W. "Attitude." In A Handbook of Social Psychology, p. 80. Edited by C. Murchison. Worcester, Mass.: Clark University Press, 1975.
- _____. "The Study of the Undecided Personality." Journal of Abnormal and Social Psychology, 19:132-141, 1924.
- Bain, Read. "An Attitude on Attitude Research." American Journal of Sociology, 33:440-957, 1928.
- Baley, James A., and Field, David A. Physical Education and the Physical Educator. Boston: Allyn and Bacon, Inc., 1970.
- Banks, Olive. The Sociology of Education. New York: Schochen Books, 1969.
- Bell, Edward D. "The Influence of the Foundations of Physical Education Course at Michigan State University Upon the Attitude of Freshmen Male Students." Master's thesis, 1967.
- Bell, Margaret, and Walter, Ettae. "Attitudes of Women at the University of Michigan Toward Physical Education." Research Quarterly, 24:379-391, 1953.
- Beles, Fay. "Let's Play: Carry-over Activities." In College Physical Education, p. 43. Edited by Helen M. Heitman. Washington, D.C.: American Association for Health, Physical Education and Recreation, 1972.
- Broer, Marion R.; Fox, K. S.; and Way, Eunice. "Attitude of University of Washington Students Toward Physical Education Activity." Research Quarterly, 26:374-384, December, 1955.
- Broer, Marion R. "An Evaluation of Basic Skill Curriculum for Women Students of Low Motor Ability at the University of Washington." Research Quarterly, 26:15-26, March, 1955.

- Brumbach, Wayne B., and Cross, John A. "Attitude Toward Physical Education of Male Students Entering the University of Oregon." Research Quarterly, 36:10-16, March, 1965.
- Brumbach, Wayne B. "Effect of a Special Conditioning Class Upon Students' Attitudes Toward Physical Education." Research Quarterly, 39:211-213, March, 1967.
- Bucher, Charles A. Foundations of Physical Education. St. Louis: The C. V. Mosby Company, 1960.
- _____. "Health, Physical Education and Academic Achievement." NEA Journal, 54:38-40, May, 1965.
- Campbell, Donald E. "Student Attitudes Toward Physical Education." Research Quarterly, 39:456-462, October, 1968.
- Clarke, David H., and Clarke, Harrison H. Research Processes in Physical Education, Recreation, and Health. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970.
- Clarke, Harrison H., and Clarke, David H. Development and Adapted Physical Education. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1963.
- Combs, Arthur W., and Snygy, Donald. Individual Behavior. New York: Harper and Row, Publishing, 1959.
- Cordts, John F., and Shaw, John H. "Status of the Physical Education Required in Four-year Colleges and Universities." Research Quarterly, 31:409, October, 1960.
- Cratty, Bryant J. Movement Behavior and Motor Learning. Philadelphia: Lea and Febrager, 1973.
- _____. Psychology and Physical Activity. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968.
- _____. Social Dimensions of Physical Activity. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1967.
- Datson, Charles O., and Stanley, W. O. "Value of Physical Activity by Male University Students." Research Quarterly, 43:148-156, May, 1972.
- Davis, Gary A., and Warren, Thomas F., eds. Psychology of Education. Lexington, Mass.: D. C. Heath and Company, 1974.
- Dressel, Paul L. Evaluation in Higher Education. Boston: Houghton Mifflin Company, 1961.
- _____. College and University Curriculum. Berkeley, Calif.: McCutchan Publishing Corporation, 1971.

