THE INFLUENCE OF THE FOUNDATIONS OF PHYSICAL EDUCATION COURSE AT MICHIGAN STATE UNIVERSITY UPON THE ATTITUDES OF FRESHMAN MALE STUDENTS

Thesis for the Degree of M. A.

MICHIGAN STATE UNIVERSITY
EDWARD DERRICK BELL

1967

THE INFLUENCE OF THE FOUNDATIONS OF PHYSICAL EDUCATION COURSE AT MICHIGAN STATE UNIVERSITY UPON THE ATTITUDES OF FRESHMAN MALE STUDENTS

By

Edward Derrick Bell

AN ABSTRACT

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

MASTER OF ARTS

Department of Health, Physical Education, and Recreation

1967

Approved W. W. Hewner

ABSTRACT

THE INFLUENCE OF THE FOUNDATIONS OF PHYSICAL EDUCATION COURSE AT MICHIGAN STATE UNIVERSITY UPON THE ATTITUDE OF FRESHMAN MALE STUDENTS

by Edward Derrick Bell

Statement of the Problem.--This study was undertaken as a preliminary attempt to evaluate the Foundations of Physical Education course, a requirement of all male students at Michigan State University, in terms of the stated objectives of this course.

Methodology.--Thirty-five freshman, male students, who were enrolled in the Foundations of Physical Education course at Michigan State University, Spring Term, 1966, were surveyed in an attempt to determine if their attitude toward physical activity had been affected as a result of taking the course. The questionnaire technique of attitude measurement was employed.

The questionnaire was developed by the investigator using the Likert technique. It consisted of eighty-two items, sixty stated positively and twenty stated nagatively. From this questionnaire, twenty-five items that demonstrated a high power of discrimination between subjects were extracted and placed on a short form questionnaire. The two forms of the questionnaires were administered twice to the Foundations classes, with approximately one half of the subjects receiving

the long and one half receiving the short form. The initial testing was undertaken the first class meeting and the post testing was accomplished on the last class meeting; a span of ten weeks. The subjects receiving the long-form questionnaire for the pre-test also received the long form for the post-test, with the same procedure holding true for the short-form subjects.

Each item of both questionnaires was responded to by the subjects indicating the degrees of agreement ranging from "strongly disagree" to "strong agree." The responses were weighted from 1 to 5 respectively with the scale being reversed at the time of scoring for negatively stated items.

The shift in attitudes was statistically analyzed utilizing the Chi Square technique. A comparison of the two forms of the questionnaire, as to their relative power of measurement, was undertaken using tests for the differences between means.

Conclusions

1. A great majority of students come into the Foundations course with a positive attitude toward physical activity as measured by the instrument developed.

2. The data suggest that the attitudes of most students are unchanged as a result of taking the Foundations of Physical Education Course.

3. The reliability of the instrument proved to the quite low, even when the period of time between two administrations of the questionnaire was relatively short. The validity of the instrument, when tested for consistency, proved to be somewhat better than the reliability. It seems that the instrument should be refined further before a true assessment of its worth can be made.

4. When comparing the data obtained using the long and short form questionnaires, it seems apparent that the two forms are relatively equal in their ability to evaluate attitudes toward physical activity.

THE INFLUENCE OF THE FOUNDATIONS OF PHYSICAL EDUCATION COURSE AT MICHIGAN STATE UNIVERSITY UPON THE ATTITUDES OF FRESHMAN MALE STUDENTS

By

Edward Derrick Bell

A THESIS

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

MASTER OF ARTS

Department of Health, Physical Education and Recreation

1967

DEDICATION

This thesis is dedicated to my parents Carl and Ann Bell who through their insight and sacrifice made it possible for me to receive my education.

ACKNOWLEDGMENTS

The author is grateful for the opportunity to complete this study under the guidance and direction of Dr. William Heusner.

Special appreciation is due: to Dr. Wayne Van Huss, Dr. Gale Mikles, Dr. Janet Wesset, Mr. Herbert Olson and Miss Jean McIntyre for their part in the construction of the measurement instrument; and to Mr. Santo Pasqualucci and Mr. Donald Clements for their technical assistance.

--Edward D. Bell

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

The Foundations of Physical Education course, which is a requirement of all male students who attend Michigan State University, has been in existence since 1960. It constituted a new concept for the presentation of an introductory course in physical education at the university level. Although the program is still in its infancy, other universities have sought to adopt the Foundations approach in its entirety or with only minor changes. This is somewhat disturbing because for any program to succeed it must be revised and supplemented, so that it is current with present needs. It must also be adapted to meet the needs of the population upon which it is supposed to have influence.

To accomplish the goals of physical education, especially in the realm of an introductory course, emphasis must be placed on attitude. Since the future behavior of individuals depends largely upon attitude internilization, it seems proper that the efforts of the physical educator be directed at those attitudes which will hopefully guide the student toward desired goals.

It is the intent of the Foundations course to accomplish the aforemention attitude change by presenting a program designed to give the students rudimentary knowledge of physical

education including its physiological, sociological and psychological concepts.

Statement of the Problem

This study was undertaken as a preliminary attempt to evaluate the Foundations of Physical Education course a requirement of all male students at Michigan State University, in terms of the stated objectives of this course.

In particular, the purposes of this study are:

(1) To determine if the attitudes of the students toward physical activity are changed as a result of completing the Foundations course.

(2) To construct a tool which can be used by future investigators to assess the progress of Foundations of Physical Education.

Need for the Study

In order to meet the criterion of a useful program, which the writer defines as a program that contributes something of value to the students, it must be sound in its approach.

Attempts have been made to evaluate the men's Foundations course in terms of its acceptability as a course to freshman students (22) and in terms of the academic and physical correlates present in enrolled students (10). Anna Robinson Ganung evaluated the effectiveness of television and non-television instructional procedures in the Foundations course (13). It has not, however, been evaluated as a total

program. The question of whether or not the Foundations course is accomplishing it objectives must be answered. With evaluation, proper revisions can be made based on concrete facts or at least well founded beliefs.

The writer believes that this study is a necessity at this time because of the critical inspection the programs of the various colleges are receiving currently. He sees the physical education requirements as a necessity and hopes that the Foundations course can be defended to any administrator.

Definition of Terms

Activity.--For the purpose of this study, "Activity" refers to those physical functions in which an individual engages that involve effective and efficient movement of the body.

Bio-physiological aspects.--The term "bio-physiological aspects" refers to those aspects of man which are concerned with his continued health and the maintenance of his bodily functions.

Sociological aspects.--The term "sociological aspects" of activity refers to those aspects of man which are concerned with his ability to integrate effectively with others through work and leisure-time activities.

Psychological aspects.--The "physchological aspects" dealt with in this study concern themselves with those factors dealing with personality integration, self-image, self-motivation, neuro-physiological function (tension) and enhancement of self.

History.--As "history" is used in this study, it refers to other events that happened to the test group during the elasped time between the pre-test and post-test that might have contributed to the results along with the experimental factor (7).

Muturation.--As "maturation" is used in this study, it refers to those effects in relation to the test group which are systematic with the passage of time but are not a function of the specified experimental factor (7).