- _____. "Impact of Higher Education on Students Values and Critical Thinking Objectives." Educational Research, 46: 248-258, Summer, 1965.
- Drinkwater, Barbara C. "Development of an Attitude Inventory to Measure the Attitudes of High School Students Toward Physical Education as a Career for Women." Research Quarterly, 31:575, December, 1960.
- Edwards, Harry. Sociology of Sport. Homewood, Ill.: The Dorsey Press, 1973.
- Elkind, David. A Sympathetic Understanding of the Child Between Birth and Sixteen. Boston: Allyn and Bacon, Inc., 1974.
- Evans, L. H. "Demand for Higher Education in the World Today." Institute of International Education, 32:3-6, December, 1966.
- Field, David A. "A Comparison of Attitudes Toward Physical Education at the University of Bridgeport Between 1958 and 1969." Physical Educator, 27:126-127, October, 1970.
- Fishbein, Martin, ed. Readings in Attitude Theory and Measurement. New York: John Wiley and Sons, Inc., 1967.
- Fitts, Paul M., and Posner, Michael I. Human Performance. Belmont, Calif.: A Division of Wadsworth Publishing Company, Inc., 1969.
- Friderichson, Florence S. "Sports and the Cultures of Man." In Science and Medicine of Exercise and Sports, p. 430. Edited by Warren R. Johnson. New York: Harper and Row, Publishers, 1974.
- Frost, Reuben B. Psychological Concepts Applied to Physical Education and Coaching. Reading, Mass.: Addison-Wesley Publishing Company, 1971.
- Frondizi, Risieri. What is Value? La Salle, Ill.: Open Court Publishing Company, 1971.
- Gisolfi, Carl V. "Foundation Approach Toward Meeting Students' Needs." In College Physical Education, p. 26. Edited by Helen M. Heitmann. Chicago: Publication of American Association for Health, Physical Education and Recreation, 1972.
- Glass, Gene V., and Stanley, Julian C. Statistical Methods in Education and Psychology. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970.

- Harold, John, and Shaw, John H. "Required of Instructional Program in Four-year Colleges and Universities." Research Quarterly, 31:409, October, 1960.
- Hart, Marle M., ed. Sports in the Socio-Cultural Process. Dubuque, Iowa: W. M. C. Brown Company, Publishers, 1972.
- Heitmann, Helen M., ed. College Physical Education. Washington, D.C.: The American Association for Health, Physical Education and Recreation.
- Hellison, Donald R. "Physical Education of Self-Attitude." Quest. Monograph 13:41-45, January, 1970.
- Henry, Franklin M. "Physical Education--An Academic Discipline." Journal of Health, Physical Education and Recreation, 35:32, September, 1964.
- Isaac, Stephen. Handbook in Research and Evaluation. San Diego: Robert R. Knapp, Publisher, 1974.
- Jaeger, Eloise, et al. "Guide to Excellence for Physical Educators in Colleges and Universities." Journal of Health, Physical Education and Recreation, 12:51-54, April, 1971.
- Johnson, Warren R., and Buskirk, E. R., eds. Science and Medicine of Exercise and Sport. New York: Harper and Row, Publishers, 1974.
- Johnson, Warren R., and Cofer, Charles N. "Personality Dynamics: Psychological Implications." In Science and Medicine of Exercise and Sport. Edited by Warren R. Johnson and E. R. Buskirk. New York: Harper and Row, Publishers, 1974.
- Johnson, Perry B. "Academic Approach to College, and Physical Education." Journal of Health, Physical Education and Recreation, 37:23, March, 1966.
- Katz, David H. "The Functional Approach to the Study of Attitude." Public Opinion Quarterly, 24:163-204, 1960.
- Kenyon, Gerald S., ed. Sociology of Sport. Chicago: The Athletic Institute, 1969.
- _____, ed. Contemporary Psychology of Sport. Chicago: The Athletic Institute, 1970.
- _____. "Sociological Contribution." In Fact or Fancy. Edited by Perry B. Johnson. Journal of Health, Physical Education and Recreation, 39:31-33, November, 1968.

- _____. "A Conceptual Model for Characterizing Physical Activity." Research Quarterly, 39:96-105, 1968.
- _____. Sport, Culture, and Society. New York: Macmillan Publishing Co., 1969, p. 71.
- _____. "Six Scales for Assessing Attitude Toward Physical Activity." Research Quarterly, 39:566-575, 1968.
- _____. "Values Held for Physical Activity by Selected Secondary School Students in Canada, Australia, England, and the United States. U.S. Office of Education, Contract S-376. University of Wisconsin, February, 1968.
- Kenyon, Gerald S., and McPherson, Barry D. "Becoming Involved in Physical Activity and Sport: A Process of Socialization." In Physical Activity, Human Growth and Development. Edited by G. Lawrence Rarick. New York: Academic Press, 1973.
- Keogh, Jack. "Analysis of General Attitude Toward Physical Education." Research Quarterly, 33:239-244, May, 1962.
- _____. "Extreme Attitudes Toward Physical Education." Research Quarterly, 37:27-33, March, 1963.
- Kephart, Newell C. The Slow Learner in the Classroom. Columbus, Ohio: Charles E. Merrill Publishing Company, 1971.
- Kidd, Thomas R. "An Evaluation of a Foundations of Physical Activity." Research Quarterly, 4:35-71, March, 1971.
- Laplace, John. Health. New York: Appleton-Century-Crofts, 1972.
- Larson, Leonard A., ed. Fitness, Health, and Work Capacity: International Standards for Assessment. New York: Macmillan Publishing Co., Inc., 1974.
- Layman, Emma McCloy. "Contributions of Exercise and Sports to Mental and Social Adjustment." In Science and Medicine of Exercise and Sport. Edited by Warren R. Johnson and E. R. Buskirk. New York: Harper and Row, Publishers, 1974.
- Likert, Rensis A. The Method of Constructing an Attitude Scale. Edited by Martin Fishbein. New York: John Wiley and Sons, Inc., 1967.
- _____. "A Technique for the Measurement of Attitude." Archive of Psychology, 22:5-43, 1932.
- Lockart, Barbara D. "Personality Factors of University Women in Relation to Their Attitudes Toward Physical Education and Physical Activity." Ph.D. dissertation, Brigham Young University, 1971.