Statistical regression.--"Statistical regression," as used in relation to the test group, refers to shifts toward the mean which are due to random imperfections of the measurement instrument or random instability within the population, as reflected in the test-retest reliability measurement (7).

Testing procedure.--The "testing procedure," as related to the internal validity of the investigation, refers to the following phenomenon (7): often person taking a test the second time systematically mark scores differently than the first time. This is due in part to the effect of "reactive measurements," a term which refers to anything that makes a subject aware or conscious of the experiment. Any condition not part of the normal environment will yield reactive measurements.

Attitude.--Krech (20) defines attitudes as an enduring organization of motivational, emotional, perceptual, and

cognitive processes with respect to some aspect of the individual's world. Krech's definition of attitude will be used in this study.

Attitudes may be inferred from the choices implicit in overt behavior. When such choices are observed under stable environmental conditions, predictions of future responses under similar conditions may be accurately made (13).

Limitations of the Study

1. Limitations related to the sample.--In conjunction with the stated purpose of this study, it was limited to male, freshman, students at Michigan State University enrolled in Foundations of Physical Education. The sample was taken during the Spring Term, 1966. The total enrollment was used as the sample. Because by the Spring term the majority of freshman students have completed the Foundations course, the total sample was considerably smaller than desired.

2. Limitations related to the experimental design.--The investigator utilized the Pre-test Post-test design in this study. There is one basic limitation in this design that precipitates other limitations in regard to the internal and external validity of the experiment. This limitation was the necessary elimination of an equivalent control group. The control group was eliminated because the investigator could not satisfy himself that a group equivalent to the test group existed.

Inherent in this investigation were variables that were not controlled, thus the results are less interpretable than they might be. These extraneous variables affecting the outcome of the study were history, maturation, statistical regression and the testing procedures (See definition of terms).

Admittedly the Pre-test, Post-test, Control Group Design would have controlled for these variables or at least made known their effects upon the results of the investigation.

CHAPTER II

REVIEW OF LITERATURE

Introduction

A major concern of educators today is the development of instructional materials which will promote desired attitudes in other students. This is an absolute necessity to achieve maximum success in their endeavors.

It is the writer's purpose in this review of literature to provide a general background for the theory of attitude measurement and then to delve into some of the pertinent attitude studies that have been conducted by physical educators. The technique of attitude scale construction will not be a part of this review.

Theoretical Background

"Attitudes can no longer be considered to be unmeasurable. The work of Thurstone, Watson, Chave and others have indicated that it is feasible to measure attitudes reliably in cases where subjects are sufficiently cooperative to answer truthfully various questions that are put to them." This statement by Olson (28) sets the proper foundation for the study of attitude. Dunlap (10) relates that there is general agreement among writers that attitudes are true indicators of behavior. A given attitude, in general will be followed by a specific "type of activity." He further states that there is some

discrepancy between attitude and behavior; but, he is convinced that the discrepancy is a constant one.

Krech (20) feels that attitudes may be reflected in the behavior of the individual or his immediate experience. Under this assumption both behavioral analysis and introspective analysis can be utilized for measurement. On the introspective level the individual himself, in terms of his immediate experiences, may be able to provide data for the measurement of his attitudes.

Lickert (22) says that a series of verbal propositions dealing with the same general social issue are assumed to be more less equivalent, or at least to be so closely related as to permit prediction from knowledge of a subject's attitude on one issue to the same subject's attitude on other aspects of the same issue.

Lundberg (23) states that the attitudinal behaviors that are of primary concern are those which serve as stimulus-response mechanisms between people and those which significantly affect their social interaction and their adjustment to their environment (language is the most important consideration in this category). "The principle aspect of attitude which concerns us in measuring therefore is that aspect which takes the form of opinions expressed in language." Ferguson (12) adds that it is impossible to get any closer to the underlying physical order of an attitude than its expression.

Thurstone (32) feels that attitudes taken by a person indicate the values discovered in his personal and social experience. Kerch (20) adds that the manner in which beliefs and attitudes reflect themselves in behavior and experience is governed, in part, by the nature of the situation.

It is the concensus of opinion of most social psychologist that attitudes can be measured only indirectly on the basis of inferences drawn from the individual's behavior and immediate experience. Bain (1) reflects that the best sources for attitude assessment are indirect overt behavior.

Likert (22) says that verbal declarations of opinion and attitude can be regarded as "an indirect method of measuring dispositions" which are most easily signified and expressed in verbal form. Katz (19) supports the principle of indirect measurement by stating "that the very nature of some attitudes does not permit direct questioning."

One of the more practical advantages of indirect measurement is that it enables the experimenter to measure without tending to produce an effect on the attitude itself. A second advantages lies in the possibility of concealing from the individual the extent of the measurement; thus, it may make for more valid determination (20).

Some Measuring Specifics

> The true allocation of an individual to a position on an attitude scale is an abstraction, just as the true length of a chalk line, temperature of a room. . . . To do this we may use various indicies, such as the opinions that he endorses, his overt acts, his past history and it is expected that discrepancies will appear as the true attitude of the individual is estimated by different indicies (33).

To measure attitude is to devise a method whereby the distribution of an attitude in a group of pecple on a specified issue may be represented in the form of a frequency distribution (32). Thurstone continues, saying the baseline represents ideally the whole range of attitudes from those who are most strongly in favor of the issue to those who are most strongly against it.

Wang (34) feels that the crucial task which first confronts one in constructing an attitude scale for a given issue, is the collection of attitude statements. This is not a technical part of the construction method, but the success or failure of the scale depends much upon how well the initial list of statements is compiled and edited.

Bain (2) relates that most attempts to study attitudes have been by way of getting verbal responses through questionnaires, rating verbal symbols in graduations of liking or disliking and asking people for preferences, desires or interests. Symond (31) agrees that prolific use of the questionnaire has been made to explore and to tap attitudes on various social issues.

Thurstone (33) says regarding the use of attitude scales,

> We shall assume that the attitude scale is used only in those situations in which one may reasonably expect people to tell the truth about their convictions or opinions. Also that the scale be used only in those situation that offer a minimum pressure on the attitude to be measured.

Symonds (31) feels that attitude questionnaires as a measure of opinion are valid only to the extent that they agree with other indications of a person's choice or tendency to act.

Bain (1) emphasized that the final test of attitude is, "How do persons behave." Statistical treatment of recorded uniformities is urged as the only valid method of scientific generalization.

Lundburg (23) relates that the only scientific approach to the study of attitude through questionnaire is to validate the subject's answer by a selection of some or all of his overt, symbolic responses and by giving a description of them under given conditions.

Krech (20) believes that the validity of measurement of beliefs and attitudes can be determined only indirectly, in terms of prediction of behavior based on such measurements.

There are some limitations involved in the measurement of attitudes:

Sherman (30) feels the basic limitation is in the assumption that the replies of the subjects indicate their true tendency to act in a given way. He further states that

the opinion of an individual often has relatively little relationship to his true attitude.

Thurstone (32) states that one can measure such attributes as can be represented on a linear continuum i.e. volume, price, length, etc. . . in attitudes we are limited to the "more or less" type judgment.

Bain (1) gives a desenting opinion.