- Locke, Lawrence F. Research in Physical Education. New York: Teacher's College Press.
- Loy, John W., and Ingham, Alan G. "Play, Games and Sports in Psychological Development of Children and Youths." In Physical Activity: Human Growth and Development. Edited by G. Lawrence Rarick. New York: Academic Press, 1973.
- Loy, John W., and Kenyon, Gerald S., eds. Sport, Culture, and Society. New York: Macmillan Publishing Co., Inc., 1969.
- Maheu, Rent. "Sport and Culture." Journal of Health, Physical Education and Recreation, 34:30, October, 1963.
- Mayer, Lou O., and Bell, Mary M. "Women's Attitudes Towards Physical Education in the General Education Program at Northern Illinois University." Research Quarterly, 37: 515-519, October, 1966.
- McCue, Betty F. "Constructing an Instrument for Voluntary Attitude Toward Intensive Competition in Team Games." Research Quarterly, 24:205, May, 1953.
- McPherson, P. B. "An Inventory of Assessing Men's Attitudes Toward Exercise and Physical Activity." Research Quarterly, 39: 218, March, 1968.
- Meyers, Carlton R. "Physical Education in Iran." Journal of Health, Physical Education and Recreation, 36:63-64, October, 1965.
- Mista, Nancy D. "Attitude of College Women Toward Their High School Physical Education Program." Research Quarterly, 39: 166-174, March, 1968.
- Monebello, Robert A. "Should Physical Education be Required During the Undergraduate Program?" Journal of Health, Physical Education and Recreation, 30:35, December, 1954.
- Montoye, Henry O., ed. An Introduction to Measurement in Physical Education. Indianapolis: Phi Epsilon Kappa Fraternity, 1970, Vol. 2.
- Moore, Beverly Y. "The Attitude of College Women Toward Physical Activity as a Measure of Recreation." Research Quarterly, 12:320-325, December, 1940.
- Morgan, William P. "Sport Psychology." In The Psychomotor Domain: Movement Behavior. Edited by Robert N. Singer. Philadelphia: Lea and Febiger, 1972.

- Myers, Frank H. "A Safety Attitude Scale for the Seventh Graders." Research Quarterly, 29:320, October, 1958.
- O'Bryan, Maureen H., and O'Bryan, K. G. "Attitudes of Males Toward Selected Aspects of Physical Education." Research Quarterly, 40:357, March, 1960.
- Oxendine, Joseph B. Psychology of Motor Learning. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968.
- _____. "The Status of General Instructional Programs of Physical Education in Four-year Colleges and Universities." In College Physical Education: General Program. Edited by Helen M. Heitmann. Washington, D.C.: American Association of Health, Physical Education and Recreation, 1972.
- _____. The 1968 Status of Required Physical Education Programs in Four-year Colleges and Universities in the U.S.A. Washington, D.C.: American Association of Health, Physical Education and Recreation, 1968.
- Petrie, Brian M. "Physical Activity, Games, and Sport: A System of Classification and an Investigation of Social Influences Among Students of Michigan State University." Ph.D. thesis, Michigan State University, 1970.
- Pelton, Barry Cifton. "A Critical Analysis of Current Practices and Belief Underlying General Physical Education Programs in Higher Education." Research Quarterly, 38:678-685, December, 1967.
- "Psychology of Sport." Quest, Monograph Series No. 13. Published by The National College Physical Education Association for Men and The National Association for Physical Education of College Women, January, 1970.
- Rarick, Lawrence G., ed. Physical Activity: Human Growth and Development. New York: Academic Press, 1973.
- _____. "Research on the Value of Physical Education." Theory into Practice, 3:108-111, 1964.
- Richardson, Charles E. "Thurstone Scale for Measuring Attitude of College Students Toward Physical Fitness and Exercise." Research Quarterly, 3:636, December, 1960.
- Rohwer, William D., et al. Understanding Intellectual Development. Hensdale, Ill.: The Dryden Press, 1974.
- Roswell, Gallagher O., et al. "Need for Varied Activities in Physical Education Programs." Journal of Health, Physical Education and Recreation 36:6, January, 1965.

- Rudolph, Frederick. The American College and University. New York: Vintage Books, 1962.
- Ruffer, William A. "A Study of Required Physical Education for Men in the U.S. Colleges and Universities." Physical Educator, 27:79-81, May, 1970.
- Sage, George H. Introduction to Motor Behavior. Reading, Mass.: Addison-Wesley Publishing Company, 1971.
- Sapora, Allen V., and Mitchell, D. The Theory of Play and Recreation, 3rd ed. New York: The Ronald Press Company, 1961.
- Scott, Gladys M. "The Contribution of Physical Activity to Psychological Development." Research Quarterly, 31:307-317, May, 1960.
- Scott, Phebe M. "Attitude Toward Athletic Competition in Elementary Schools." Research Quarterly, 24:352-361, October, 1953.
- Schurr, Evelyn L., ed. Movement Experience for Children. New York: Appleton-Century-Crofts, 1967.
- Schwartz, James F. "The Attitude of Male Students Toward the Required Physical Education Program at Chardon State College." Master's thesis, 1966.
- Seefeldt, Vern. "Perceptual-Motor Skill." In An Introduction to Measurement in Physical Education, Chapter 3. Edited by Henry O. Montoye. Indianapolis: Phi Epsilon Kappa Fraternity, 1970, Vol. 2.
- Siedentop, Daryl. "The College Physical Education Program and the Concept of Play." In College Physical Education, p. 19. Edited by Helen M. Heitmann. Chicago: Publication of American Association for Health, Physical Education and Recreation, 1972.
- Singer, Robert N. ed. The Psychomotor Domain. Philadelphia: Lea and Fabiger, 1972.
- _____, ed. Readings in Motor Learning. Philadelphia: Lea and Fabiger, 1972.
- _____. Motor Learning and Human Performance. London: The Macmillan Company, 1968.
- Sloan, Muriel R. "Effect of Participation in Physical Education and Achievement in Selected Characteristics." Research Quarterly, 37:411, October, 1966.

- Smith, Henry C. Personality Development. New York: McGraw-Hill Book Company, 1961.
- Smith, W. R. "A Questionnaire Study in Regard to the Attitude of Men Students Toward Required Physical Education Programs." Research Quarterly, 4:249-258, March, 1933.
- Shaw, John H., and Cordts, Harold H. "Status of the Physical Education Required in Four-year Colleges and Universities." Research Quarterly, 31:409, October, 1960.
- Steinbergo, Sheldo S. "Physical Education as a Phase of the College Program of General Education." Research Quarterly, 27:366-367, October, 1956.
- "The College Physical Education Packet." Prepared by the College and University Physical Education Council of the National Association for Sport and Physical Education, an association of The American Alliance for Health, Physical Education and Recreation, 1974.
- Thurstone, L. L. "Attitude Can be Measured." American Journal of Sociology, 33:529-554.
- Van Dalen, Deobold B., and Bennett, Bruce L. A World History of Physical Education. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1971.
- Van Huss, Wayne D., et al. Physical Activity in Modern Living. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1968.
- Vincent, Marilyn F. "Attitude of College Women Toward Physical Education and Their Relationship to Success in Physical Education." Research Quarterly, 38:126-131, March, 1967.
- Wear, Carlos L. "Evaluation of Attitude Toward Physical Education as an Activity Course." Research Quarterly, 22:114-126, 1951.
- _____. "Construction of Equivalent Forms of an Attitude Scale." Research Quarterly, 26:113-119, March, 1955.
- Webb, Harry. "Professionalization of Attitude Toward Physical Education Among Adolescents." In Sociology of Sport, Chapter 8. Edited by Gerald S. Kenyon. Chicago: The Athletic Institute, 1969.
- Wessel, Janet A. Movement Fundamentals. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1961.