> A critical examination of the concept 'attitude' reveals its scientific shortcomings from (a) emphasis is upon its normative rather than upon its descriptive aspects (b) too much emphasis on subjective factors and too little on objective overt behavior and (c) the inaccuracy undefiniteness and anarchistic confusion of sociological terms.

Thurstone (32) agrees that the phenomena that we call social are exceedingly difficult to describe in objective terms and quantative measurement. But he implicitly believes that all we can do with an attitude scale is to measure the attitude actually expressed with the full realization that the subject may be consciously hiding his true attitude or that the social pressure of the situation may make him really believe what he expresses.

Pertinent Attitude Studies In Physical Education

An early study concerning attitude measurement was reported by Wear (38). With the purpose of trying to develop an instrument which would enable one to make a reliable and valid assessment of the direction and intensity of individual and group attitudes toward physical education as an activity course, Wear constructed an attitude inventory based on the Likert technique.

Some of the conclusions reached as a result of the use of this inventory were:

> 1. Through responses to a relatively small number of statements related to the outcomes sought by means of physical education activities; it is possible to secure a reliable and valid evaluation of attitudes toward physical education.
>
> 2. It is believed that either the total inventory or the 40-item Short Form will serve a useful purpose when used as an evaluative instrument for securing an objective assessment of changes in attitude toward physical education.

Nemson (27) studied specific annoyances in relation to student attitude in physical education using a rating scale based on the Thurstone technique.

He concluded that:

> Possible ways of reducing individual resentment against the compulsory features of a required program "might" include increasing the appeal of the program to the poor-attitude group by discovering and including, activities that interest them and reducing to a practical minimum the specific factors that are objectionable.

Nelson (25) using an eceltic-type questionnaire studied the personality and attitude differences associated with the elective substitution of R.O.T.C. for the physical education requirement in high school.

He concluded:

> The boys who took military training instead of physical education had less favorable attitudes toward competion, games and athletics.

In 1953 Bell and Walters (4) made a survey of the attitudes toward physical activity at the University of Michigan, on a total of eight hundred and fifty-seven women, by means of the questionnaire technique. The purpose of this study was to evaluate the women's program in terms of student

attitudes. The questionnaire was divided into three parts: (a) check list pertinent to the backgrounds of the students, (b) questions based on the objectives of physical education, and (c) the Wear Attitude Scale.

Some of the conclusions were as follows:

1. Freshmen who had physical education in high school had a higher mean attitude toward physical education as an activity course than freshmen who had had no physical education in high school and higher than senior's who had had physical education in high school.

2. There seems to be a positive and significant relationship between the following:
(a) Attitude and the importance of dance as part of their recreation program.
(b) Attitude and the extent to which they enjoy their physical education classes.

Moore (24) conducted a study similar to that conducted by Bell and Walters. Using Form A of the Bues-Remmers' scale she surveyed one hundred and seventy-nine women at the University of California at Los Angeles. She found a high favorable general attitude among college women toward physical activity.

Bullock (6) using the questionnaire technique, surveyed the attitudes of freshman women toward required physical education at the University of Oregon. She concluded that in the case of required physical education, all factors causing poor attitudes or distastes are of a nature that can be lessened, or in most cases entirely eliminated, by improved methods and organizations in high schools and colleges.

Broer (5) using the Wear Physical Education Attitude Inventory conducted an attitude toward physical education study among women students at the University of Washington.

She concluded:

1. The great majority of the students enrolled in physical education classes expressed a very favorable attitude toward physical education.

2. A high percentage of the students agreed that physical education activity classes contribute to social development and mental and physical health.

Kappes (18) made the following recommendation after concluding her study on the attitudes of college women toward physical education: The significant degree of a relationship between estimated skill and desire for instruction may indicate that estimated skill is less a determining factor than general attitude toward physical education with regard to instruction.

Carr (8) also made a study involving the relationship between success and selected attitudes in high school physical education. Using a questionnaire technique, Carr covered three main areas: social, personal and activity. She reasoned that since motor ability and intelligence were more or less inherent qualities, teachers should be more aware of student's attitudes. She suggests that if undesirable attitudes are obstacles to learning, they should be removed.

Haselton (16) conducted a study involving the social aspects of team games and individual games. She used a questionnaire to determine if there were any differences in attitudes in respect to selected social traits in participants in the three specific sports that she chose. Her one major finding was that freshman students taking a team game as

part of their physical education requirement felt more strongly about certain social traits than do students taking individual sports.

Summary

There is much controversey regarding the measurement of attitudes. It seems evident that the techniques involved are becoming more and more refined as the interest in this function of social psychology grows. One could not justifiably take a stand and say that the complex social phenomenon of attitude still remains unmeasurable. Although there are inherent limitations in the methods of attitude measurement, they are not so great a barrier that they invalidate the results of a well-designed and well-conducted study.

Physical educators have joined in the search for the best methods of assessing attitudes. In the field today we see stress being placed on developing positive attitudes towards activity. The study of attitude is having its effect the various program of physical education around the nation; and, judging from the trends in the literature, there is more change in store.

CHAPTER III

DESIGN AND METHODOLOGY OF THE STUDY

Objectives

The Foundations of Physical Education course at Michigan State University has several stated basic objectives (See Appendix). These objectives were derived from the combined philosophies of the program's originators* and express what could be termed a modern approach to an introductory course in physical education. The objectives are student oriented and are practical for individual application throughout life.

For the sake of dealing with these objectives as a whole, the writer has reclassified them into four major classes of objectives. These are as follows:

Movement
Bio-Psychological
Sociological
Physcholcgical

Iherent in these classes of objectives is the total realm of experiences that an individual will be confronted with in life. They entail the whole-man concept which is now relevent in today's educational teachings. Education through the physical is the apparent doctrine.

---

*The Michigan State University Staff: Dr. W. Van Huss, Dr. J. Friedrich, Dr. R. Niemeyer, Mr. H. Olson, Dr. J. Wessel and Dr. R. Mayberry.

The Instrument of Evaluation

The instrument used for evaluation is a questionnaire containing an attitude scale that was developed using the Likert (22) technique. The scale includes items designed to measure attitudes about each of the four major classes of objectives of physical education. The questionnaire consists of eighty-six items, sixty-four stated positively and twenty-two state negatively. At the time of scoring the scales for the negative questions are reversed. The student indicates his degree of agreement or disagreement with an item by filling in a blank beneath the phrase which best expresses his feeling about the time. The answers are arranged in the following manner: "strongly disagree," "disagree," "no opinion," "agree," and "strongly agree." The choices are then weighted 1, 2, 3, 4, and 5 respectively.

The student is asked to consider physical activity in relation to his own beliefs and feelings. The directions state that this is not a test, but simply a survey to determine how freshman students feel about physical activity. The questionnaire also relates that there will be no attempt to connect any person with any paper.

Compiling the Questionnaire

To obtain the statements used in the questionnaire a standardized procedure was followed. The investigator and

co-investigator* asked the following questions of the Foundations classes during the Winter, term 1965:

What do you think are the long range objectives of this course?
What do you think are the objective of physical education?
What do you want to get out of this course?