Wessel, Janet A., and Nelson, Richard. "Relationship Between Strengths and Attitudes Toward Physical Education Activity Among College Women." Research Quarterly, 35:562-564, December, 1964.

Wessel, Janet A.; Friedrich, John A.; and Kerth, Dorothy A. "A New Approach in the College Required Physical Education Program." Journal of Health, Physical Education and Recreation, 3:17, November, 1960.

APPENDICES

APPENDIX A

THE LETTERS

February 8, 1975

Dr. Gerald S. Kenyon
Professor and Dean
Department of Kinesiology
University of Waterloo
Waterloo, Ontario, Canada

Dear Dr. Kenyon:

As a graduate student at Michigan State University, I am using the ATPA SCALES, FORM D, for both men and women as an instrument for interpreting data for my project.

I have collected my data and I am having difficulty in weighting the data.

Would you please let me know the weighting procedure you use for each item in scoring the six subscales.

Sincerely yours,

Hossein Sepasi

University of Waterloo



Waterloo, Ontario, Canada
N2L 3G1

Faculty of Human Kinetics and Leisure Studies
Office of the Dean
519/885-1211

February 21, 1975

Mr. Hosein Sepasi,
814-C Cherry Lane,
Michigan State University,
East Lansing, Michigan 48823.

Dear Mr. Sepasi:

In response to your letter of February 8th, you will find enclosed a description of scoring procedures for ATPA Form D. scales.

In addition, I am enclosing some other information on the scales: namely, the use of a semantic differential approach.

I have no objection to you using the scales, but I would like to receive a report of the findings, and a copy of your data in machine readable form, together with code manual as a contribution to our data bank attitudes.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Gerald S. Kenyon', with a long horizontal flourish extending to the right.

Gerald S. Kenyon
Professor and Dean

GSK:gm

Enc.

APPENDIX B

THE ATTITUDE INVENTORIES

ATPA SCALES: FORM D

INTRODUCTION

The following is part of a research project designed to ascertain the opinions of college students about certain aspects of our society. The statements on the pages that follow are concerned with physical activity. We are asking you to express what you think or feel about each. The best answer is your personal opinion. Many different and opposing points of view are presented; you may find yourself agreeing strongly with some of the statements and disagreeing just as strongly with others.

INSTRUCTIONS

1. Express your agreement or disagreement by circling the appropriate symbols at the left of each statement, according to the following:

VSA: very strongly agree

SA: strongly agree

A: agree

U: undecided

D: disagree

SD: strongly disagree

VSD: very strongly disagree

For example, if you strongly disagree with a statement you circle the symbol SD as follows:

VSA SA A U D **(SD)** VSD a. The United Nations
should be abolished.

2. You should rarely need to use U (undecided).
3. Work independently of others.
4. Do not spend too much time on any one statement; try to respond, then go on to the next.
5. Respond to ALL statements.

IMPORTANT

1. DO NOT OPEN BOOKLET UNTIL TOLD TO DO SO.
 2. Respond to the statements IN THE ORDER GIVEN. (Do not go on to Page 2 until you have finished Page 1, etc.)
 3. The significance of this research depends upon the degree to which you express your own opinion.
-

ITEMS AND SCALE DESIGNATION FORM DM (Men)^a

1. I would gladly put in the necessary years of daily hard training for the chance to try out for the U.S. Olympic Team. (6)
2. I would prefer quiet activities like swimming or tossing a ball around rather than such activities as automobile or speedboat racing. (3)
3. Among the desirable forms of physical activity are those that show the beauty and form of human movement, such as modern dance and water ballet. (4)

4. I prefer those sports which require very hard training and involve intense competition such as interscholastic and intercollegiate athletics. (6)
5. A happy life does not require regular participation in physical activity. (5)
6. The risk of injury would be well worth it when you consider the thrills that come from engaging in such activities as mountain climbing and bobsledding. (3)
7. It is important that everyone belong to at least one group that plays games together. (1)
8. Of all physical activities, those whose purpose is primarily to develop physical fitness, would not be my first choice. (2)
9. Among the best physical activities are those which represent a personal challenge, such as skiing, mountain climbing, or heavy weather sailing. (3)
10. I would get by far the most satisfaction from games requiring long and careful preparation and involving stiff competition against a strong opposition. (6)
11. The degree of beauty and grace of movement found in sports is sometimes less than claimed. (4)
12. Almost the only satisfactory way to relieve severe emotional strain is through some form of physical activity. (5)
13. I would usually choose strenuous physical activity over light physical activity, if given the choice. (2)

14. Physical education programs should place a little more emphasis upon the beauty found in human motion. (4)
15. There are better ways of relieving the pressures of today's living than having to engage in or watch physical activity. (5)
16. Frequent participation in dangerous sports and physical activities are alright for other people but ordinarily they are not for me. (3)
17. I like to engage in socially oriented physical activities. (1)
18. A large part of our daily lives must be committed to vigorous exercise. (2)
19. I am not in the least interested in those physical activities whose sole purpose is to depict human motion as something beautiful. (4)
20. Colleges should sponsor many more physical activities of a social nature. (1)
21. Being strong and highly fit is not the most important thing in my life. (2)
22. The least desirable physical activities are those providing a sense of danger and risk of injury such as skiing on steep slopes, mountain climbing, or parachute jumping. (3)
23. For a healthy mind in a healthy body the only place to begin is through participation in sports and physical activities every day. (5)
24. A sport is sometimes spoiled if allowed to become too highly organized and keenly competitive. (6)

25. The time spent doing daily calisthenics could probably be used more profitably in other ways. (2)
26. I enjoy sports mostly because they give me a chance to meet new people. (1)
27. Practically the only way to relieve frustrations and pent-up emotions is through some form of physical activity. (5)
28. Given a choice, I would prefer motor boat racing or running rapids in a canoe rather than one of the quieter forms of boating. (3)
29. Strength and physical stamina are the most important prerequisites to a full life. (2)
30. Of all the kinds of physical activities, I dislike the most those requiring a lot of socializing. (1)
31. The most enjoyable forms of physical activity are games and sports engaged in on the spur of the moment, rather than those requiring long periods of training. (6)
32. One of the things I like most in sports is the great variety of ways human movement can be shown to be beautiful. (4)
33. Most intellectual activities are often just as refreshing as physical activities. (5)
34. Physical activities that are purely for social purposes, like college dances, are sometimes a waste of time. (1)
35. I am given great pleasure when I see the form and beauty of human motion. (4)

36. I believe calisthenics are among the less desirable forms (2)
of physical activity.
37. The self-denial and sacrifice needed for success in (6)
today's international competition may soon become too
much to ask of a thirteen or fourteen year old.
38. People should spend twenty to thirty minute a day doing (2)
vigorous calisthenics.
39. Too much attention is paid to those physical activities (4)
that try to portray human movement as an art form.
40. Sports are fun to watch and to engage in, only if they (6)
are not taken too seriously, nor demand too much time
and energy.
41. Of all physical activities, my first choice would be (2)
those whose purpose is primarily to develop and main-
tain physical fitness.
42. If I had to choose between "still-water" canoeing and (3)
"rapids" canoeing, "still-water" canoeing would be the
better alternative.
43. Watching athletes becoming completely absorbed in their (5)
sport nearly always provides me with a welcome escape
from the many demands of present-day life.
44. Participating in games and sports can sometimes spoil (1)
good friendships.
45. The idea that every human movement is beautiful is (4)
absurd.

46. Physical activities having a strong element of daring or requiring one to take chances are highly desirable. (3)
47. I could easily spend an hour watching the graceful and well coordinated movements of a figure skater or modern dancer. (4)
48. There are better ways of getting to know people than through games and sports. (1)
49. The fun is sometimes taken out of sports and games when they become too highly organized, overly competitive, and too demanding of the participant. (6)
50. Among the best forms of physical activity are those which use the body as an instrument of expression. (4)
51. Since competition is fundamental to American society, sports and athletics need to be much more demanding and competitive than at present. (6)
52. The best thing about games and sports is that they give people more confidence in social situations. (1)
53. One of the best forms of physical activity is that which provides a thrilling sense of danger such as sailing in heavy weather or canoeing on river rapids. (3)
54. Regular physical activity is the major pre-requisite to a satisfying life. (5)
55. Vigorous daily exercises are absolutely necessary to maintain one's general health. (2)
56. One of the most desirable forms of physical activity is social dancing. (1)

57. In this country there is sometimes too much emphasis on striving to be successful in sports. (6)
58. I would enjoy engaging in those games and sports requiring, to a large extent, the defiance of danger. (3)
59. Most people could live happy lives without depending upon frequent watching or participating in physical games and exercise. (5)

^anumerals in parentheses designate scale; e.g., (3) refers to the scale representing physical activity as the "pursuit of vertigo."