The students were instructed to react to these questions according to their personal feelings. They were asked to make as many short, concise statements as they could for each of the questions. The students' statements were collected from all classes and then processed by the investigators. During the processing the badly worded, too lenghty, and unrelated statements were discarded. The investigators also discarded nearly duplicate statements concerning the same objective. Some revision of student statements was done for clarity.

After this screening process, a questionnaire containing the remaining 104 statements was constructed. This questionnaire was administered to four randomly selected freshman students. This pilot study served the dual purposes of determining the statements which had discrimination ability and it also gave an indication of the average time it took to respond to the questionnaire in this form.

The preliminary questionnaire was then revised and was ultimately reduced to the final long form which contained

---

*Miss Judith Phillips, a graduate student undertaking a similar evaluation on the Foundations of Physical Education Course for women at Michigan State University.

86 statements. The steps in this process, due to circumstances beyond the control of the investigators, did not necessarily follow in logical order.

a. The statements on the preliminary questionnaire were re-evaluated and eighteen were eliminated because they did not meet the investigators' standards for a good question.

b. The 104 statements on the preliminary questionnaire were submitted to four judges who were presumed by the investigators to be experts. This presumption was based on the knowledge and experience demonstrated by these persons. The judges, working independently, placed the statements in eleven piles ranging from least important (one) to most important for student comprehension (eleven).

c. The judges' ratings were compared by means of standard deviation. A standard deviation of greater than 1.5 was basis for considering the statement of little value as an item of measurement. The information gained from this comparison had no bearing on the selection of statements for the final questionnaire; however, this data was used in later evaluation of the questionnaire.

d. Twenty-six of the statements on the preliminary questionnaire, as subjectively determined by the investigators, were noted as having discriminating power. These statements were extracted and placed on a short form questionnaire. The statements making up the short form questionnaire are included on the final long form questionnaire. Of the twenty-six statements on the short form questionnaire, six are negatively stated.

Pre-Experimental Administration of Questionnaires

The questionnaires were administered to the Spring, 1966 Foundations classes. Each class was divided in half, with one half receiving the long form questionnaire (86 statements) and the remaining half receiving the short form questionnaire (26 questions). For the purpose of eliminating as much bias as possible, the subjects were told that they were part of an

activity study being conducted by the Michigan State University Sociology department. The investigator was the administrator, but not the teacher of the class. The subjects were ignorant of the investigator's identity.

Post-Experimental Administration of Questionnaires

On the last day of class, ten weeks after the initial testing, both forms of the questionnaire were re-administered to the Foundations classes. The long-form group received long-form questionniares identical with those of the first administration. The persons who received short forms initially again received short-form questionnaires identical with those of the first administration. Students adding the class after the initial testing were not permitted to take part in the final testing.

The pre- and post-experimental test scores were paired for both groups, according to a previously arranged code. The Chi Square statistical method of evaluation was used to determine whether or not there was a significant shift in attitude during the experimental period.

Validity of Instrument

The concurrent validity of the questionnaire was determined by computing the Pearson product movement coefficient of correlation (r) between the subjects' scores on each item of the questionnaire with their total scores for the questionnaire. This method gave an objective measurement of the instrument's internal consistency and also an

indication of which items had a high discrimination power.

Reliability of Instrument

To determine the reliability of the instrument, the long form of the questionnaire was administered to a naive group of students that were enrolled in tennis classes during the time of the investigation. These subjects were told identically the same information as the experimental group.

Following the initial administration to the reliability group, the long form questionnaire was re-radomized. This new form containing the same questions, only in a different order, was administered a second time to the same group fourteen days later. The answer sheets were paired and scored.

Pearson product moment coefficients of correlation (r) were computed for each question on the pre-versus the post-test ratings. A high coefficient of correlation was taken to signify a high degree of reliability.

CHAPTER IV

ANALYSIS OF DATA

The purpose of this investigation was:

1. To determine if the attitudes of students toward physical activity are changed as a result of completing the Foundations of Physical Education course at Michigan State University.

2. To construct a tool which can be used by future investigators to asses the progress of Foundations of Physical Education.

Rating of the Statements

The statements that were collected for the construction of the attitude scale were rated by four judges from one (least important) to eleven (most important) as described in the previous chapter. After these statements were returned by the judges, a number of them were re-worded for clarity before use on the questionnaire. As a result of this re-wording, it was felt by the co-investigators that the original connotations of some of these statements may have been altered, making the ratings these statements received invalid. These statements were not included in the computation of the judges' agreement.

Standard deviations were computed on the ratings given the remaining seventy statements and a maximum standard deviation of 1.5 points was set as the cut-off level for minimum acceptable agreement among judges. Operating under the assumption that the four were experts, it was felt that if

the ratings given a particular statement produced a standard deviation greater than 1.5 points, the item was in fact bad. These items are not found on the continuum. The thirty-three statements fulfilling this requirement are shown in Table 1. They are ranked according to their mean ratings in descending order of importance. Table 2 gives the means and standard deviations of the judges ratings for these thirty-three statements.

After the final testing, four statements (numbers 62, 65, 66, and 82) were discarded as uninterpretable. This action reduced the total number of statements on the long form questionnaire to eighty-two and on the short form questionnaire to twenty-five. Further calculations were based on these figures.

Validity

Concurrent validity was measured in this study since there was no known external criterion against which to measure validity. It was felt that if the individual items of the instrument could be shown to yield consistent response among subjects, then the instrument as a whole could be considered to be valid.

Each subject's total score for the questionnaire (pre-test orginal-long form) was tabulated. A simple correlation was run between this total score and the subjects' responses on each individual statement of the questionnaire. This necessitated a total of eighty-two correlations. A

Table 1.--Ranked statements having a standard deviation of 1.50 or less on the judges ratings.

Rank	Number	
1.	(5)	Exercises do not do that much good
2.	(12)	Physical education is a big waste
3.	(42)	Tough exams tire me so I do not need any physical activity after taking one
4.	(53)	There is no need to be able to plan a personal physical fitness program
5.	(66)	Physical education is ignored by most students
6.	(68)	I see almost no value in physical education
7.	(73)	There is no reason for an overweight person to change his present condition since he has been this way all of his life
8.	(79)	I do not take part in a sport activity unless persuaded by a friend
9.	(3)	All that physical education does is show your weaknesses
10.	(20)	Our medical technology is so advanced that we do not have to be physically fit
11.	(51)	Physical education classes gave me all the physical activity that I will ever need
12.	(58)	I don't think that physical education should be compulsory
13.	(86)	Physical fitness is good, but man can survive without it
14.	(13)	One has to be an athlete to be physically fit
15.	(46)	Television commercials are good sources of methods for staying fit
16.	(76)	Being able to play any games well is of little importance to me
17.	(77)	It is difficult to secure information concerning body health
18.	(41)	The only valuable outcome of an activity class is from the exercises done
19.	(2)	A good physical workout on the week-end is adequate exercise for the week
20.	(82)	Present information on health scares you into becoming fit
21.	(38)	The main purpose of physical education is to tell the person his or her capabilities in athletic events
22.	(7)	A physical education course will make you aware of conditions that can be improved on in your social life
23.	(84)	Competion is good for everyone
24.	(23)	I have found physical activities which I can enjoy in the coming years
25.	(39)	One should enjoy the physical aspects of line
26.	(49)	Regardless of how smart you are, your life is limited by how fit you are
27.	(36)	There is value in exercise and activity
28.	(57)	Physical education forms sensible ideas about fitness
29.	(15)	There is sheer pleasure in physical exertion
30.	(22)	Physical movement is a need and a joy
31.	(60)	The main outcome of physical education is fulfillment of the individual's physical potential
32.	(55)	Physical activity should become an integral part of the person's life
33.	(81)	Daily exercise should be carried on through life

Parenthetical numbers refer to original statement number as it appears on the long form questionnaire.