ITEMS AND SCALE DESIGNATION
FORM DW (Women)

1. I would prefer quiet activities like swimming or golf, rather than such activities as water skiing or sail boat racing. (3)
2. I would gladly put up with the necessary hard training for the chance to try out for the U.S. Women's Olympic Team. (6)
3. The most important value of physical activity is the beauty found in skilled movement. (4)
4. Physical education programs should stress vigorous exercise since it contributes most to physical fitness. (2)

5. The years of strenuous daily training necessary to prepare for today's international competition is asking a lot of today's young women. (6)
6. The need for much higher levels of physical fitness has been established beyond all doubt. (2)
7. Among the best physical activities are those which represent a personal challenge, such as skiing, mountain climbing, or heavy weather sailing. (3)
8. Among the most desirable forms of physical education are those which present the beauty of human movement such as modern dance and water ballet. (4)
9. I would get by far the most satisfaction from games requiring long and careful preparation and involving stiff competition against a strong opposition. (6)
10. A large part of our daily lives must be committed to vigorous exercise. (2)
11. The best way to become more socially desirable is to participate in group physical activities. (1)
12. Almost the only satisfactory way to relieve severe emotional strain is through some form of physical activity. (5)
13. Frequent participation in dangerous sports and physical activities are alright for other people but ordinarily they are not for me. (3)
14. Physical education programs should place much more emphasis upon the beauty found in human motion. (4)

15. If given a choice, I sometimes would choose strenuous rather than light physical activity. (2)
16. There are better ways for relieving the pressures of today's living than having to engage in or watch physical activity. (5)
17. I like to engage in socially-oriented physical activity. (1)
18. A part of our daily lives must be committed to vigorous exercise. (2)
19. I am not particularly interested in those physical activities whose sole purpose is to depict human motion as something beautiful. (4)
20. Colleges should sponsor many more physical activities of a social nature. (1)
21. For a healthy mind in a healthy body the only place to begin is through participation in sports and physical activities every day. (5)
22. The least desirable physical activities are those providing a sense of danger and risk of injury such as skiing on steep slopes, mountain climbing, or parachute jumping. (3)
23. Being physically fit is not the most important goal in my life. (2)
24. A sport is sometimes spoiled if allowed to become too highly organized and keenly competitive. (6)
25. I enjoy sports mostly because they give me a chance to meet new people. (1)

26. Practically the only way to relieve frustrations and pent-up emotions is through some form of physical activity. (5)
27. The time spent doing daily calisthenics could probably be used more profitably in other ways. (2)
28. Given a choice, I would prefer motor boat racing or running rapids in a canoe rather than one of the quieter forms of boating. (3)
29. Of all the kinds of physical activities, I don't particularly care for those requiring a lot of socializing. (1)
30. One of the things I like most in sports is the great variety of ways human movement can be shown to be beautiful. (4)
31. Most intellectual activities are often just as refreshing as physical activities. (5)
32. Strength and physical stamina are the most important pre-requisites to a full life. (2)
33. Physical activities that are purely for social purposes, like college dance, are sometimes a waste of time. (1)
34. The self-denial and sacrifice needed for success in today's international competition may soon become too much to ask of a thirteen or fourteen year old girl. (6)
35. I am given unlimited pleasure when I see the form and beauty of human motion. (4)
36. I believe calisthenics are among the least desirable forms of physical activities. (2)

37. Watching athletes becoming completely absorbed in their sport nearly always provides me with a welcome escape from the many demands of present-day life. (5)
38. If I had to choose between "still-water" canoeing and "rapids" canoeing, "still-water" canoeing would usually be my choice. (3)
39. There are better ways of getting to know people than through games and sports. (1)
40. People should spend twenty to thirty minutes a day doing vigorous calisthenics. (2)
41. There is sometimes an over-emphasis upon those physical activities that attempt to portray human movement as an art form. (4)
42. Physical activities having an element of daring or requiring one to take chances are desirable. (3)
43. Since competition is a fundamental characteristic of American society, highly competitive athletics and games should be encouraged for all. (6)
44. A happy life does not require regular participation in physical activity. (5)
45. The best form of physical activity is when the body is used as an instrument of expression. (4)
46. Sports are fun to watch and to engage in, only if they are not taken too seriously, nor demand too much time and energy. (6)