Table 2.--Ranked statements having a standard deviation of 1.50 or less on judges' ratings.

Rank	No.	Mean	Standard Deviation	Rank	No.	Mean	Standard Deviation
1.	(5)	1.00	0.00	17.	(77)	1.50	0.57
2.	(12)	1.00	0.00	18.	(41)	1.75	0.50
3.	(42)	1.00	0.00	19.	(2)	2.00	0.81
4.	(53)	1.00	0.00	20.	(82)	2.25	0.50
5.	(66)	1.00	0.00	21.	(38)	2.75	0.50
6.	(68)	1.00	0.00	22.	(7)	4.60	1.24
7.	(73)	1.00	0.00	23.	(84)	4.75	0.935
8.	(79)	1.00	0.00	24.	(23)	7.33	0.98
9.	(3)	1.25	0.480	25.	(39)	8.50	1.00
10.	(20)	1.25	0.295	26.	(49)	8.75	1.50
11.	(51)	1.25	0.760	27.	(36)	9.00	1.15
12.	(58)	1.30	0.96	28.	(57)	9.50	1.29
13.	(86)	1.30	0.489	29.	(15)	9.75	1.25
14.	(13)	1.50	0.57	30.	(22)	10.25	0.90
15.	(46)	1.50	1.00	31.	(60)	10.25	0.76
16.	(76)	1.50	1.00	32.	(32)	10.50	0.574
				33.	(81)	11.00	0.963

Parenthetical numbers refer to original statement number as it appears on the long form questionnaire.

minimum correlation of r = .500 was established as an acceptable level of consistency. Those statements with correlations below this level were considered to have little consistency of discrimination between negative and positive attitudes toward physical activity.

At the stated level, forty-five per cent of the statements proved to be acceptable. See Table 3. This percentage seems large enough to tentatively conclude that the instrument, as administered, possesses a minimal standard of validity.

Table 3.--Statements contained on the long form questionnaire with a coefficient of consistency large enough to be considered valid (r = .550).

No.	r	No.	r	No.	r
2	.666	33	.659	57	.680
3	.707	34	.517	59	.577
4	.867	35	.535	61	.730
6	.682	42	.946	68	.756
7	.980	45	.673	69	.850
8	.574	47	.500	72	.730
11	.797	48	.637	73	.666
12	.689	51	.551	78	.814
14	.839	52	.675	79	.694
16	.821	53	.609	80	.633
26	.612	54	.658	81	.723
29	.700	55	.833	85	.800
30	.985				

Reliability of Instrument

Correlations were computed between the scores obtained on each item of the pre-test and the scores obtained on the corresponding item on the post-test. The over-all correlation between the grand totals of pre-and post-test was r = 0.357. This was relatively low considering that only fourteen days elasped between the two administrations.

Setting the arbitrary correlation of r = .300 as a cut-off for minimum reliability, 36.6 per cent of the statements fall in this range. See Table 4.

The results are disturbing at best. Lack of interest on the part of the subjects during the post administration of the questionnaire might have had some

Table 4.--Questionnaire statements with a reliability coefficient of correlation (r) of 0.300 and above.

Number	Pre-test to Post-test Correlation
2	0.445
5	0.388
7	0.301
8	0.344
10	0.392
11	0.669
12	0.308
13	0.333
16	0.441
18	0.360
19	0.351
20	0.358
23	0.584
28	0.545
38	0.430
41	0.515
42	0.427
46	0.321
51	0.571
52	0.515
53	0.328
58	0.407
60	0.382
68	0.523
73	0.407
76	0.570
77	0.442
79	0.423
80	0.423
86	0.350

bearing on the outcome. The subjects were anxious to participate in a tennis competition immediately following the completion of the test session.

Consistency of Reliability Testing

Correlations were also computed between the scores obtained on each item having a reliability correlation of 3.00 and the pre- and post-test grand total scores. See Table 5. Over-all these correlations were higher than the ones computed for reliability. This is interpreted as a relatively high level of consistency of responses.

Comparison of Long and Short Form Questionnaires

To determine the strength of the long and short form questionnaires in relations to each other the following steps were undertaken:

a. The twenty-five statements which made up the original short (O-S) form were extracted from the original long form (O-L) pre-test and were re-scored as if they were the short form. A simple correlation was computed between the re-scored twenty-five (R-S) statement scores and the original long form pre-test scores. This correlation was found to be $r = 0.958$.

b. Means per question per subject were obtained from both the original long and the re-scored forms. The difference between the means was calculated for every subject. See Table 6.

c. To give an idea of the split consistency of the short form a t-test for the difference between means for independent populations was computed for the re-scored short form and the original short form. The result of this test was $t = 0.426$ which was not significant at the 95 per cent confidence interval.

Because of the high correlation ($r = 0.958$) and the non-significance found in any of the t-test for the difference between means, it seems conclusive that the two instruments are of nearly equal power as used in this study. Also that

Table 5.--Correlations between questionnaire statement scores with a reliability coefficient of correlation (r) of 0.300 and above and the pre- and post-test grand total scores.

Number	Item vs. Pre-test Total Score	Item vs. Post-test Total Score
2.	-0.741	-0.512
5.	0.712	0.320
7.	-0.027	-0.047
8.	0.089	0.097
10.	-0.051	-0.461
11.	0.803	0.555
12.	0.787	0.545
13.	0.608	0.394
16.	0.690	0.111
18.	0.715	0.078
19.	0.340	-0.158
20.	0.801	0.458
23.	0.766	0.442
28.	0.901	0.538
38.	0.562	0.543
41.	0.726	0.608
42.	0.658	0.472
46.	0.678	0.482
51.	0.783	0.419
52.	0.698	0.471
53.	0.734	0.485
58.	0.311	0.172
60.	-0.003	-0.207
68.	0.716	0.504
73.	0.659	0.150
76.	0.772	0.447
77.	0.281	0.248
79.	0.679	0.231
80.	0.405	0.349
86.	-0.171	-0.462

Table 6.--Difference between means per-subject comparison of long and short form questionnaires (alpha = .05).

Subject	Mean O-L	Mean R-S	t
1	3.54	3.48	-0.0107
2	4.02	3.76	0.0179
3	4.04	3.76	-0.0502
4	3.27	3.28	0.0017
5	3.94	4.24	0.0538
6	4.61	4.72	0.0197
7	3.91	4.04	0.0233
8	3.61	3.44	-0.0305
9	4.01	4.12	0.0197
10	2.67	2.64	0.0053
11	3.85	3.70	-0.0269
12	4.01	4.00	-0.0017
13	3.93	3.68	-0.0448
14	4.06	3.96	-0.0179
15	4.23	4.08	-0.0269
16	3.17	3.12	-0.0089
17	4.09	4.16	0.0215
18	3.46	3.44	-0.0035
19	4.39	4.40	0.0117
20	3.89	3.76	-.0233

the short form gives consistent results between two groups which can be assumed to be equal in attitude to start with.