47. Calisthenics taken regularly are among the best form of exercise. (2)
48. I could spend many hours watching the graceful and well coordinated movements of the figure skater or modern dancer. (4)
49. The best thing about games and sports is that they give people more confidence in social situations. (1)
50. Among the best forms of physical activity are those providing thrills such as sailing in heavy weather or canoeing on river rapids. (3)
51. Regular physical activities is the major pre-requisite to a satisfying life. (5)
52. In this country there is sometimes too much emphasis on striving to be successful in sports. (5)
53. I would enjoy engaging in those games and sports that require a defiance of danger. (3)
54. Most people could live happy lives without depending upon frequent watching or participating in physical games and exercise. (5)

WEAR PHYSICAL EDUCATION ATTITUDE SCALES, WPEAI

FORM A

1. If for any reason a few subjects have to be dropped from the school program, physical education should be one of the subjects dropped.
2. Physical education activities provide no opportunities for learning to control the emotions.
3. Physical education is one of the more important subjects in helping to establish and maintain desirable social standards.
4. Vigorous physical activity works off harmful emotional tensions.
5. I would take physical education only if it were required.
6. Participation in physical education makes no contribution to the development of poise.
7. Because physical skills loom large in importance in youth, it is essential that a person be helped to acquire and improve such skills.
8. Calisthenics taken regularly are good for one's general health.
9. Skill in active games or sports is not necessary for leading the fullest kind of life.
10. Physical education does more harm physically than it does good.
11. Associating with others in some physical education activity is fun.
12. Physical education classes provide situations for the formation of attitudes which will make one a better citizen.

13. Physical education situations are among the poorest for making friends.
14. There is not enough value coming from physical education to justify the time consumed.
15. Physical education skills make worthwhile contributions to the enrichment of living.
16. People get all the physical exercise they need in just taking care of their daily work.
17. All who are physically able will profit from an hour of physical education each day.
18. Physical education makes a valuable contribution toward building up an adequate reserve of strength and endurance for everyday living.
19. Physical education tears down sociability by encouraging people to attempt to surpass each other in many of the activities.
20. Participation in physical education activities makes for a more wholesome outlook on life.
21. Physical education adds nothing to the improvement of social behavior.
22. Physical education class activities will help to relieve and relax physical tensions.
23. Participation in physical education activities helps a person to maintain a healthful emotional life.
24. Physical education is one of the more important subjects in the school program.

25. There is little value in physical education as far as physical well-being is concerned.
26. Physical education should be included in the program of every school.
27. Skills learned in a physical education class do not benefit a person.
28. Physical education provides situations for developing desirable character qualities.
29. Physical education makes for more enjoyable living.
30. Physical education has no place in modern education.

FORM B

1. Associations in physical education activities give people a better understanding of each other.
2. Engaging in vigorous physical activity gets one interested in practicing good health habits.
3. The time spent in getting ready for and engaging in a physical education class could be more profitably spent in other ways.
4. A person's body usually has all the strength it needs without participation in physical education activities.
5. Participation in physical education activities tends to make one a more socially desirable person.
6. Physical education in schools does not receive the emphasis that it should.
7. Physical education classes are poor in opportunities for worthwhile social experiences.

8. A person would be better off emotionally if he did not participate in physical education.
9. It is possible to make physical education a valuable subject by proper selection of activities.
10. Developing a physical skill brings mental relaxation and relief.
11. Physical education classes provide nothing which will be of value outside the class.
12. There should not be over two one-hour periods per week devoted to physical education in schools.
13. Belonging to a group, for which opportunity is provided in team activities, is a desirable experience for a person.
14. Physical education is an important subject in helping a person gain and maintain all-round good health.
15. No definite beneficial results come from participation in physical education activities.
16. Engaging in group physical education activities is desirable for proper personality development.
17. Physical education activities tend to upset a person emotionally.
18. For its contributions to mental and emotional well-being physical education should be included in the program of every school.
19. I would advise anyone who is physically able to take physical education.
20. As far as improving physical health is concerned a physical education class is a waste of time.
21. Participation in physical education class activities tends to develop a wholesome interest in the functioning of one's body.

22. Physical education classes give a person an opportunity to have a good time.
23. The final mastering of a certain movement or skill in a physical education class brings a pleasurable feeling that one seldom experiences elsewhere.
24. Physical education contributes little toward the improvement of social behavior.
25. Physical education classes provide values which are useful in other parts of daily living.
26. Physical education should be required of all who are physically able to participate.
27. The time devoted to physical education in schools could be more profitably used in study.
28. The skills learned in a physical education class do not add anything of value to a person's life.
29. Physical education does more harm socially than good.