Attitude Assessment

A. Prevailing Attitudes

An attempt was made to assess the initial attitudes of the test group by computing a difference between the means of the total scores of the subjects on the long and short form instruments and as assumed mean of 3.00 (netural opinion). The results are seen in Tables 7, and 8. To enable easy reference only non-significant results are tabled.

Table 7.--Non-significant data for the difference between an assumed neutral opinion mean and the actual pre-test mean for short form subjects.

Statement	Neutral Mean	Actual Mean	t
3	3.00	3.60	1.7181
6		3.40	1.2471
7		3.40	1.7018
9		3.47	1.9455
10		3.47	1.7998
16		3.06	0.1900
20		3.20	0.8981
22	3.00	3.67	1.4234

Alpha = .01

Table 8.--Non-significant data for the difference between an assumed neutral opinion mean and the actual pre-test mean for long form subjects.

Statement	Neutral Mean	Actual Mean	t
7	3.00	3.40	1.9015
26		3.40	1.7975
40		3.35	1.9256
49		3.45	1.8307
50		3.30	0.1240
52		3.45	1.8440
58		3.40	1.4553
60		3.40	1.7093
63		3.20	0.9368
69		3.55	2.0663
80	3.00	3.70	0.2898

Alpha = .01

Based on the relatively small percentages of non-significant factors in both groups (long - 14.6% and short - 36%) it would seem safe to say that the students came to Foundations with a generally positive attitude toward physical activity.

B. Attitude Shift

The Chi Square technique was used to determine if there was an attitude shift as a result of the experimental factor, the Foundations course. The results of the Chi Square computation are shown on Table 9 and 10. Chi Square was computed using the 90 per cent confidence interval as significant.

There is significance in 28.04 per cent of the statements on the long form and in 16 per cent of the statements on the short form. The change as shown by this data covers mainly the class objectives of activity and bio-physical. There is some shift in attitude in the psychological class, but relatively little in the sociological class.

Of course these data only show tendencies and cannot be quoted as steadfast conclusion due to the forementioned limitations.

Test Item Analysis

After an analysis of the statements contained on the long form questionnaire according to the criteria as set up in Tables 1 through 5, nine statements were found which met all of the minimum requirements for a good test item. It is

Table 9.--Significant chi square computation of scores on the long form questionnaire.

Statement	Chi Square	Statement	Chi Square
9	10.433	46	11.976
10	9.694	50	11.200
15	28.583	52	9.517
17	19.558	57	17.600
19	9.371	60	12.083
20	8.036	61	10.125
24	18.444	65	13.694
38	16.563	68	9.740
41	15.071	70	14.283
43	8.667	77	21.333
44	8.258	83	12.050
45	11.976		

Alpha = .05

Table 10.--Significant chi square computation of scores on the short form questionnaire.

Statement		Chi Square
3	(10)	10.500
14	(48)	12.000
22	(73)	9.810
26	(85)	9.986

Alpha = .05

Parenthetical numbers refer to statement number on long form questionnaire.

noted that these nine statements would be included in any future revision of the questionnaire.

Table 11.--Statements contained on long form questionnaire which meet the minimum requirements of a good test-item as set up in tables 1 through 5.

No.	Statement
2.	A good physical workout on the weekend is adequate exercise for the week.
7.	Physical education courses are nearly worthless.
12.	Physical education is a big waste.
42.	Tough exams tire me so I do not need any physical activity after taking one.
51.	Physical education classes give me all the physical activity that I will ever need.
53.	There is no need to be able to plan a personal physical fitness program.
68.	I see almost no value in physical education.
73.	There is no reason for an overweight person to change his present condition since he has been this way all of his life.
79.	I do not take part in a sport activity unless persuaded by a friend.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The chief objective of this study was to evaluate the effect the Foundations of Physical Education Course at Michigan State University had on the freshman, male students' attitudes toward physical activity. This was accomplished using a questionnaire survey. The questionnaire was developed and scored using the Likert technique.

Thirty-five people were studied: twenty subjects received a long-form questionnaire (82 items) and fifteen subjects received a short-form questionnaire (25 items). The test-retest experimental design was employed, with a ten-week span of time between the two test periods. The Chi Square method of evaluation was used to determine whether or not an attitude shift had taken place among students.

Conclusions

1. A great majority of students come into the Foundations course with a positive attitude toward physical activity as measured by the instrument developed.

2. The data suggest that the attitudes of most students are unchanged as a result of taking the Foundations of Physical Education Course.

3. The reliability of the instrument proved to the quite low, even when the period of time between two administrations of the questionnaire was relatively short. The validity of the instrument, when tested for consistency, proved to be somewhat better than the reliability. It seems that the instrument should be refined further before a true assessment of its worth can be made.

4. When comparing the data obtained using the long and short form questionnaires, it seems apparent that the two forms are relatively equal in their ability to evaluate attitudes toward physical activity.

Recommendations

On the basis of the results of this study, the following recommendations seem justifiable:

1. The study should be repeated using a larger number of subjects.

2. An attempt should be made to locate a group of students, comparable to the freshmen students taking Foundations at Michigan State University, so that they might be used as a control group.

3. A longitudinal study should be conducted on those who have taken Foundations of Physical Education to determine if the long range objective of the course are being realized.

4. The instrument which was developed for this investigation should be refined and re-evaluated before further use.

BIBLIOGRAPHY

BIBLIOGRAPHY

1. Bain, R., "An Attitude on Attitude Research," American Journal of Sociology, 33:940-957, 1927.

2. Bain, R., "Theory and Measurement of Attitudes and Opinions." Psychological Bulletin, 22:3570379,1930.

3. Baker, Mary C., "Factors Which May Incluence the Participation in Physical Education of Girls and Women 15-25 years of Age," Research Quarterly, 11:126-131, 1940.

4. Bell, Margaret and C. E. Walters, "Attitudes of Women at the University of Michigan Toward Physical Education." Research Quarterly, 24:379-391, 1953.

5. Bvoer, Marian R., Fox, K. S. and Way, E., "Attitude of University of Washington Women Students Toward Physical Education Activity." Research Quarterly, 26:379-384, 1955.

6. Bullock, Marguerite and Alden, F. D., "Some of the Factors Determining the Attitude of Freshman Women at the University of Oregon Toward Required Physical Education," Research Quarterly, 4(4):60-70, 1933.

7. Campbell, Donald T., "Factors Relevent to the Validity of Experiments in Social Settings." Psychological Bulletin, 4:279-312, 1957.

8. Carr, Martha G., "The Relationship Between Success in Physical Education and Selected Attitudes Expressed by High School Freshman Girls." Research Quarterly, 16: 176-191, 1945.

9. Dunlap, J. W. and Knoll, A., "Observations on the Methodology in Attitude Scales." The Journal of Social Psychology, 4:444-463, November, 1933.

10. Dundas, Chris James., Academic and Physical Correlates of Male Freshman at Michigan State University, M.A., 1963.

11. Edwards, Allen L. and Kenney, Kathryn C., "A Comparison of the Thurstone and Psychology, 30:72-83, 1946.

12. Ferguson, L., "The Requirements of an Adequate Attitude Scale." Psychological Bulletin 36:665-673, October, 1939.

13. Ganung, Anna Robinson., A Study to Investigate the Relative Effectiveness of Television and Non-Television Instruction Procedures in the Foundations of Phsycial Education Course. Michigan State University. M.A., 1963.

14. Harris, C. W. (Ed.) "Attitudes." Enclopedia-of Educational Research, New York: The Maximillan Company, p. 102, 1960.

15. Hartshorme, Hugh and Mark, A., "First Steps Toward a Scale for Measuring Attitudes." Journal of Education Psychology, 17:145-162, March, 1926.

16. Hazelton, Helen W. and Piper, J., "A Study of the Social Values of a Team Game and of Two Individual Sports as Judged by the Attitudes of Freshman College Women." Research Quarterly, 11:54-59, 1940.

17. Hughes, Byron O., "Test Results of the University of Michigan Physical Conditioning Program June 15-September 26, 1942. Research Quarterly, 13:498-511, 1942.

18. Kappes, Eveline E., "Inventory to Determine Attitudes of College Women Toward Physical Education and Student Services of the Physical Education Department." Research Quarterly, 25:429-438, 1954.

19. Katz, D. and Allport, F. H., Student's Attitudes, Syracuse, New York: The Craftsman Press, Inc., 1938.

20. Kresch, David and Crutchfield, R. S., Theory and Problems of Social Psychology. Ch. 7:205-272, 1948.

21. Labaw, Nye., A Study of the Exceptance and Rejection of the Foundations of Physical Course by Freshman Men at Michigan State University. Ed. D., 1960.

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

23. Lundberg, G. A., Social Research, New York, London, Toronto: Longmans, Green and Co., 1929.

24. Moore, Beverly Y., "The Attitude of College Women Toward Physical Activity as a Means of Recreation." Research Quarterly, 12:720-725, 1941.

25. Nelson, Gaylord A., "Personality and Attitude Differences Associated with the Elective Substitution of R.O.T.C. for the Physical Education Requirement in High School." Research Quarterly, 19:2-17, 1948.

26. Neilson, N. P. and Cozens, F. W., Achievement Scales in Physical Education Activities for Boys and Girls in Elementary and Junior High Schools, New York 18: A. S. Barnes and Co., 1934, pp. 16-37.

27. Nemson, Edward, "Specific Annoyances in Relation to Student Attitude in Physical Education." Research Quarterly, 20:336-347, 1949.

28. Olson, Dorothy, M., and Jones, V., "An Objective Measure of Emotionally Toned Attitudes," The Journal of Genetic Psychology, 39:174, 1931.

29. Richardson, Charles E., "Thurstone Scale for Measuring Attitudes of College Students Toward Physical Fitness and Exercise." Research Quarterly, 31:638-643, 1960.

30. Sherman, M., "Theories and Measurement of Attitudes." Child Development, 3:15-28, 1932.

31. Symonds, Percival M., Diagnosing Personality and Conduct, New York and London: The Century Co., 1931.

32. Thurstone, L. L., "Attitudes can be Measured." American Journal of Sociology, 33:529-554, 1938.

33. Thurstone, L. L., Chave, E. J., The Measurement of Attitude, Chicago: University of Chicago Press, 1929.

34. Wang, Charles K. A., "Suggested Criteria for Writing Attitude Statements." Journal of Social Psychology, 3:367-373, 1932.

35. Watson, G. B., "The Measurement of Less Tangible Qualities." Vocational Guidance, 4:281-289, 1926.

36. Watson, Goodwin B., The Measurement of Fair-Mindedness, New York: Teachers College, Columbia University, 1925.

37. Warner, Robert A., "Attitude Test and Methods." Journal of Higher Education, 19:315-316, June, 1948.

38. Wear, Carlos L., "The Evaluation of Attitude Toward Physical Education as an Activity Course." Research Quarterly, 22:114-126, 1951.

APPENDICES

APPENDIX A

APPENDIX A

List of Objectives

The subject is cognizant of the fact that effective, efficient movement is desirable for all activities encountered.

The situation advocates a regular activity program suited to the subject's individual needs.

Subject considers self a growing organism capable of learning and improving self through consistent searching and evaluation.

The subject has a realistic concept of self in relation to physical status in comparison with peers.

The subject enjoys and participates regularly in some form of physical activity voluntarily.

The subject has insight into activities that he can extend himself in vigorously relative to his condition and age.

The subject desires to maintain a level of condition suited to life.

The subject recognizes physical activity as a form of relaxation and as a means of releasing tension.

The subject develops ways to integrate activity pattern into his normal schedule of daily tasks.

The subject is conscious of the concept of weight control and its' importance to physical maintenance.

APPENDIX B

APPENDIX B

UN-TREATED RAW DATA SUMMARY LONG FORM RESPONSE TOTALS (N = 20)

	Sum Pre-Test Raw Scores	Sum Post-Test Raw Scores		Pre	Post		Pre	Post		Pre	Post
1.	86	80	23.	79	73	45.	78	75	67.	78	74
*2.	37	35	24.	70	84	*46.	44	39	*68.	37	33
*3.	32	37	25.	72	76	47.	77	77	*69.	49	40
4.	59	54	26.	68	71	48.	73	77	70.	72	75
*5.	32	34	27.	83	85	49.	69	75	71.	73	80
*6.	36	37	28.	84	83	50.	66	54	72.	81	78
7.	68	70	29.	81	79	*51.	39	39	*73.	39	37
8.	72	73	30.	73	73	52.	69	69	74.	74	77
9.	81	77	31.	72	68	*53.	43	39	75.	73	73
10.	74	66	32.	72	70	54.	79	76	*76.	40	34
11.	81	77	33.	85	85	55.	81	80	*77.	45	46
*12.	34	36	34.	83	78	56.	81	81	78.	82	83
*13.	34	37	*35.	30	38	57.	76	82	*79.	42	39
14.	78	74	36.	85	83	*58.	52	55	80.	74	81
15.	73	67	37.	85	80	59.	77	78	81.	83	78
16.	84	82	*38.	45	44	60.	68	71	82.	--	--
17.	73	77	39.	80	81	61.	70	76	83.	77	70
18.	76	78	*40.	53	51	62.	--	--	84.	82	74
19.	74	80	*41.	47	51	63.	64	67	85.	83	78
*20.	30	35	*42.	47	38	64.	79	76	*86.	44	47
21.	76	77	43.	76	82	65.	--	--	----	--	--
22.	80	73	44.	83	80	66.	--	--	----	--	--

*Negative question.

APPENDIX C

APPENDIX C

UN-TREATED RAW DATA SUMMARY SHORT FORM RESPONSE TOTALS (N = 15)

		Sum Pre-Test Raw Scores	Sum Post-Test Raw Scores			Pre	Post			Pre	Post
*1.	(2)	29	29	*11.	(35)	27	27	*21.	(68)	21	26
*2.	(3)	21	25	12.	(36)	68	62	*22.	(73)	35	20
3.	(10)	54	49	13.	(39)	65	65	*23.	(76)	30	31
4.	(14)	60	61	14.	(48)	56	58	24.	(81)	66	62
*5.	(20)	16	22	15.	(49)	57	52	25.	(82)	--	--
6.	(24)	51	60	16.	(50)	46	42	26.	(84)	60	46
7.	(26)	51	56	17.	(55)	61	58	----	----	--	--
8.	(29)	67	58	18.	(57)	66	63	----	----	--	--
9.	(30)	52	53	19.	(59)	61	57	----	----	--	--
10.	(32)	52	53	20.	(60)	48	50	----	----	--	--

*Negative questions.
Parenthetical numbers refer to corresponding numbers on long form questionnaire.

APPENDIX D

APPENDIX D

The statements withstanding the judges' ratings and the reliability standard and which showed a significant shift in attitude are as follows:

20. Our medical technology is so advanced that we do not need to be physically fit.

38. The main purpose of physical education is to tell the person his or her capabilities in athletic events.

41. The only valuable outcome of an activity class is from the exercises done.

46. Television commercials are good sources of methods for staying fit.

60. The main outcome of physical education is fulfillment of the individual's physical potential.

APPENDIX E

APPENDIX E

STATEMENTS COMPRISING SHORT FORM QUESTIONNAIRE

Short Form Number	Long Form Number	Short Form Number	Long Form Number
1	2	14	48
2	3	15	49
3	10	16	50
4	14	17	55
5	20	18	57
6	24	19	59
7	26	20	60
8	29	21	68
9	30	22	73
10	32	23	76
11	35	24	81
12	36	25	(drop) 82
13	39	26	84

ATTITUDES OF FRESHMEN TOWARD PHYSICAL ACTIVITY

Instructions for Questionnaire

This is a questionnaire designed to explore the attitudes of freshmen toward physical activity. It is concerned with your beliefs and feelings. There are no right or wrong answers. This is not a test.

There will be 86 statements for your consideration. Each statement has five possible responses; Strongly disagree (#1), Disagree (#2), No opinion (#3), Agree (#4), and Strongly agree (#5). The response is to be recorded on your answer sheet in the following manner:

Strongly disagree	disagree	no opinion	agree	strongly agree
1	2	3	4	5

After reading each statement you will know at once, in most cases, whether you agree or disagree with the statement. If you are undecided (or neutral) about the statement, then mark no opinion. Mark the response that you feel best reflects your personal opinion.

We are not concerned about connecting any person with any paper, so please answer each statement as you actually feel about it. Be sure to ANSWER EVERY STATEMENT.

1. It is good to know what exercises are appropriate for specific body areas.

2. A good physical workout on the week-end is adequate exercise for the week.

3. All that physical education does is show you your weaknesses.

4. I am never too busy to excercise.

5. Excercises do not do that much good.

6. Physical education courses are nearly worthless.

7. A physical education course will make you aware of conditions that can be improved on in your social life.

8. It is possible to tell a great deal about a person by the way he or she walks down the street.

9. Physical education gives interest in being active.

10. A healthy body is foremost in my mind.

11. Physical activity is an enjoyable break from classroom drudgery.

12. Physical education is a big waste.

13. One has to be an athlete to be physically fit.

14. Physical education encourages active part rather than passive observing.

15. There is sheer pleasure in physical exertion.

16. It is important to be active when you are at middle age.

17. We need to move and discover muscle to be aware of our movement capabilities.

18. Physical activity provides a change of pace.

19. A person must be physically fit in order to meet the stresses of life.

20. Our medical technology is so advanced that we do not need to be physically fit.

21. Physical activity gives an individual an interest beyond his work.

22. Physical movement is a need and a joy.

23. I have found physical activities which I can enjoy in the coming years.

24. Physical education gives me the means to remain physically fit throughout my life.

25. Many things you do in life are concerned with physical education.

26. Physical activity provides an understanding of spectator sports.

27. Now is the time to acquire skills necessary for active participation now and in later life.

28. Sport activities are enjoyable.

29. Physical activity can help me to relax and enjoy life.

30. Being physically educated gives meaning to activities that a person engages in daily.

31. Physical education motivates you to do exercises out of class.

32. Physical education modifys one's outlook on life by giving that person a feeling or worth.

33. It is necessary to have physical activity at all ages.

34. You acquire better living through recreational endeavors.

35. Using my leisure for physical activity is a waste of time.

36. There is value in excercise and activity.

37. Physical activity is a means of working off tension.

38. The main purpose of physical education is to tell the person his or her capabilities in athletic events.

39. One should enjoy the physical aspects of life.

40. Undesireble traits can not be modified through physical education.

41. The only valuable outcome of an activity class is from the exercises done.

42. Tough exams tire me so I do not need any physical activity after taking one.

43. Physical education should be stressed more at early ages.

44. Being physically active adds zest to life.

45. Excercise can replace idle moments.

46. Television commercials are good sources of methods for staying fit.

47. Man should know how to use his body to help satisfy his psychological needs.

48. Physical education teaches broad principles which a person can apply to himself at any age.

49. Regradless of how smart you are, your life is limited by how fit you are.

50. My day would not be complete if I haven't excercised.

51. Physical education classes gave me all the physical activity that I will ever need.

52. There is a need to retire from the daily grind through physical activity.

53. There is no need to be able to plan a personal physical fitness program.

54. You have a higher regard for the body once you know a little how it works.

55. Physical activity should become an integral part of the person's life.

56. Competing with another person is exciting.

57. Physical education forms sensible ideas about fitness.

58. I don't think that physical education should be compulsory.

59. Principles of physical education should be utilized in everyday activity.

60. The main outcome of physical education is fulfillment of the individual's physical potential.

61. Physical education should make me more acceptable to change in respect to activity.

63. Physical education helps a student to find himself, within peer groups.

64. One should learn to enjoy physical exercise.

65. People are afraid to be "active".

66. Physical education is ignored by most students.

67. A physically fit person is more optimistic than a run-down person.

68. I see almost no value in physical education.

69. Physical weariness derived from participating in a vigorous game overshadows any pleasure.

70. Physical education should give you knowledge of how you appear to others.

71. A person must be physically fit in order to meet the stresses of life.

72. Physical fitness permits one to move more efficiently.

73. There is no reason for an overweight person to change his present condition since he has been this way all of his life.

74. Taking a swim or playing a game during the noon-hour would be a satisfying experience.

75. Physical activity helps resist psychological disorders.

76. Being able to play any games well is of little importance to me.

77. It is difficult to secure information concerning body health.

78. Physical activity can be fun now and when you are older.

79. I do not take part in a sport activity unless persuaded by a friend.

80. Understanding the body is necessary for a weight control program.

81. Daily exercise should be carried on through life.

82. Present information on health scares you into becoming fit.

83. When exercise is experienced, a pleasant fatigue follows.

84. Competition is good for everyone.

85. You need to be aware of the forms of physical activity around you.

86. Physical fitness is good, but man can survive without it.